



BAR

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Editorial

Welcome to British Army Review (BAR) 178 Summer 2020. It is with great sadness that we report the recent and unexpected death of Colonel David Benest. As a Parachute Regiment officer and a veteran of the Falklands War, David had experienced our profession at its most demanding. He was committed to the development of military thought and for many years acted as the Managing Editor of the BAR at DGD&D at Upavon. He was supportive to all who worked with him and a good friend to all in the wider BAR 'family'. We will miss him.

When we wrote the editorial for BAR 177, we commented on the dramatic events that took place in the Middle East in the Autumn of 2019 and early 2020. Little did we know that concurrent to the increasing tensions between Iran and its adversaries at that time, a little-known natural threat was beginning to rear its head in central China. The subsequent global spread of the COVID-19 virus, with some 21,000,000 cases worldwide, leading to some 760,000 deaths to date (14 August 2020), has caused an economic downturn not seen in living memory. This has disabused us of any sense that the threats we face come from the human world alone.

Facing these extraordinary challenges, it was no surprise that the Army, alongside our sister Service and Civil Service colleagues, was at the forefront of the efforts to support the country. Perhaps the most visible personnel were those involved in helping the NHS ensure that any surge in COVID-19 patients did not overwhelm the national hospital systems. This was a truly integrated effort as military medics, engineers, logisticians and combat personnel worked night and day, alongside other government department employees and those in the commercial sector, to deliver the Nightingale facilities the NHS required. Beyond that, we have seen Army personnel seconded to support national and local government planning teams, logistic teams assisting with the distribution of PPE, military staffed testing stations to name but a few. These efforts have been very much in the best traditions of the Army, and while we are by no means out of the woods, they contributed significantly to the fact that some of the potentially catastrophic predictions of March have not been realized.

Equally impressive has been the adaptability shown in maintaining some of our more familiar outputs. Deserving a special mention here is ARITC, whose innovative use of distributed training, and a fierce 'COVID-19 battle-discipline' in its training units, has maintained the inflow of our new recruits. Across the Army, individuals have worked in a similar vein to find ways to maintain their own contributions. Those that had already been issued with MODNet laptops have been able to develop remote working practices. To some extent, this has enabled those that have been required to attend their workplace to do so within social distancing guidelines. This aspect of our resilience has also been facilitated by the recent increased provision of single-occupancy SLA for our personnel. These benefits are nowhere near as widely available as we would like, but without modern SLA and laptop-enabled remote working, the Army would have been in a much worse place to respond to COVID-19.

One of the other consequences of the COVID-19 pandemic has been the economic impact on the country, with some potential fiscal effects on the Integrated Defence, Foreign Policy and Security Review, announced by the Government in February. While the majority of our people have grappled with the direct and indirect challenges of COVID-19, the Strategy teams in Army HQ have undertaken a wide programme of consultation across the Field Army to shape the Army's Integrated Review proposition. Experience over the last decade has revealed revanchist adversaries more willing to challenge the international status quo and our national interests within it. Similarly, newer adversaries have come to the fore as the boundary between state-based threats, violent extremism and criminal activities becomes increasingly blurred. Emerging technologies and new operational concepts offer enticing opportunities to meet these challenges, but inevitably the books will have to balance. There will be decisions over how we generate the resources for re-investment, with analysis of historical and contemporary conflicts helping build the evidence base to inform this process. This is not the first time the Army has undergone this activity and I dare say that some of our lucky younger readers will

have the privilege of doing it again as future members of the General Staff. But everybody will have a part to play; the conceptual component is the preserve of all, so, take every opportunity to add value when and where you can.

To that end, BAR178 takes a look at emerging ideas about Combined Arms Manoeuvre in the 21st Century as its theme, with articles from the STRIKE Experimentation Group, ARRC, 1(ISR) Bde, and 1st (Avn) Bde highlighting their recent work in this area. Beyond that, this edition includes the usual wide-ranging debates over military thought and a selection of book reviews. We hope you enjoy it.

The Integration of Competitive Combined Arms Manoeuvre in the Information Age

Colonel Richard Taylor, DSO, Commander STRIKE Experimentation Group, looks at how the Army could integrate innovative all arms, multi-domain and multinational manoeuvre tactics with industry technology to deliver the competitive advantage to win.



A Soldier from the Royal Welsh, United Kingdom prepares to move on the simulated enemy during a live-fire training exercise at Range OP4 in Camp Grayling, United States. Photo: Specialist Chris Estrada, US Defense Visual Information Distribution Service (DVIDS), Released

COMBINED ARMS MANOEUVRE

By the end of the Great War, the British Army were masters of the all arms, air-land battle, cutting edge technology and daring tactics to win. During the subsequent years of peace and economic turmoil, these ideas enthused the regeneration of the Wehrmacht while the British Army regressed. It took the harsh defeat of 1940 for the British Army to embrace modernisation again and relearn how to win. Two decades into the 21st century Information Age, we are in a 'phony peace' of constant competition with multiple adversaries. Are our current combined arms tactics and technologies relevant to this rapidly evolving threat? If we integrate modernisation and readiness training by design, then we could integrate innovative all arms, multi-domain and multinational manoeuvre tactics with industry technologies to deliver the competitive advantage to win. This paper will propose what we could seek to achieve through greater integration; and how we could adjust our training to generate a more competitive, integrated capability that is trusted by our soldiers, understood by our Allies and difficult for our adversaries to anticipate.

WHAT SHOULD WE SEEK TO ACHIEVE?

Combined Arms Integration: Tactical Tempo and Simultaneity:

By generating a combined arms instinct to integrate movement and fires rapidly as a dispersed swarm, we can pose multiple simultaneous dilemmas¹ to unhinge enemy decision-making. Russian Reconnaissance-Strike tactics seek to find troop concentrations, destroy them with long-range fires², then move in ground forces.³ Tactical tempo and dispersion to outpace enemy fires are therefore essential

for survival, but combined with simultaneity they can be used to manoeuvre into a position of advantage to seize the initiative. Unlike the Russian sequencing of fire and movement, the West are adept at synchronising simultaneous joint fires and ground manoeuvre.⁴ On the US Warfighter Exercise in April 2019, the US 1st Infantry Division sought to 'present the enemy with multiple dilemmas across multiple domains and in multiple locations... We were able to achieve tempo by persistently presenting complementary dilemmas to the enemy in unexpected ways... Conducted simultaneously, the penetrations, turning movements, and tactical deceptions enabled the division to achieve a degree of irreversible momentum against the enemy.'⁵ Therefore, by integrating dispersed combined arms manoeuvre down to Troop/Platoon (Tp/Pl) supported by layered fires and ISR⁶, commanders could generate greater freedom to concentrate effect without the risk of concentrating troops. Manoeuvring at speed on multiple axes, they can synchronise fires and movement to pose multiple simultaneous dilemmas to maintain the initiative whilst keeping the enemy in the 'O-O' part of the 'Observe-Orientate-Decide-Act' loop.⁷

Ground-Air-Information Manoeuvre Integration:

Operational Speed of Relevance: The operational agility to move, adapt and act faster and further than the enemy may be more relevant in the Information Age than overwhelming mass. Both Russia and Daesh achieved their strategic objectives in Crimea and the Levant in 24 days, just as the West were emerging from expensive, indecisive campaigns in Iraq and Afghanistan.

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- 1 Taylor and Kay explain that 'dilemmas are not the same as problems. A problem is a situation regarded as unwelcome or harmful that must be dealt with and overcome. A dilemma, by contrast, is a situation in which a difficult choice has to be made between two or more alternatives, especially equally undesirable ones.' Curt Taylor and Larry Kay, 'Putting the Enemy between a Rock and a Hard Place: Multi-Domain Operations in Practice,' *Modern War Institute at West Point* (27 Aug 19), 5.
 - 2 Parfitt, Tom, 'Ukraine Promises Retribution for at Least 19 Soldiers Killed in Rebel Rocket Attack,' *The Telegraph*, 11 July 2014,
 - 3 Fox, Amos C., and Rossow, Andrew J., 'Making Sense of Russian Hybrid Warfare: A Brief Assessment of the Russo-Ukrainian War,' *AUSA Land Warfare Papers*, No. 112 (March 2017), 13.
 - 4 McGrath, John J., *Crossing the Line of Departure: Battle Command on the Move, A Historical Perspective* (Fort Leavenworth, KS: Combat Studies Institute Press, 2006), 185.
 - 5 Taylor and Kay, *Multi-Domain Operations in Practice*, 5-7.
 - 6 Layering of fires and ISR at each echelon allows the Combat Team/Subunit to accelerate manoeuvre tempo; BG to target low priority targets to enable wider dispersion; and formations to focus on High Value Targets in the deep battlespace.
 - 7 Taylor and Kay, *Multi-Domain Operations in Practice*, 6.



Soldiers from the Parachute regiment take up a position before mounting onto Puma helicopters to practice the basic skills behind planning and executing air assault operations together. Photo: Corporal Ben Beale, Crown Copyright

The Russian operational approach is to use hybrid warfare⁸ in a perpetual political competition with the West⁹ interspersed with rapid opportunistic pulsations of violence to achieve an advantageous position before the international community can understand and react.¹⁰ This is reinforced by a willingness to rapidly escalate and de-escalate conventional force. Their unit of currency is the Battalion Tactical Group (BTG) - a resilient combined arms group with considerable firepower.¹¹ If we have the operational speed to deploy force as Russia acts, we could pre-empt their actions rather than react to their success. However, we need the adaptability to escalate and de-escalate our posture and manoeuvre

rapidly to maintain the initiative and deny their success. Marlborough, Wellington and Napoleon enabled success through their timely movement of forces into a position of advantage to shape their decisive battle and to adapt during it. In the Information Age, we could also shape early advantage through rapid deployment and integration of vertical air manoeuvre with lateral ground manoeuvre and psychological information manoeuvre to minimise costly attrition. With the speed of response necessary to be relevant in sub-threshold conflict, this integration may happen equally at the subunit and battlegroup level as at the brigade and divisional level.

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- 8 Leonard and Philips characterise Russian hybrid warfare as undeclared action that combines conventional and unconventional military operations, while coupling military and non-military actions in an environment in which the distance between strategy and tactics has been significantly reduced and where information is critically important. Robert R. Leonhard and Stephen P. Philips, 'Little Green Men': A Primer on Modern Russian Unconventional Warfare, Ukraine 2013–2014 (Fort Bragg, NC: U.S. Army Special Operations Command, 2015), 17–18.
- 9 Berzins, Janis, *Russia's New Generation Warfare in Ukraine: Implications for Latvian Defense Policy*, National Defense Academy of Latvia: Center for Security and Strategic Research, Policy Paper no. 2, April 2014, 5.
- 10 Gerasimov, Valery, 'The Value of Science is in the Foresight: New Challenges Demand Rethinking Forms and Methods of Carrying Out Combat Operations,' trans. Robert Coalson, *Military Review* 96, no. 1 (January–February 2016), 24–29.
- 11 A Russian BTG comprises a tank company, three mechanised infantry companies, an anti-tank company, three self-propelled artillery batteries, a multiple launch rocket company and two air defence batteries. Phillip Karber and Lieutenant Colonel Joshua Thibeault, 'Russia's New-Generation Warfare,' *ARMY* 66, no. 6 (June 2016), 62–63.

Threat Integration: Exploitation of our Own Strengths and Enemy Weaknesses: If we fully understand the strengths and weaknesses of both the enemy and our own force, then we could be less predictable and minimise attrition. US Multi-Domain Operations, the British Army Land Operating Concept and Russian New Generation Warfare (NGW) all see nations in constant competition; and a blurring of the boundaries with intermittent armed conflicts that seek to achieve rapid success before returning to competition. The key difference is that the West seeks decisive success such as military defeat or regime change, whereas Russian NGW seeks relative advantage, which is less costly and weakens neighbouring states with frozen internal conflicts that drain resources.¹² Above we have identified the challenges of enemy firepower, ambiguity and speed; and the opportunities in our own tempo, simultaneity, operational agility and manoeuvre. Another challenge is our predictability - if the enemy can anticipate our actions: rapid drills and speed of deployment will only lead to accelerated attrition. In the Information Age, it may be more relevant to constrain some of the enemy by fixing them at reach rather than fixing ourselves in trying to defeat all the enemy.

Multinational Integration: Mutual Trust with Allies and Host Nations: In the near term, we are unlikely to see a return of the military mass seen in the last century. Closer multinational integration with both Allies and host nation partners will therefore be essential to leverage the appropriate combat and combat service support swiftly enough to win. Closer technical and procedural integration accelerates tactical tempo and operational speed by enabling low-latency ISR fusion and fires, and timely commodity sharing. However, it is the human interoperability of mutual trust developed through integrated training that delivers battle-winning coherence. Robert Leonard writes that *the goal in military campaigning is to relentlessly act against the enemy without interruption until the objective is achieved.*¹³ In the Information Age where agile escalation and de-escalation can influence a campaign, joint force coherence and mutual trust is critical to success.

Modernisation-Readiness Integration: Exploitation of the Cutting Edge of Technology: The integration of cutting-edge technology in our readiness training is equally as important as innovative tactics to win in the



Pictured is a member of C Company, 3rd Battalion The Parachute Regiment during exercise Yellow Assault, a live fire battle camp, focusing on their core infantry skills of fire and manoeuvre on the wintery STANTA training area in Norfolk. The training refreshes and reinforces their ability to work together to assault objectives, starting from individual movement on a firing range to attacks as an eight-man section, then bringing sections together to attack as a platoon. Photo: Corporal Jamie Hart, Crown Copyright

¹² Figes, Orlando, *The Crimean War: A History* (New York: Metropolitan Books, 2010), 41.

¹³ Leonhard, Robert, *Fighting by Minutes: Time and the Art of War* (Westport, CT: Praeger, 1994), 91–97.

Information Age. Fox and Rossow explain that Russian NGW *seeks to capitalize on the weaknesses associated with nascent technology and therefore acts aggressively in new domains of war - such as cyber - while continuing to find innovative ways to conduct effective information warfare.*¹⁴ The West has a great advantage in technology over our adversaries, but we can be slow to procure it and slower to trust it. CGS seeks to accelerate technical integration in his vision of Prototype Warfare *to capitalise on that intrinsic British talent for continuous adaptation... our training exercises and operations must become laboratories for innovation, allowing the Army to rapidly prototype new ways of warfare.*¹⁵ Commercial technology that we regularly use at home has the military potential to accelerate tempo and enhance efficiency just as much as slick drills. Artificial intelligence software applications, networked HUMS¹⁶, and manned-unmanned teaming with unmanned vehicles integrated with our new generation of digital fighting vehicles and networks can accelerate ISR fusion, digital joint fires and sustainment. Network enabled capability development has traditionally focused on efficiency in an uncontested environment, but now needs to focus on resilience - preserving the capacity to operate in a degraded electromagnetic environment - as our adversaries have invested heavily in cyber denial.

If we develop this resilience to be used pre-emptively as alternatives, not just reactively as reversionary modes, then we could be more agile when we want to move between centralised and decentralised command.

HOW DO WE ACHIEVE IT?

Train as we seek to fight - Teeth to Tail: Integrating innovative tactics and novel technology to generate a more competitive force is easier said than done. A first step could be to train as we seek to fight by integrating combined arms 'teeth-to-tail' throughout training. The US Marines are trained to be a 'Marine first, specialist second': should we have broader generalist training including anti-armour weapons, mounted manoeuvre tactics, and battle damage repair? Regimental identity lies in a group of people with shared experience not in their trade training: should we integrate combined arms training earlier at Troop/Platoon level? In addition to concentrating force like a mailed fist, can we develop alternative options to operate dispersed in multiple small combined arms groups concentrating effect at reach like a swarm of bees? This would require networks, gun batteries, supply, repair and MEDEVAC to be tested equally on readiness training

rather just being training enablers: this could enhance tempo, simultaneity and efficiency.

Train to Win - Managing not Minimising Risk: Greater unpredictability is driven by a greater variety of options - not just in combat actions but also for potentially vulnerable CSS operations. There is no better elixir than competition in generating innovative options to win. Force-on-force training in simulation and in the field drives commanders to innovate with risk to deceive their opponent and deny them the advantage of anticipating their actions. Can we attack without concentrating in assembly areas, on the objective and in the re-org? Is the best course of action the most predictable - or could it be used as the deception plan to shape the successful execution of COA2? Should a dismounted subunit attack from the best axis and a single point of fire be diluted to create multiple mounted points of fire and secondary or tertiary mounted attacks simultaneously from multiple axes? Initiative is a muscle that needs constant reps, but it also needs a 'safe to learn' environment and incentive to manage not minimise risk - the boldest measures may ultimately be the safest. For example, to achieve operational speed of relevance we need to learn expeditionary risk in fighting 'off the ramp'. This increased volume of training may not be affordable live, but networked training simulation could increase the volume of combined arms training.

Training as Surrogate Warfare Against THE Enemy: Conflict is ultimately a human endeavour: by framing our training against real adversaries and their idiosyncrasies in leadership, doctrine and training, we could adapt more credibly to the specific nature of each mission, threat and environment. If Russian reconnaissance-strike doctrine is reliant on decisive fires to enable manoeuvre, should we privilege manoeuvre by training options to blind reconnaissance, fix BTGs at reach and manoeuvre dispersed at pace to bypass BTGs and make them irrelevant? This could give our combined arms manoeuvre options to fight 'like a boxer or like a wrestler' - the adaptability to deliver a decisive blow when and where required or to constrain at reach to achieve rapid de-escalation or shape information or air manoeuvre. Rather than pitching armoured strength against armoured strength, could we take the unusual risk of allowing operational penetration to fight the deep shaping battle against enemy combat support and CSS with ground manoeuvre brigades; and fight the decisive

14 Fox and Rossow, *Making Sense of Russian Hybrid Warfare*, v.

15 Carleton-Smith, General Sir Mark, 'Introduction', *Soldier Magazine* (January 2019), 1.

16 Health and usage management systems in our cars can already predict what spares are needed when and can warn the supplier and garage mechanic.



The 2019 Army Combat Power Demonstration (ACPD) took place on Salisbury Plain from 28 - 30 Oct 2019. Highlights included a simulated attack on the village by Challenger 2 tanks, Warrior AFVs, Engineers and attack helicopters and also provided an insight into what the Army's Strike capability will look like.

battle against enemy armour with air, aviation and artillery? By practising real contingency plans in our training, we could also refine the plans and enhance our adaptability and operational speed of relevance.

Train Multi-Domain Multinational Manoeuvre in the Deep: Winning against an enemy that can rapidly escalate or de-escalate and merely seeks relative advantage will require a greater focus on shaping actions to constrain their freedom and enable decisive manoeuvre. Although we privilege the close decisive battle in combined arms training, there is so much potential in the integration of multi-domain, multinational manoeuvre in the deep shaping battle. Training 'wolf packs rather than tigers' may be more relevant in the Information Age to synchronise effects rapidly and relentlessly with the agility to constrain, defeat or destroy in order to win with minimal attrition. Russia could overmatch us in firepower if we are slow and predictable, but if we regularly practice the integration of multinational air, ground and information manoeuvre simultaneously in all domains then we could unhinge their decision-making enough to seize the initiative.

This could be particularly important in early campaign actions against anti-access area denial capabilities, where we have a lot to offer in the collaboration of our ground and information manoeuvre with US Multi-Domain Task Force fires.

Train with Industry to Unlock Bottom-up Innovation and Trust: Empowering bottom-up innovation by soldiers and industry engineers could supercharge modernisation to deliver competitive advantage and CGS' vision of Prototype Warfare. Integrating industry more closely into our training could enhance mutual understanding, and provide a practical user input to the technical scientific evidence that currently drives capability investment decisions. More importantly, it can act as a catalyst to build soldier's trust in new technology and accelerate the change in mindset. A new 30mm turret for Stryker was fielded in 32 months from design to delivery through the early and intimate engagement by industry with the frontline users in the US 2nd Cavalry Regiment. So, could we contract industry to embed with units to spirally upgrade capabilities through life? Could units be designated as industry hubs for specific

prototypes? This low-level engagement is essential to revolutionise our mindset and develop agile command, efficient sustainment and credible lethality. Gaining information advantage and the speed and simultaneity to unhinge enemy decision-making will require the integration of innovative tactics and trust in technology. Commanders will have to rely on decisions made by artificial intelligence and information digitally-fused by the network in a common intelligence picture, common operating picture and a commander's dashboard of current and predicted combat effectiveness.

Russia, China, North Korea, Iran, and a myriad of violent extremist organisations pose a threat in the 21st century Information Age that has human challenges and opportunities we should exploit in our training. The Second Chechen War (1999–2009), the Russo-Georgian War (2008) and the Russo-Ukrainian War (2014–present) illustrate the requirement for innovative tactics to enhance tactical tempo, simultaneity, operational speed and integration between combined arms, and multi-domain, multinational and industry partners. This article has offered some suggestions on how we could integrate modernisation and readiness training to generate a more competitive mindset. Hopefully, it will stimulate discussion to supercharge bottom-up innovation with the 'safe-to-fail' confidence to generate alternative, unpredictable, options for integrating combined arms manoeuvre in the Information Age. Innovative, unpredictability options should not be the preserve of brigade and divisional actions, but should be encouraged at all echelons and in all arms.





A Trojan armoured vehicle, operated by Royal Engineers, pushes forward to breach enemy positions during The Army Combined Power Demonstration on Salisbury Plain that was designed to showcase the breadth of the Army's utility and demonstrate how the Army operates in an era of constant competition. Photo: Sergeant Tom Evans, RLC, Crown Copyright

The Application of Information Manoeuvre to Combined Arms Manoeuvre

Major Jason Wood, Int Corps, looks at the role that Information Manoeuvre (IM) plays in generating Combined Arms Manoeuvre and operational art.



Pictured is a soldier from 1 Armoured Infantry Brigade with a Light Machine Gun (LMG) during a live firing exercise during the Combined Arms Manoeuvre Demonstration held at Knighton Down, Salisbury Plain Training Area. Photo: Stuart Hill, Crown Copyright

This article describes the doctrinal background to Information Manoeuvre, its development as a concept, how it is employed and the evolution of Information Manoeuvre Groups. The information-centric capabilities and outputs have been features of military operations for a long time. However, the Information Manoeuvre Group is more than an umbrella for previously information-centric outputs; it produces information-fused outputs. Information Manoeuvre plays a key role in generating Combined Arms Manoeuvre and, through Integrated Action, the execution of operational art by a commander. The account of Information Manoeuvre's development, in conceptual and physical terms, identifies significant opportunities for exploitation. These include experimentation and informing future Army (and Defence) doctrine on the synergy that Information Manoeuvre gives to all aspects of Integrated Action.

IM AS A CONCEPT AND ROLE WITH INTEGRATED ACTION

Information Manoeuvre is best described in the '5,4,3,2,1' narrative, comprising five capabilities that provide four outputs in three dimensions on two fronts with a single purpose. The five capabilities include Intelligence (as an element of Intelligence, Surveillance and Reconnaissance), Networks (including Communication and Information Systems), Influence (including Information Activities and Outreach), Cyber (and Electro Magnetic Activity that makes up the term 'CEMA') and Security (including Counter Intelligence). These five capabilities provide four outputs; UNDERSTAND, COMMUNICATE, PERSUADE and PROTECT. It is important to note that individual capabilities do not provide a single output; intelligence is not the only contributor to UNDERSTAND. The three dimensions include physical, virtual and cognitive, signifying that Information Manoeuvre can have an effect in the whole of the electromagnetic spectrum (virtual) as well as using the physical dimension to influence audiences in the cognitive. Home and Away represent the two fronts, but in reality this is a spectrum. This is perhaps better described by the MOD's recently released Integrated Operating Concept 2025 (IOpC)¹, which describes contesting our adversaries using the functions of protect, engage and constrain, discussed in more detail later. The primary purpose of information manoeuvre,

as described by this narrative, is to *shape our audiences' perceptions and change or maintain their behaviours, as an essential element of Integrated and Joint Action.*

Information Manoeuvre, as proposed by emergent doctrine on the topic,² is to use 'Defence information capabilities to gain or maintain a position of information advantage to support integrated action.' However, the link between Information Manoeuvre and Integrated Action was not explicitly made in our initial doctrine. Indeed, the term Information Manoeuvre was omitted entirely,³ and it is only in more recent notes that it has been included.⁴

The Army's capstone doctrine, describing Integrated Action, only has a footnote to reference Information Manoeuvre merely as the information-related activities undertaken by the other tactical functions.⁵ Similarly, differences exist in the articulation of Land Manoeuvre and Information Manoeuvre. Whereas ADP Operations classifies Land Manoeuvre as *the combination of ground and air manoeuvre enabled by manoeuvre support*, emerging Information Manoeuvre doctrine proposes that Land Manoeuvre consists of Information Manoeuvre, alongside Air, Ground and Littoral Manoeuvre. Taken together, this suggests that more work is needed to refine how we apply Information Manoeuvre within an Integrated Action approach.

At a more tangible level, Integrated Action describes the four tactical functions primarily focused towards actors as; manoeuvre, fires, information activities and capacity building. Ground and Air Manoeuvre within 3rd (UK) Division is predominantly (although not exclusively) provided by the Manoeuvre Brigades and 1st Aviation Brigade. The Offensive Support Group and 1st Artillery Brigade provides fires as a tactical function. The Information Manoeuvre Group leads on the provision of Information Activities and all formations supporting 3rd (UK) Division would potentially play a role in Capacity Building. The Information Manoeuvre Group not only provides a large element of Understanding (a prerequisite for Integrated Action) but provides an essential co-ordinating and synchronising role in generating Integrated Action within the Division.

1 *Integrated Operating Concept – dated May 2020.*

2 *Doctrine Note 19/04 - Information Manoeuvre*

3 *Doctrine Note 15/01 - Information Manoeuvre*

4 *Doctrine Note 19/04 - Information Manoeuvre*

5 *ADP Land Operations*

However, Information Manoeuvre's role in Integrated Action is much greater than just being one element of Land Manoeuvre. Information Manoeuvre represents a real opportunity to empower the Manoeuvrist Approach in 21st century military operations. Information Manoeuvre provides the predominant contribution to our understanding of any operational environment and enables our accurate analysis of the problems at hand. This in turn allows Information Manoeuvre to provide several appropriate options to both conduct and inform indirect approaches to degrade the enemy's cohesion and will to fight. In this way, we can see Information Manoeuvre's underpinning role and reach across the breadth of Integrated Action and its utility in Operational Art. It is the oil lubricating the 21st century military machine.

While current Army doctrine does not capture the role of Information Manoeuvre, it also fails to articulate how it is currently being put into practice via Information Manoeuvre Groups. To better highlight the role Information Manoeuvre plays across the Army this article will describe what Information Manoeuvre Groups, predominantly at

Divisional level (with HQ 3rd (UK) Division), have achieved. This is by establishing an organisation fully integrated into the Division, which delivers Information Manoeuvre alongside and supporting other organisations responsible for Land Manoeuvre and Integrated Action.

EVOLUTION AND APPLICATION OF INFORMATION MANOEUVRE GROUPS

Information Manoeuvre Groups draw their capabilities almost exclusively from the formations in 6th (UK) Division; 1st ISR Brigade, 77th Brigade, 1st Signals Brigade, 11th Signals Brigade and more recently the Specialised Infantry Group. The Divisional Information Group (DIMG, supporting the 3rd (UK) Division) is the most rounded and well-established embodiment of Information Manoeuvre in the Field Army. The Division is the lowest level where Information Manoeuvre can realistically be generated, due to the need for the fusion of multiple sources and the management of the permissions and policies necessary to achieve outputs. Information should be commanded high but controlled as low as possible and the execution might therefore be delegated to subordinate force elements.



Troops from 5 Rifles Battle Group conducted Platoon Manoeuvre live firing training in Warrior Armoured Fighting Vehicles (AFV) as part of the 5 Rifles Battle Group preparation ahead of their deployment on Op CABRIT the NATO enhanced forward Presence in Estonia a multinational battlegroup led by British troops. Photo: Corporal Rob Kane, Crown Copyright

The DIMG was the first of the Information Manoeuvre Groups to emerge, following feedback on the joint US-UK exercise WARFIGHTER (WFX) 17.5 in 2017. This evolved the separate Intelligence, Surveillance and Reconnaissance Group, Information Activities and Outreach, and Communications Information Systems capabilities into a single organisation to provide more coherent, fused information outputs. Since then the DIMG has exercised on IRON RESOLVE 17, ARCADE FUSION 17, WFX 18.4, SPECULAR 19 and most recently WFX 19.4. The DIMG is led by Commander 1st Intelligence, Surveillance and Reconnaissance Brigade as Commander Information Manoeuvre, who has the five capability team leads⁶ (usually Lt Col-SO1 level) in close proximity.

The capability teams then operate in a dispersed manner across the HQ 3rd (UK) Division 'pistons' of Future Plans (FPlans-G5), Future Operations (FOps-G3/5) and Current Operations (COps-G3). The DIMG is not a separate organisation that works as a standalone pillar but situates its teams precisely where the outputs are required across HQ 3rd (UK) Division. The DIMG produces Information Manoeuvre Concept of Operations (CONOPs) that is an essential part of the Divisional CONOPs. Some of the Information Manoeuvre CONOPs would be executed by the DIMG but the majority would provide the Information Manoeuvre aspects delivered by other formations such as 1st Aviation Brigade and/ or the Offensive Support Group.

The DIMG has evolved to work routinely in a dispersed manner; able to provide coherent Information Manoeuvre outputs wherever they are required without being co-located with the rest of the DIMG. This includes the manner with which it works with its DIMG Rear component, where 60% of its analytical horsepower generally sits. On WFX 19.4, DIMG Forward was in Fort Hood, Texas, USA with DIMG Rear in the Iron Division Operations Centre (IDOC) in Bulford Camp, Wiltshire, UK, supporting the deployed Divisional HQ from its own home location. The reality of operating like this was that DIMG Rear might as well have been the other side of Fort Hood rather than six time zones ahead in the UK as the transatlantic divide was almost seamless. The only other element of the Divisional HQ that has a rear element, co-located and integrated with DIMG Rear, is the Joint Fires and Targeting branch. This included a team of targeteers from 1st Artillery Bde and HQ 3rd (UK) Division working alongside Information Manoeuvre capabilities such as Influence, Cyber and Intelligence to identify targets,

synchronise and deconflict destructive and non-destructive effects. These were primarily in the Division's Deep battlespace, where analysis was also conducted on measuring the effect, assessing the impact and looking to the next sets of targets.⁷ It is important that there is a prescribed set of Joint Effects definitions which users at all levels of command and with partners recognise. The soon to be published JTTP 3-81 will help to set this baseline of Joint Effects definitions and will help with the development of Information Manoeuvre. It will help to generate clarity and precision. The DIMG operating sphere stretches well beyond warfighting and, although yet to be used in many other scenarios, it has been deployed in support on the UK military's response to the COVID-19 pandemic. An Information Manoeuvre Group was established to support Standing Joint Command UK (SJC UK) as part of Op RESCRIPT, assisting SJC (UK) to provide fused information outputs as part of the Military Assistance to the Civil Authority (MACA) tasks to tackle the COVID-19 pandemic in the UK. This evolution of Information Manoeuvre is a milestone for the concept moving forward, not just in the UK as part of the protect function but elsewhere with the engage and constrain functions also.

IMPLICATIONS OF IM AND IM GROUPS MOVING FORWARD

The recently released Integrated Operating Concept 2025⁸ (IOpC) articulates the three functions of protect, engage and constrain which describe Defence operating below the threshold of war. These three functions are underpinned by fighting (above the threshold for armed conflict). Information Manoeuvre is an underlying element of IOpC although the term is not used. Instead, Information Advantage and Integrated Action are used as anchors. What is clear, however, is how Information Manoeuvre Groups could play a pivotal role. Fighting as part of armed conflict already has a precedent set in the involvement of Information Manoeuvre in the form of the DIMG. The constrain and engage functions could see Information Manoeuvre Groups central to changing perceptions, bolstering deterrence and challenging adversaries below the threshold of conflict. The protect function covers a variety of operations that provide resilience to the home base. The role of Information Manoeuvre as part of Op RESCRIPT is recent and live example of how it could contribute. Information Manoeuvre and Information Manoeuvre Groups would add huge value prior to warfighting to escalate and posture from understanding and contesting to disruption and delaying activity.

⁶ *Intelligence, Surveillance and Reconnaissance, Networks, Influence, Cyber and Electro Magnetic Activity and Security.*

⁷ *This could be the next Decision Point (as part of Decision Point tactics), next Target Area of Interest (TAI) on the Decision Support Overlay.*

⁸ *Integrated Operating Concept - dated May 2020.*



The full force of British Army firepower is brought to bear on Salisbury Plain as during The Army Combined Power Demonstration designed to showcase the breadth of the Army's utility and demonstrate how the Army operates in an era of constant competition. It focusses on demonstrating: Information Manoeuvre & Unconventional Warfare, War-fighting, Prototype Warfare, Enablement and an Interactive stand. Photo: Corporal Rebecca Brown, Crown Copyright

There are opportunities for Information Manoeuvre to exploit this already with the establishment of the Land Operations Centre (LOC) and 6th Division Operations Centre.

In the next training year, the DIMG will have further development opportunities on exercises CERBERUS and WFX 21.4 where it can both build upon its baseline capability as well as looking to integrate new capabilities such as HYDRA, a cloud-based analytics capability allowing better incorporation, fusion and analytical collaboration. Operationalising Information Manoeuvre Groups and learning lessons from deployments such as Op NEWCOMBE (British operations in Mali) would not only add value to current and emerging operations but opportunities to conduct experimentation and learn in real-world examples rather than just ones on exercises.

CONCLUSIONS

Information Manoeuvre has predominantly been a bottom-up enterprise in the Army, based on the recognition that delivering information-fused outputs,

rather than separate information-centric outputs, is critical to Integrated Action. The ability of Information Manoeuvre to fit neatly into Army and Joint doctrine is not a surprise as individual capabilities have been a feature of warfare for centuries. However, the ability to provide coherent Information Manoeuvre outputs from Information Manoeuvre Groups is enhancing the ability of the Army to conduct Integrated Action, evident already at the Divisional level. As Information Manoeuvre is so central to the implementation of Integrated Action it should be recognised as a vital element to a commander in the delivery of Operational Art. Information Manoeuvre not only adds extra desirable features to Integrated Action but allows a commander to generate bold, offensive action, and thus the Manoeuvrist Approach, with more confidence. The involvement of Information Groups on Op RESCRIPT was not a foreseen deployment due to the nature of COVID-19, but it showed what level of synergy can be achieved in both a real-life example and on operations other than warfighting. In an era of constant competition where the Army must operate across the physical, virtual and cognitive dimensions to

deliver outcomes, Information Manoeuvre provides an opportunity to give it a competitive advantage over its adversaries and a unique selling point for its allies.

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Pictured is an Apache AH1D Attack Helicopter flying in support of the exercising troop movement during the British Army's Combined Arms Manoeuvre Demonstration held at Knighton Down, Salisbury Plain Training Area. Photo: Mr Richard King, Crown Copyright

Agile Command and Control: A Corps Perspective

This article, by **Major Luke Campbell**, Royal Signals, argues that ARRC C2 has evolved to encompass far more than just technology.



HQ ARRC Agile C2 Experimentation during Ex ARRCAD E FUSION 19. Photo: HQ ARRC

In the contemporary era, the unbridled drive for *agility* is evident in all facets of modern life from FTSE 100 companies to professional sports teams. It is unsurprising therefore, that it is also desirable for the delivery of effective command and control of large military organizations, with JDP6 defining it as providing, *'the ability to respond quickly and appropriately to change*. However, experience has shown that the requirements for command and control can often pull against each other in a way that makes agility difficult to achieve.¹ By exploiting improvement and innovation in the way we develop our people, processes and technologies we intend to re-establish Agile C2 at the corps level. In specific terms this article will focus on Agile C2 through the lens of tactical corps warfighting as part of a NATO Article V Multi-Domain Operation.² For reference, HQ ARRC defines Agile C2 as an, *ongoing transformation project aimed at dramatically improving tempo, integration and survivability*.³ This article will underscore those experiences that illuminate the Corps perspective of Agile C2

NATO defines command and control (C2), as, *set of organizational and technical attributes and processes ... [that] employs human, physical, and information resources to solve problems and accomplish missions*.⁴ The complexity arises when these terms are coalesced as a coherent concept or capability as they may not be mutually supportive. To illustrate this point, command in the Corps context is enabling decision-making and influencing the battle to competitive advantage. The requirements of command classically consider small, responsive and mobile command posts to allow commanders to make decisions forward. Conversely, control is the management of the battle and the synchronisation of effects. At Corps level, this will inevitably require greater scale, to cater for multi-national presence across all staff functions. Consequently, these HQs have become less agile and less mobile.

MITIGATE THREATS, EXPLOIT OPPORTUNITIES

The requirement to mitigate threats and exploit opportunities has driven the evolution of an Agile C2 capability. The nature of the threat remains unchanged; the targeting of our C2 can undermine our cohesion. It is the advancement of the character of threat that drives the need for agility. In the period since the end of the Cold War the technical capability to both find and strike targets in depth has increased and higher tactical headquarters are conceivably more vulnerable. Known vulnerabilities show that a command post at any echelon will demonstrate a political, thermal, visual, electro-magnetic and audio signature. These identifying characteristics are likely to be exploited by an adversary at an ever-increasing scale and complexity. The means of detection in the modern era are ubiquitous, pervasive and agnostic to both light and weather. The resultant need for change can be summarised as: *don't be there, don't be seen, don't be hit and don't be killed*.⁵ In local parlance, C2 nodes will remain high on the adversary's HPTLs for lethal and non-lethal effects – home and away. In this respect, agility will result in improved survivability.

However, agility goes far beyond force protection. It is an essential enabler to achieve higher tempo and greater integration necessary to outmatch both the adversary's A2/AD system and the recce-strike complex (and equivalents) which links weapon platforms to the enabling informatics. In this respect, Agile C2 enables mission command systems to network, *...information acquisition, analysis, fusion and dissemination technologies...*⁶ into a time sensitive system. This manner of exploitation fuses high value/priority targets that can be detected, recognised, identified and located to shape the battle.

Although decentralisation has been used recently to reduce the probability of adversarial action, CPs at any level must achieve a balance between decentralisation and the requisite and timely delivery of C2. It is acknowledged

1 Joint Doctrine Publication (JDP) 6, *Communications and Information Systems Support to Joint Operations*, 2008.

2 *Training and Doctrine Command*, 525-3-1, *Multi-Domain Operations*, 2018.

"Multi-domain operations as a concept proposes that the joint force can achieve competitive advantage over a near-peer adversary by presenting multiple complementary threats that each require a response, thereby exposing adversary vulnerabilities to other threats."

3 *Headquarters Allied Rapid Reaction Corps (HQ ARRC), Agile C2*, 2020

4 *North Atlantic Treaty Organisation (NATO), Command and Control*, 2014.

5 *Headquarters Allied Rapid Reaction Corps, Survivability Wargame*, 2019.

6 Guha, M., *Reimagining War in the 21st Century: From Clausewitz to Network-Centric Warfare*. 2010.



British Soldiers from the Royal Scots Dragoon Guards, prepare to conduct a patrolling evaluation during a course designed to instill the fundamentals of leadership at the tactical level in Bemowo Piskie, Poland. The Soldiers participating in this event are deployed in support of NATO's enhanced Forward Presence Battle Group-Poland consisting of four battalion-sized battle groups deploying on a persistent rotational basis to Estonia, Latvia, Lithuania and Poland. This demonstrates Nato's determination and ability to act as one in response to any aggression against its members. Photo: Sergeant Timothy Hamlin, Crown Copyright

that the decentralising of command constitutes limited resultant impact to C2, but the decentralising of control can have immediate and lasting repercussions that must be tolerable in a given operational context. The reachback balance between command and control must strike an optimised equilibrium; for certain operations this could be flatter and less-hierarchical than the historical norm.

The *Agile C2 Roadmap* and the *Draft Land C2 Blueprint* identifies the strategic objectives of Agile C2 which align with capability development at the corps level.⁷ It introduces three enabling themes that provide a handrail to describe the corps perspective: people, processes and technology.⁸ These themes are designed to dovetail with

the Command and Control Sub Concept Framework and the C2 enablers within the strategic doctrine *JCN 2/17: Future of Command and Control*. They represent the cognitive triumvirate of organisation, process and technology that can derive degrees of agility and thus achieve the aim of comparative advantage.

APPROACH TO COMMAND AND CONTROL

In recent years the demands of constant competition have come into ever-increasing focus. As noted by Colonel Davies, *Competition in the Periphery*, in BAR 177, *received wisdom is that major powers have entered a more fluid era of enduring competition for strategic advantage. This is an unpredictable form of competition*

⁷ *Qinetiq, Agile C2 Roadmap, 2019.*

⁸ *Land Command and Control Steering Group (LC2CSG), C2 Themes, 2019.*

*with no conventional state of war or peace, no start or end, and no winning or losing.*⁹ This suggests that the corps must operate a persistent and competitive permanent headquarters which is capable of providing C2 to concurrent tasks across the spectrum of conflict. This persistence supports the road to war in an Article V scenario and provides a nuanced understanding of the adversarial environment in addition to the baseline capability for the mounting, deployment and initial C2.

During initial phases of an operation it is imperative that the threat to C2 is considered and understood through a concurrent C2 estimate. This understanding will drive the staff to provide credible and survivable options for command post locations, scale, footprint, deception, signature management, force protection and operational security.¹⁰ These considerations must be balanced with the risk tolerance to forward command that is predicated on a survivable capability that is controlled from a protected location.

HQ ARRC has harnessed opportunities on exercise to conduct comprehensive experimentation and test procedural and technical advances across the staff. Whilst the list is expansive, one of the key elements is the dispersal and distribution of warfighting command posts, all tested against a challenging and informed threat picture. Following the *Agile C2 Roadmap*, recent exercises have seen the deployment of a variety of smaller command posts designed to increase survivability. Noting the spectrum of C2, experimentation has tested large CPs with *Full Collaboration*, through to highly mobile CPs exploiting Edge C2.¹¹ During these trials several deductions have become evident that will influence future activity. These include:

- *Redundancy and resilience are fundamental but require a larger footprint.*
- *Single points of failure and unique signatures are the underbelly that must attract augmented resource.*
- *Command posts must be limited in size and scale.*

In any conflict it is evident that a single corps headquarters presents a simple, opportunistic target for an adversary that is detectable across all characteristics. Based on CP concept trials it has been proven that more complex distribution and dispersal of the corps staff

compounds the targeting challenge for an adversary and thus increases the survivability of command posts across the corps battlespace.

The corollary is complexity in coordinating a multinational home team that is dispersed and reliant on resilient C4IS. In this latter space, the current COVID 19 landscape may have catalysed this as both an issue and opportunity. These factors are significant to headquarters at any echelon but are compounded by scale, complexity and efficiency for larger command posts and can result in degraded C4IS if concepts are not tested. These considerations are further supported by the following enabling themes: people, processes and technology.

PEOPLE

The battle staff are central to any headquarters and thus are the focus of capability development and experimentation activity. The staff must be able to quickly estimate the value of information and simply 'do something with it' within a given context in support of time-sensitive command decisions. These elements combined with the maturity of the team indicate their capacity to accept and promote Agile C2. Staff maturity can only be optimised with a constructive culture, an embracing state of mind, repetition and operationally focussed training; generating an agile organisational capability. This capability will continue to be dependent on the capacity of the organisation to achieve a collective output.¹² The culture of the organisation is likely to have a dramatic effect on its ability to innovate, transform and adapt. It must consider risk tolerance and encourage apposite risk-taking to ensure that opportunities are realised. In specific terms this process can be supported by creating communities of interest, training super-users, or at its most basic, identifying motivated parties to support innovation. The staff require frequent and realistic training and a common understanding of mission command to ensure they can enable Agile C2 progression. This includes the ability to respond efficiently to the rapid decentralisation of C2 in a dispersed or distributed configuration. In cooperation with the LC2CSG Draft Land C2 Blueprint for Agile C2 there are a number of supporting elements that must be considered when training for decentralisation: *'command style, cognitive agility, dynamic teaming and techno-dexterity.'*¹³

9 *Army Doctrine Publication (ADP) Land Operations, 2017.*

10 *Headquarters Allied Rapid Reaction Corps, Survivability Wargame, 2019.*

11 *Army (Land) Operating Concept, Command and Control Sub-Concept, 2019. "C2 approaches include coordinated (relatively centralised, hierarchical), collaborative (somewhat decentralised, hierarchical with strong peer relationships) and edge (highly decentralised, networked)."*

12 *Harvard Business Review, Capitalizing on Capabilities, 2004.*

13 *Land Command and Control Steering Group (LC2CSG), Draft Land C2 Blueprint, 2019.*

PROCESSES

The battle staff cannot become wholly reliant on the technical convenience of the modern era. Due to multi-national interoperability, mobility, denial, bandwidth, scale and range, the staff must be experienced at developing procedural solutions at pace. This is where a synchronised, focussed and capable staff process can become battle winning. The corps staff must derive operating procedures so that different configurations of dispersal and distribution of lean command posts can be fully tested against a common baseline. Based on high levels of *techno-dexterity*, staff must become comfortable managing multiple systems across a single information environment to boost information exploitation.

This exploitation should harness technical innovations across the fields of artificial intelligence, machine learning and data analytics (AI/ML/DA). Processes must be adaptable to flexible C2 structures that recognise the likelihood of decentralisation and balance efficiency and resilience.¹⁴ To simulate the challenges of dispersal, recent exercises have successfully focussed on virtual interaction in lieu of larger in-person meetings. The success of dispersed working relies on the ability to retain appropriate communication across geographic separation in contested environments. Furthermore, reversionary training in a highly contested EMS/Cyber domain must be the norm and not an inconvenient exception.

TECHNOLOGY

Commercial sectors, like defence, have been plagued with piecemeal and stove-pipe developments that are complex to integrate.¹⁵ The true benefits of information exploitation are the timely sharing and availability of information. Due to multi-national security requirements, Multi-Domain Operations typically require complex technical and procedural solutions across segregated information environments. The collective ambition should always seek to achieve a single information environment supported by an adaptable CIS backbone. This must become the nexus of staff horsepower and be relevant, secure, yet interoperable in a multinational operating environment. Equally, to provide flexible, mission configurable command posts, the supporting infrastructure including mobility, power, lighting, connectivity and staff working environment need to be resilient and easily adaptable. Cable-free technologies promote

quicker build-times and enable a dramatic shift in pace compared with their in-service counterparts, but must achieve the requisite security standards to be operationally effective. AI/ML/DA can equally support the planning process by deriving those routine activities that can be codified and providing automated solutions that serve to increase tempo. This automation can be further refined by utilising visualisation tools to provide situational awareness at pace, increasing the capacity of commanders and staff to make timely decisions and recommendations. Fundamentally the technological solution must be lean, flexible and able to support dispersed and distributed collaborative working. The solution should be interoperable and derived from configurable open-standard architecture. When considering agility, mobility and tempo certain in-service solutions limit the ability of enablers to rapidly respond to changing operational requirements, a key example is cabling. HQ ARRC highlighted the constraints of cabled solutions, noting the inflexibility and time required for their installation. These considerations have identified a range of opportunities that HQ ARRC continue to test and refine whilst concurrently raising the familiarity of the staff, normalising the exploitation of emergent technologies.

CONCLUSION

The requirements for Agile C2 are apparent and 'C2 as a capability' is a critical approach. The evolving threat combined with technological advancements set the conditions for change. The nature of C2 is enduring and will contribute to Multi-Domain Operation success for the foreseeable future, evolution will only be successful if we can identify the relevant characteristics of the next epoch.

Within the dynamic character of Agile C2, opportunities must be taken to ensure continuous improvement across all facets of capability. Maintaining a truly agile C2 capability *provides the ability to respond quickly and appropriately to change*.¹⁶ HQ ARRC will continue to identify and experiment with emergent technologies supported by staff training and process refinement. This serves to maintain currency, normalise behaviours and support collective and individual readiness for future operations across the spectrum of conflict. Further developments are likely to stem from the implementation of the *Army Land Operating Concept and the Command and Control Sub-Concept*.¹⁷

¹⁴ Land Command and Control Steering Group (LC2CSG), *Draft Land C2 Blueprint*, 2019.

¹⁵ Abramson, M and Harris, R. III, *The Procurement Revolution*, (Rowan and Littlefield, 2003).

¹⁶ Joint Doctrine Publication (JDP) 6, *Communications and Information Systems Support to Joint Operations*, 2008.

¹⁷ Army (Land) *Operating Concept, Command and Control Sub-Concept*, 2019.



The Geographical Branch of the Royal Engineers held a multinational NATO Exercise ARRCADÉ GLOBE at Chivenor Barracks in North Devon. The week long exercise had over 150 participants bringing together all the national elements in driving forward geospatial interoperability and capacity building. Photo: Sergeant Jon Bevan RLC, Crown Copyright

In the last few decades the corps role in tactical warfighting operations has rarely been more pronounced and it must determine those priority areas to progress in a resource-constrained world. These areas must consider the survivability of command posts; supported by the approach to C2, organisational agility, adaptable procedural solutions and technical open standards. Developments must be relevant at home and when deployed, acknowledging the uncertainty of constant competition and provide agile, configurable and flexible opportunities to commanders and staff. Only then can Agile C2 serve as a force multiplier delivering a truly battle winning edge.



Ex ARRCAD E FUSION 19 infrastructure. Photo: HQ ARRC



The Utility of Combat Aviation in the 21st Century: Exploiting Aviation Manoeuvre

Brigadier Paul Tedman CBE & Lieutenant Colonel Nick English AAC look at the utility of Combat Aviation in the context of maximising Air Manoeuvre in the 21st Century battlespace and how indispensable it is to the modern British Army.



Apache and Wildcat aircraft refuel at Buckeburg Air Base during Exercise TRACTABLE an exercise designed to demonstrate the Army's ability to rapidly project forces worldwide. October 2019 saw the Army mobilise across Europe by road, rail, sea and air to complete a routine fleet rotation of vehicles deployed as part of Operation CABRIT - the UK's enhanced Forward Presence (eFP) in Estonia as part of NATO. Photo: Sergeant Donald Todd (RLC), Crown Copyright

The character of warfare has changed and continues to evolve at pace - like a helicopter in a storm we are faced with rapidly changing conditions and dramatic challenges. In exploring the utility of aviation on the modern battlefield, we have deliberately set out to challenge some of the norms hanging over from recent campaigns and provoke debate about how the Army exploits its aviation.

In response to a changing character of war and international system, the UK's Integrated Operating Concept¹ defines how the UK Armed Forces will Operate (Protect, Engage, Constrain) and Fight. The direction of travel is clear but how do we achieve persistent competitive advantage with Land forces? The debate thus far largely feels reactive and appears to hinge around mirroring our adversary's behaviour: if they compete in the information domain, so must we; if they exploit deception and obfuscation, so must we. Even the latest thoughts from DCDC on Modern Deterrence are essentially defensive in nature and focus on shaping adversary behaviour to remain below the threshold of open confrontation and dissuading acts that are not in our interest.² If we are to truly compete, we need to do better than simply mirror our adversaries: we need to find a way to actively shape the environment to our advantage. Over the last two years, the Joint Helicopter Command (JHC) has transformed the way it employs Land aviation by exploiting aviation manoeuvre for competitive advantage. This has involved the development of new concepts, experimentation, novel deployments and ultimately the formation of new structures - 1st Aviation Brigade - to exploit Combat Aviation's utility in the 21st Century.

THE FOUNDATION: AVIATION MANOEUVRE IN COMBAT OPERATIONS

*Aviation's contribution to our success, particularly harnessed in the Deep, has been disproportionate and to my mind an ample demonstration of the value of the considerable investment we have already, and continue to make. Terms like 'game changer' and 'battle winner' are over-used, but I think appropriate in this case.*³

Whilst this will not necessarily be true of all Land capabilities, the foundation of an aviation competitive

edge is the ability to conduct wide ranging manoeuvre operations to disrupt and defeat a peer adversary in a conflict. This competitive combat environment is what the US Training and Doctrine Command Mad Scientist initiative termed a hyperactive battlespace. They contend that this future battlespace will be extended in space as effects reach further, compressed in time as technology collapses decision action cycles to mere seconds, more lethal and precise, and integrated across domains. They posit that the proliferation of sensors means that if it moves or emits it will likely be seen or heard and therefore struck. Consequently, advanced engagements will likely be a contest between opposing reconnaissance strike complexes - 'finders' and 'strikers' - with any sensor best shooter becoming a doctrine. To cater for this hyperactive battlespace, we have developed the Attack Reconnaissance Team (ART). Bringing together the Apache Attack Helicopter (AH) and the Wildcat Reconnaissance Helicopter (RH), ARTs represent a Land organic find and strike complex that can engage with precision at range to shape an adversary through his physical or psychological depth.

In the short to medium term, the inherent speed, range and lethality of ARTs offers land forces the ability to out-manoevre a peer enemy. However, the ability to fight is not simply about high tech platforms and weapon systems. It is underpinned by well-rehearsed C2 and logistics that enables the aviation formation to manoeuvre and place itself in positions of relative advantage. Unlocking aviation manoeuvre has driven the development of scalable and agile aviation C2 to transform the way that aviation is exploited across the battlespace. The establishment of the 1st Aviation Brigade gives the Army the mechanism to institutionalise the agility and flexibility required to compete at the Divisional and Corps level. The Army has always had a Combat Aviation formation but has up until now been unable to realise the latent capability due to structural inefficiency and the constant demand on aviation through the Iraq and Afghanistan campaigns. Bringing together C2 at the brigade level allows aviation to fight as an autonomous manoeuvre force for the first time.

Experimentation with 3rd (UK) Division on Specular through the Warfighter exercises and Defence-led Planned Force Testing has repeatedly demonstrated

¹ Defence Integrated Operating Concept 2025, 2020

² Joint Doctrine Note 1/19 Deterrence: The Defence Contribution, 2019

³ GOC 3XX, dated Apr 18 following WFX 18-3.



*Pictured is an Apache helicopter on the island of Saaremaa, Estonia whilst deployed on Baltic Protector.
Photo: PO(Phot) Si Ethell, RAF, Crown Copyright*

the decisive advantage that aviation manoeuvre can bring to a force, especially if employed as an integrated manoeuvre element. These demanding exercises show that an aviation force acting across domains can unlock peer and peer plus competitors defences and open the door to decisive manoeuvre or de-escalation. When integrated with fires and information manoeuvre as part of a Corps or Divisional deep battle, aviation provides the agile edge to exploit the fleeting opportunities required to make a close fight unnecessary or anticlimactic. On the most recent Warfighter with US III Corps, the Combat Aviation Force accounted for more than 50% of the write down of the enemy formations, maintained 85% Combat Effectiveness, and suffered only 5 aircraft lost to adversary air defences.

It would be easy to discard this as imaginary advantage in the world of electrons. Over the last two years, we have moved this exploitation into the physical domain through a series of exercises focussed on building tangible evidence by delivering physical aviation mass, demonstrating logistic sustainability and our ability to operate at operational depth. ARTs have been launched into Eastern France in support of 4ième BAC ⁴, surge operations have

been mounted into the Baltic (TRACTABLE), we have expanded operating environments to include the High North (COLD RESPONSE) and Middle East (KHANJAR OMAN), and we planned to deploy a full Aviation Battlegroup under a US Combat Aviation Brigade on DEFENDER EUROPE 20.

We must continue to horizon scan and adapt if we are to maintain our competitive edge in the warfighting arena - our adversaries will adapt quickly and so must we if we are to get ahead and stay ahead. We cannot afford to pause progress and must continue to experiment with multi-domain aviation manoeuvre and dock more tightly into the evolution of 6th (UK) Division and emerging US multi-domain practice. As the 1st Aviation Brigade approaches FOC, our ability to integrate across domains and find novel ways to use aviation manoeuvre for competitive advantage will only increase.

REIMAGINING MANOEUVRE: COMPETING IN THE 'GREY ZONE' / CONTACT ZONE

We believe that the potential to have a decisive effect in combat operations allows Combat Aviation to shape the operating environment in ways that other land

⁴ La 4e brigade d'aérocombat, l'Armée de terre française.

capabilities potentially cannot; its inherent speed of response, reach and lethality means that if it is deployed to the right place at the right time it can adjust behaviours. Over the last two years, Combat Aviation has been competing across Europe, North Africa and Asia, building partner capacity to employ aviation, establishing a credible forward presence, supporting cross government information effects, and demonstrating the ability to rapidly manoeuvre and flex combat power around a JOA.

The deployments of aviation on Ops NEWCOMBE, SHADER and TORAL represent persistent engagement in key operational theatres with 7 Flight in Brunei providing a forward presence in Asia. The 2018-19 deployments on Op CABRIT and the BALTIC JOA were a highly visible statement of support to key NATO allies in the contested Baltic area; the Strategic Communications (STRATCOM) effect was considerable. Exploiting its inherent flexibility, an Aviation Task Force operated with each of the four NATO eFP battlegroups and with every key partner nation along the Russian border for a three-month period, the only Army force element to do so. Able to seamlessly operate cross domain, the same force package also supported the maritime component BALTIC PROTECTOR series of exercises and activity. Further deployments on exercises like SWIFT RESPONSE

(Croatia), BACCARAT (France) and COLD RESPONSE 20 (Norway) reinforced the global reach and agility of Combat Aviation. The same limited fleet of aircraft seamlessly integrated into all these exercises within a 12-month period to deliver a vast range of effects - find, strike, lift, airborne C2, Command support, STRATCOM, CASEVAC, and Air Assault. This goes beyond simply exercising aircraft: aviation training teams have deployed to the Lebanon to assist with night flying techniques, rear crew and engineer training; Air Safety teams have provided advice to the Belizean Defence Force and assured contract delivered aviation in Kenya; and staff officers are integrated into key appointments with our principal partners and allies.

We see a pattern whereby the continuing development of credible warfighting capability is combined with persistent, semi-persistent and pulse activity in multiple areas of strategic and operational significance designed to adjust adversary behaviour and seize more of the competitive initiative. We have the capability to do this now, we simply need to exploit the inherent agility of aviation to deliver on it. Able to operate across the battlespace and flex effects rapidly in time and space, aviation can present an adversary with multiple dilemmas that they simply couldn't ignore. The compound effect is extraordinary productivity and competitive advantage.



The UK-led NATO battle group deployed on an Estonian-led exercise. Around 700 British troops deployed on Operation CABRIT took part with their main Challenger 2 battle tanks (operated by the newly deployed Kings Royal Hussars) with air support provided by RAF (Typhoons) and Army Air Corps (Apache & Wildcat). Photo: Sergeant Brian Gamble, Crown Copyright

HONING A COMPETITIVE EDGE

We see protect, engage, constrain and fight as complementary and mutually reinforcing. We are not arguing that aviation is a substitute for other land manoeuvre capabilities, rather, that there is a clear pathway to sustained competitive advantage *within* the Land component. The establishment of the 1st Aviation Brigade structurally aligns with our key allies and reinforces Land component aviation as a credible world-class capability. For the first time, this gives aviation the means to exploit the power of all domain operations and move rapidly towards an integrated aviation formation that enables manoeuvre and dispersed mission command. In creating 1st Aviation Brigade, we have deliberately adopted a C2 architecture that allows dynamic integration of aviation, information, CEMA, air and surface-to-surface fires by task forces orchestrated by a formation that is vertically and horizontally integrated across the force. We will place 1st Aviation Brigade at the leading edge of the move from coordinated C2 to integrated and agile operations to create the tempo and agility required to operate on a modern battlefield.⁵ When coupled with the operational flexibility to engage in activity whilst holding readiness and the ability to rapidly reconfigure at Task Force/Battlegroup level, 1st Aviation Brigade gives the Army rapidly deployable and potent options that are politically and military scalable, allow flexible escalation and force packaging, and deliver much greater return on investment (see Figure 1).

Whilst our current relative advantage is based on world class platforms such as Apache and Wildcat, a culture of spiral capability and force development is essential if we

are to get ahead and stay ahead. We must quickly integrate and exploit the investment in Apache AH64-E within a rapid adaptation and evolution cycle. Wildcat RH has come of age and demonstrated a range of multi-role capabilities on Op CABRIT. Self-deploying across Europe to Estonia, it integrated with US/NATO Fast Air conducting live Strike Coordination and Reconnaissance missions, acted as an airborne ISTAR platform to the deployed Armoured Infantry Battlegroup, conducted lift tasks in support of STRATCOM and trained with NATO SOF conducting Fast Roping, airborne sniping, winching and insertion and extraction missions. Taking the first steps towards greater integration, an ISR brigade detachment deployed with the squadron to process, exploit and disseminate RH products.

Whilst avoiding the restless rush to the white heat of technology that doesn't quite exist yet, Advanced Teaming offers the potential to improve lethality, survivability and range by complimenting manned platforms with a range of Unmanned System and Air Launched Effects. We must exploit the latent ESM capability of our aircraft and better integrate digital communication systems, physical manoeuvre and CEMA to deliver a basket of capabilities to penetrate and disintegrate A2AD and decision networks. The US Army agrees with our assessment that in the short to mid-term, combat aviation is one of the few organic Land capabilities that has the speed, reach, survivability and lethality to find, track and kill the enemy through his depth.⁶ They judge that for the foreseeable future, aviation is an essential element of their multi-domain capabilities and a force-multiplier against a peer (or peer-enabled) threat.

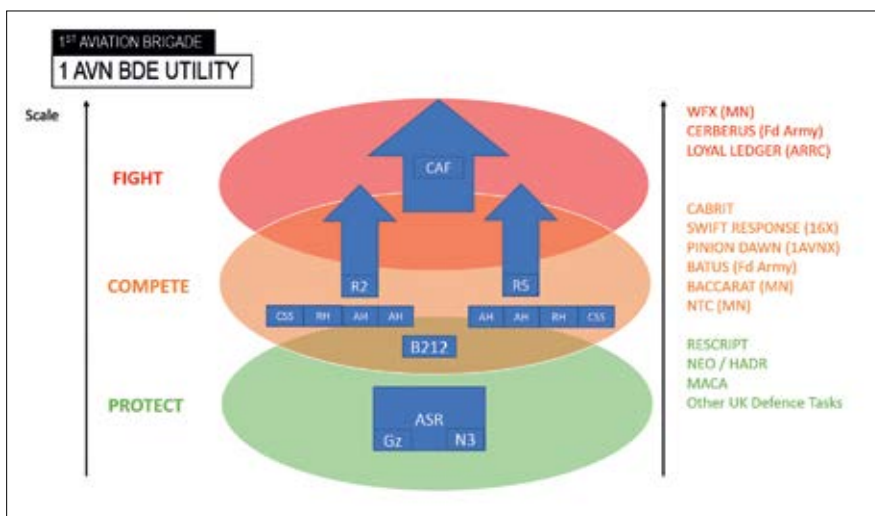


Figure 1 - 1st Aviation Brigade utility across the IOpC framework

⁵ See NATO Command and Control Maturity Model

⁶ US Futures Command presentation to the 2019 Army Aviation Conference, Tidworth, 3 Oct 2019.



Apache and Wildcat aircraft stop off at Buckeburg Air Base to refuel during Operation TRACTABLE a complicated movement of soldiers, vehicles and equipment across Europe. Photo: Sergeant Donald Todd (RLC), Crown Copyright.

CONCLUSIONS

The contemporary operating environment is challenging assumptions we have held about the utility of military forces, especially those that appear optimised solely for fighting. Recent events have taught us that protecting the homeland and enhancing national resilience is simply a must - this demand is unlikely to reduce. Looking further afield, our adversaries have adapted to mitigate our traditional strengths and the Army recognises that it too must evolve to compete. We must drive an adversary's behaviour and decision calculus by continuously seeking and exploiting positions of relative advantage, physically and psychologically. For major combat operations, advanced engagements will require capabilities that can offer reach, speed of action and enhanced lethality: within this hyperactive battlespace Combat Aviation has emerged as a 'battle winning' capability.

When not required for that once in a generation warfight, Combat Aviation can atomise into Task Forces of smaller Units of Action to contribute to sub-threshold effects. Over the last couple of years aviation's deployments on

operations and exercises across strategic focus areas has demonstrated the power of combining aviation-delivered Air Manoeuvre with Ground and Information Manoeuvre. Aviation's ability to quickly flex forces to the right place at the right time, and present credible overmatch capability confers significant manoeuvre advantage and the opportunity to rapidly shape an adversary's decision calculus. Equally, aviation points of presence, be that on operations, PJOBs or enabling aviation training and capacity building, all offer decision-makers choice whilst providing disproportionate influence. This ubiquity has amplified effect from the strategic to the tactical levels.

The formation of 1st Aviation Brigade has accelerated the rate of aviation evolution, much has been achieved recently, but the journey is just beginning. The prize will be an Army that begins to think about aviation like it thinks about infantry. We believe this cultural shift is necessary because, for the near to mid-term, Combat Aviation's utility across the spectrum of activity makes it indispensable to a 21st century British Army.



Image of an Army Apache, AH1D attack helicopter, seen here at RIAT 2019 in Fairford UK. RIAT 2019 was a key International event for the RAF which had a twofold theme - an operational theme supporting the 70th anniversary of NATO and a public theme promoting 'Air and Space: Inspiring the

The STRIKE Brigade: The Army's Battlecruiser for the 21st Century?

Lieutenant Colonel Martin A Smith looks at the concept of STRIKE and asks if it is all it's cracked up to be and how it will be used in a warfighting situation.



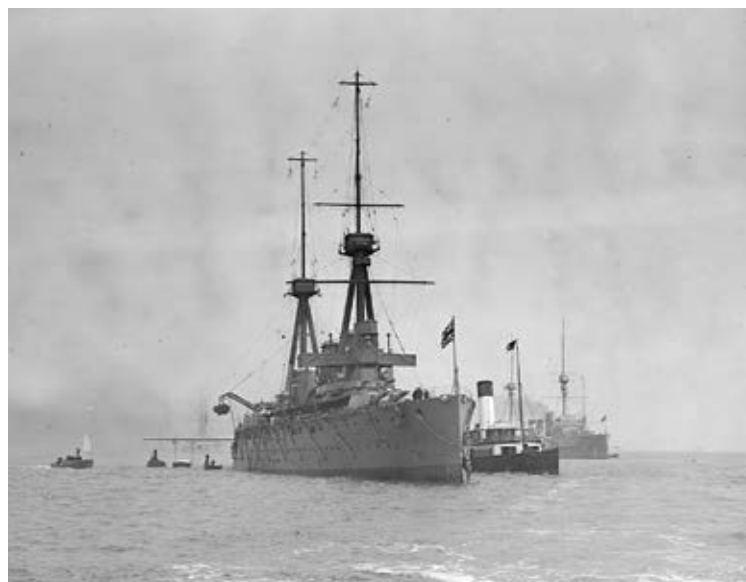
The 2019 Army Combat Power Demonstration (ACPD) took place on Salisbury Plain from 28 - 30 Oct 2019. It was set in and around Copehill Down Village and showcased a variety of the Army's most modern capabilities including the next generation of armoured vehicles, Ajax and Boxer, providing an insight into what the Army's Strike capability will look like. Photo: Jack Eckersley, Crown Copyright

The Army narrative¹ states that ‘STRIKE is a new brigade-level, medium force that offers an evolution in manoeuvre in the Land Environment...Speed and strength, sooner, are key to STRIKE’s success.’ In this it evokes images of the Navy’s development of the battlecruiser in the early 20th century, whereby mobility, speed and firepower would offset its lack of protection. And, just like the battlecruiser, the author contends that STRIKE will end up being used for tasks that expose its inherent weaknesses - potentially with disastrous consequences.

The Army has wanted a ‘medium weight force’ for a very long time. STRIKE, due to achieve its Initial Operating Capability (IOC) in 2025, will comprise armoured cavalry and medium armour regiments equipped with Ajax, and mechanised infantry battalions equipped with Boxer (formerly called the Mechanised Infantry Vehicle (MIV)). But the requirement dates back through the Future Rapid Effect System (FRES) to at least 1998 when the Strategic Defence Review² (SDR98) stated the intention to ‘develop a new reconnaissance vehicle in the TRACER/Future Scout and Cavalry System programme and...a Multi-Role Armoured Vehicle (MRAV)’. At the heart of the medium weight concept is the disarmingly simple idea that less combat power deployed sooner is the key to intervention operations.³ Such a force needed to be more deployable than armoured forces but offer more protection and firepower than light forces.

It is no coincidence that the medium weight concept was formulated for SDR98. One of the formative experiences of Tony Blair and New Labour was the Falklands conflict of 1982⁴ and the subsequent Conservative landslide in the General Election of 1983. Wars could, seemingly, win votes. The end of the Cold War presented new opportunities for intervention, as the

utility of military force was reconsidered and re-framed. The 1990s saw the British Army involved in a rapid succession of intervention operations in the Gulf⁵, the former Yugoslavia⁶ and Sierra Leone.⁷ The doctrine of intervention started to go awry in the 21st century, with the operations in Afghanistan⁸ and, especially, Iraq⁹, proving deeply controversial. Nevertheless, the Army remained wedded to its requirement for the medium weight force; indeed, the argument ran that had we had such a force, we would not have needed to purchase protected mobility platforms¹⁰ as Urgent Operational Requirements (UOR).



Pictured is a starboard view of the battlecruiser HMS Invincible anchored in Line A at Spithead with the armoured cruiser HMS Minotaur off her port bow for the King’s Review of the Fleet, (1907). Off Invincible’s port broadside is the Duchess of Fife, a passenger paddle steamer (1899). Wikimedia, public domain

1 STRIKE narrative v1.1 dated 23 Apr 18.

2 file:///H:/Downloads/RP98-91.pdf

3 Speed and strength, sooner, are key to STRIKE’s success’. STRIKE narrative, Annex A, Single Version of the Truth, 23 Apr 18. There is also the possibility that early and rapid deployment could change the adversary’s risk calculus and thereby prevent conflict.

4 Operation CORPORATE, 1982.

5 Op GRANBY, 1991.

6 Op GRAPPLE, 1992-95 (United Nations Protection Force); 1995-96 (Implementation Force); SFOR

7 Op PALLISER, 2000.

8 Op HERRICK, 2001-2014.

9 Op TELIC, 2003-11.

10 Such as Mastiff, Ridgback and Wolfhound.



Pictured is a soldier taking part in the 2019 Army Combat Power Demonstration (ACPD) at Copehill Down Village in October 2019. The demonstration showcased the Army's most modern capabilities including Strike. Photo: Jack Eckersley, DE&S Photographer, Crown Copyright

A similar debate was taking place in the Admiralty at the beginning of the 20th century, this time driven not by policy, but technology. In the 1890s new Krupp steel armour had enabled the development of fast, armoured cruisers, and Britain's main rivals at the time - France and Russia - were taking advantage of this to threaten the British Empire's worldwide trade. Whilst this threat would ultimately be resolved politically¹¹, the requirement to protect commerce remained. Meanwhile, other new technology - particularly the torpedo - was creating angst in naval circles. In 1904, Admiral John 'Jacky' Fisher became First Sea Lord and an early exponent of faster, more lightly armoured battleships. The Royal Navy's shift towards new 'all-big-gun' designs was vindicated conclusively by the Battle of Tsushima in 1905¹²; the following year the revolutionary battleship *HMS Dreadnought* entered service. Less well known is that the same naval programme approved three Invincible class armoured cruisers; these had a similar displacement and 12-inch guns to *Dreadnought*, but sacrificed roughly

half the armour in order to achieve - and sustain - an impressive 25 knots. This was not without controversy. The role of these new 'battle cruisers' was:

- **Heavy reconnaissance.** *The Invincibles could sweep away the enemy cruiser screen in order to observe an enemy battle fleet.*
- **Pursuit.** *If an enemy fleet ran, then the Invincibles would use their speed to pursue.*
- **Commerce protection.** *Hunt down enemy cruisers and commerce raiders.*
- **Close support for the battle fleet.** *They could stop enemy cruisers harassing the battleships, and operate as the fast wing of the battlefleet to outmanoeuvre the enemy.*

It is this last role that would prove their undoing.

Just as the battlecruisers still remained true - in part - to their original role of commerce protection, so too has

¹¹ Through the creation of the Triple Entente in 1907.

¹² The Battle of Tsushima saw the destruction of the Russian fleet by the Imperial Japanese Navy.

STRIKE, the strategic message for which states '*STRIKE offers greater opportunity and choice to policy makers*'.¹³ Unlike battlecruisers, however, it is less certain whether STRIKE can realize those benefits. The last Chief of the General Staff, General Sir Nick Carter, was clearly impressed by French operations in Mali¹⁴, which no doubt helped shape his thinking on STRIKE. However, even viewed through the prism of a sub-Saharan operation, the ability to *march independently at reach over substantial distances*¹⁵ represents significant projection and sustainment challenges. More fundamentally, it is questionable whether rapid deployment of a STRIKE brigade could have prevented the rise of, say, Boko Haram, or resolve the deep political, economic and social factors that led to it. To question the STRIKE orthodoxy remains heresy in some quarters; however, the real litmus test for STRIKE is not wars of choice in sub-Saharan Africa, but those of national survival against a peer(+) enemy ie *warfighting*.

The Triple Entente of 1907 finally removed the French and Russian threat to the British Empire's commerce. However, a new threat had arisen: Germany. The main effort of the Royal Navy now switched to the rivalry with the Imperial German Navy, and any impending clash with its High Seas Fleet. Despite its name, the latter was never designed - nor able - to carry the war around the globe; rather it was designed to defeat the British Grand Fleet somewhere in the North Sea. During the naval arms race that ensued, both sides continued to build battlecruisers; however, whereas the British held to their doctrine of speed and firepower, the Germans progressively improved the armour and staying power of their ships. This would prove telling. Today the main military threat to the UK is no longer Germany, but a resurgent Russia; the aggressive, expansionist policies not those of Wilhelm II but Vladimir Putin. And the stakes in the nuclear era are greater than ever.

In this context the Strategic Defence and Security Review 2015 (SDSR 15) states that as part of Joint Force 2025, the Army is to generate a warfighting division drawn from two armoured infantry brigades and two STRIKE brigades.¹⁶ Whether GOC 3rd (UK) Division would have preferred a third armoured infantry brigade instead of a STRIKE brigade is debateable; but the fact remains that a STRIKE brigade will be deployed in the event of Nato

Article IV/V being invoked. This reduction in combat power represents a significant capability gap: a gap since filled with rhetoric. The supposed features of STRIKE range from the universal (Mission Command, improved ISTAR) through wishful thinking (lower logistic footprint, pre-empting Anti-Access and Area-Denial capabilities) to, frankly, spin (one extra dismount per vehicle does not constitute 'infantry mass'). These lines-to-take are entirely understandable given the fierce inter-service competition for increasingly limited government finances; however, the risk is that they are accepted, unchallenged, at face value. Of particular concern is the assumption that 'STRIKE covering force operations will dominate a larger battlespace'¹⁷, given that our doctrine¹⁸ states that a covering force 'must be an all-arms grouping *capable of becoming decisively engaged*' (italics added). Re-writing doctrine to suit STRIKE does not remove the requirement. This is something that Napoleon's marshals would have instinctively understood: deploying their *corps d'armee* as covering forces without, say, cavalry, would have been unthinkable. If STRIKE is to act as a covering force then it needs armour. Calling AJAX armour - albeit '*medium armour*' - does not make it so.

For the Royal Navy, their proof of concept would come in the first great clash of the dreadnought era: the Battle of Jutland. The Grand Fleet was commanded by Admiral Sir John Jellicoe - the only man on either side, as Churchill famously wrote, who could lose the war in an afternoon. On 30 May 2016 signal intercepts informed him that a major fleet operation was likely, and he duly sailed the Grand Fleet to rendezvous with the battlecruisers under Vice-Admiral Sir David Beatty. The following afternoon Beatty, speeding ahead of his supporting battleships, was lured into the path of the High Seas Fleet and severely mauled. On being informed that the *Princess Royal* had blown up, Beatty turned to his flag captain, saying 'Chatfield, there seems to be something wrong with our bloody ships today.' Indeed there was. Three British battlecruisers - out of nine - were lost: *HMS Indefatigable*, *Queen Mary* and *Princess Royal* all blew up. Not a single battleship was lost.

Whilst the battlecruisers lacked protection, at least they had speed and firepower. STRIKE only has speed. The new 40mm cannon represents a significant

13 *STRIKE Narrative v1.1 Annex A Single Version of Truth, dated 23 Apr 2018.*

14 *Chatham House, The Future of the British Army: How the Army Must Change to Serve Britain in a Volatile World, 17 Feb 15, transcript, page 3.*

15 *STRIKE narrative dated 23 Apr 18, page 1.*

16 *National Security Strategy and Strategic Defence and Security Review 2015, chapter 4, page 28.*

17 *STRIKE Narrative dated 23 Apr 18, page 2.*

18 *Army Field Manual, Warfighting Tactics – Part 2 Corps and Divisional Tactics, para 6-18c.*



Pictured is the new AJAX Scout vehicle undergoing In-Country cold weather system trialling at Tame Ranges in Sweden, between Feb-Mar 2019. Ajax is being delivered by DE&S through the biggest single order of armoured vehicles in a generation. Photo: Jack Eckersley, DE&S Photographer, Crown Copyright

increase in lethality over the 30mm Rarden; but it is still incapable of penetrating a main battle tank. Of course, experimentation under the auspices of the STRIKE Experimentation Group (SEG) may yet reveal novel ways to deliver on its promise; and yet glaring capability gaps - most obviously its lack of anti-armour capability - exist now. To be fair, STRIKE has yet to enter service, and there is time to mitigate these risks.

The last battlecruiser built for the Royal Navy was commissioned in 1920: *HMS Hood*. The pride of the fleet, 'The Mighty Hood' spent the inter-war years involved in several 'showing the flag' exercises: what today we would call 'defence engagement'.¹⁹ By the outbreak of World War II she was overdue a major overhaul, and a planned modernisation programme had to be cancelled. Ordered to intercept the German battleship *Bismarck*, on 24 May 1941 *Hood* was struck by several German shells, exploded and sank within three minutes, with the loss of all but three of her crew.

¹⁹ *Army Doctrine Publication, Land Operations para 2-15.*

The moral of this tale is not that there is no role for STRIKE: there clearly is. It does offer choice to policy makers, particularly in an early crisis intervention operation such as might evolve in sub-Saharan Africa. But this choice comes at a cost: namely, the Army's ability to conduct warfighting. Whilst individual platforms are impressive - particularly the hugely capable AJAX reconnaissance vehicle - as its own narrative states, STRIKE is not designed to fight directly and alone against a heavy armour force.²⁰ But neither was the battlecruiser. The lesson of history is surely that in desperate times - such as an Article V response - or in the hands of a desperately ambitious commander - such as Beatty, STRIKE is very likely to be used in just such a way. We therefore have a duty to challenge the rhetoric and acknowledge the inherent weaknesses of STRIKE as well as its possibilities. The strategic message of 'transformational capability' may not survive contact with the enemy. Remember the *Hood*.



Partial restoration (spots removed, but no levels adjustment) of a 1924 photo by Allan C. Green of HMS Hood (pennant number 51), the last battlecruiser built for the Royal Navy. Photo: Allan C. Green, photo taken 17 March 1924, restoration by Adam Cuerden, State Library of Victoria, Wikimedia, Public Domain

²⁰ STRIKE Narrative dated 23 Apr 18, page 2.

Be Different To Be Better

Military analyst and historian, **William F Owen**, Editor of *Infinity Journal*, provides his thoughts on a possible future British Army based around the Strike Brigade.



The full force of British Army firepower was demonstrated at The Army Combined Power Demonstration to show how the Army operates in an era of constant competition. It focused on demonstrating: Information Manoeuvre & Unconventional Warfare, War-fighting, Prototype Warfare, Enablement and an Interactive stand. Photo: Corporal Rebecca Brown, Crown Copyright

The UK has a choice to fight like everyone else or fight differently. Warfare is about ideas, not technology. Strike Brigade tactical doctrine has begun to unpack an alternative to the conventional theory, which is more strongly evidence-based than most are aware. Using that as an assumption, the vision this article presents is the basis for a radical alternative. It is deliberately provocative and possibly overstated. It is also an unproven model albeit one, like the Strike Brigade, with considerable supporting evidence. The model is built on the following ideas.

- *The Field Army needs to prioritize rapid deployment and lethality above all else.*
- *The major constraint is cost, in terms of manpower, equipment and training.*
- *The traditional tactical and operational doctrine requires substantial evolution to employ alternative cost-effective force structures, and fight in a way that seeks to dislocate conventional enemy strength.*

Much ink could be spilt on the need for Britain to re-think its place in the world and have armed forces aligned with its foreign policy. Stating that the UK seeks to enforce and support the international rules-based system is laudable, but lacks detail to inform force development. Besides, policy can change far more rapidly than armies can develop. Likewise, the conjecture that the size and shape of land force is a balance between threat and capability is not helpful or necessarily true. Neither provides any real direction because both are products of policy and new governments of any ilk may be unable to provide such guidance.

However, one area any governments will have a firm opinion on is budget. When you ask for money you will get a firm answer; the challenge is making the best use of the resources received. As an arbitrary benchmark let us assume a defence budget of 2% of GDP, but for what follows the actual amount that 2% equates to is irrelevant.

THE MODEL OF LAND FORCES

Overwhelmingly, Western land forces are built on surprisingly similar models, as are land forces in general. This convergence is little discussed and not often debated, bar the tired old mantra that ‘the tank is dead,’ an assertion which clearly it is not and never has been

true. If the saying were altered to be ‘the tank is very expensive, heavy and complicated,’ then this may be something more insightful to state. Regardless the model of Main Battle Tank (MBT), Infantry Fighting Vehicle (IFV), and Self-propelled Gun (SPG), they are remarkably prevalent, and no more so than in both the US and Russian armies, both of which have considerable Cold-War legacy characteristics. Notably, the efficacy of this model is rarely questioned, and maybe with good reason. Alternatives and variations do exist, but they are minor in comparison. It could also be observed that the Cold-War model is continuing to evolve, but it must be asked, does this model present the best basis for the UK? Does this model make the best use of 2%? Would money be better spent creating a better force?

IDEAS BEFORE CAPABILITY

It sounds very clever and disruptive to say the answer lies in ideas, not capability, but most, including myself, are challenged to talk about land power without referencing specific equipment capabilities. When you boil down most of the big ideas in land warfare, they are equipment agnostic. They are generally predicated upon a series of effects and/or principles. The point is however, that unless you have a coherent and testable concept of operation around which to structure a force, then the achievement of effect or application of principles is suspect. Military theory and the internet are replete with ‘train set’ force structures with no demonstrative method of operation. Retired Army officers, in particular, tend to advocate for unit organisations and doctrine they are familiar with by merely giving those organisations better equipment. Civilians, often with no military background, tend to follow the same received wisdom. For all the sophistry and conjecture, what is required are methods by which force structures can fight and operate. To an extent this is chicken and egg, but ideas as to how to effectively employ a square Brigade of 2 x MBT Regiments and 2 x IFV Battalions, or even 1+2, will probably not substantially differ across most western armies because most western armies would give this formation the same type of missions and tasks based on the same performance assumptions. For example, doctrine suggests a defensive frontage of about 15km¹ for a Brigade. Based on published Russian Doctrine, a Motor Rifle Brigade comprising 4 Battalions has an identical expectation.² Subjected to sufficient thought, this is hardly surprising.

1 Land Warfare School Aide Memoir Edition 9, 09, p 67

2 Grau, Lester, *The Russian Way of War*, p 89



The 2019 Army Combat Power Demonstration (ACPD) showcased a variety of the Army's most modern capabilities such as Innovation and technology with drones, cyber, artificial intelligence all on show, and Army subject matter experts on hand to explain how these capabilities contribute to the Army's world-class status. Photo: Jack Eckersley, Crown Copyright

Conventional wisdom and stereotypes exist for a reason. It seems sensible to ask therefore, is there an alternative? Technological convergence is almost certainly an outcome of doctrinal convergence. Can this be changed?

Another factor is the nebulous description of peer, near-peer or peer-plus as concerns enemy forces. This author would contend that given the UK use of UAS, Fires, AH, and similar systems the factors that make an enemy a peer of any sort are his ability to deny/contest the UK the use of air and to constrain the communications spectrum. As recent Turkish Army operations in Syria have indicated to a degree, a fielded force that cannot protect itself against UAS-directed precision fires and/or AH has little possibility of being effective. This one area alone is worth an article in itself, but the ability to employ fires is clearly central to any future development, despite its apparent lack of emphasis in what follows.

THE CONSTRAINED FORCE MODEL

The constrained force model is an alternative method by which you can make conceptual and capability comparisons. There are several variables we could use,

but we will assume that the constraint means a unit limited to <100 vehicles.³ Within that limit, additional constraints and requirements can be demanded, such as the amount of ammunition to be held and/or the number of Fuel Consumption Units (FCU) to achieve a march distance of X-hundred kilometres. Casualty treatment and evacuation criteria can also be added if required, as can equipment support material holdings and replacement and repair times using the MTBF failure data for specific equipment types. This can then be extended across a formation and conclusions drawn.

Research on such models reveals several insights. Firstly, the number of vehicles automatically constrains the amount of manpower, thus cost. Secondly, the number of heavy tracked vehicles in a unit or formation has the greatest overall impact on the overall force structure above that of the unit. That impact drives up associated costs, both in terms of procurement, operations, manpower and training. The model shows similar cost inflation and increased logistic demand with some capability adjustments, such as giving each vehicle in a rifle platoon an Anti-Tank Guided Missile (ATGM). Conversely, giving

³ *Manpower is actually a poor limitation because it builds structures extremely sensitive to casualties on one hand and overly staffed on the other.*

each vehicle a mast-mounted thermal imager has almost no impact bar cost of integration and training.

The mast-mounted sight example is particularly relevant. Probably one of the most useful things such models can demonstrate is that decisions or choices which have a real impact in terms of capability, have far less impact on force structure, bar cost. An enhanced armour pack may have real capability implications. However, unless the data indicates a maintenance, or improvement in terms of failure rate, or noticeable reduction in the amount of ES material to be held at the unit level, then the better armour pack has little impact. Nonetheless, an active protection system, which may increase a logistic demand by one or two more pallets of effectors/disruptors at the unit level, might make a considerable impact on overall levels of protection, and even the probabilities of mission success and failure. In general terms, while weapons always have a noticeable logistic cost. applique/modular armour, communications systems and sensors have almost none, bar power generation debt, which does ultimately come to consume fuel, but given the sensible use of APUs, the implications seem negligible.

Of course, any force structure, constrained or not is pointless unless informed by a conceptual framework within which it is employed. In fact, little is to be gained from any such modelling unless the output can be

reasonably applied in some form of testing, which will usually be some form of simulation or wargaming since troop trials of entire formations or even units are cost prohibitive. To avoid an extended discussion on the merits of wargaming and simulation when it comes to capability, the insight that the constrained force model provides is strongly associated with how commanders develop courses of action and make decisions based on their awareness and understanding of the capabilities of the force being tested. Thus, if a particular force structure provides more options than another, versus a competing force structure, then this is where the insights will be gained. These insights are best gained by experienced formation commanders because they and their staffs are best equipped to understand what information drove what decisions. It may seem arrogant to assert, but successful inquiry about force structure and tactical doctrine, using wargames is far more about human decision-making than combat resolution modelling.

In very simple terms, what becomes apparent is that while 'Light', 'Medium' and 'Heavy' forces fight very differently, the popular differentiation is assumed to be the notional weight of the force. What the constrained model seems to indicate it that it is far more a descriptor of cost and complexity. Furthermore, the cost has to be measured against the effect. Those factors drive how the force operates.



C Company, 3rd Battalion The Parachute Regiment focus on their core infantry skills of fire and manoeuvre during Exercise YELLOW ASSAULT. The training refreshes and reinforces their ability to work together to assault objectives. Photo: Corporal Jamie Hart, Crown Copyright

Cost is the overarching constraint, which is why those aspects of a constrained force model which would seem strongly cost-related are actually useful indicators. As an example, an unconstrained force structure of an MBT Regiments would equate to about 140-150 vehicles. Given broadly similar vehicle types, reducing that to under 100 vehicles would produce a less expensive regiment. Received wisdom would suggest it would also be 'less effective.' However, this does not account for how such a Regiment might fight differently, or its integration within a wider force structure. The insights thus flow from judgement as to how much less effective versus how much less expensive. Clearly 'voodoo economics' and special pleading would corrupt any discussion, but the basis for an objective discussion is none the less possible assuming smart men and women are present.

INFANTRY IS THE ULTIMATE PRECISION WEAPON

Correctly trained and equipped, a good infantry battalion can defeat, deter or attack an armoured brigade on one day and enter a village on the next to locate, kill or detain specifically named individuals with least risk to the civilian population. Such a scenario is certainly challenging and might even be deemed impossible by some and is used here merely for illustration, but few would contest that infantry, as in specifically trained dismounted forces, which may well include other cap-badges, are the core capability of modern armed forces.

Cap badge rivalry has often skewed the arguments about infantry development, as has the perceived need to preserve regiments. That is a just a sad fact of life, but the effectiveness of infantry increases exponentially the better other arms can support it. An infantry callsign with radio has potential access to almost unlimited support. In the last three decades, technology has given the infantry far greater levels of effectiveness than any other arm. This isn't just the idea that correctly resourced with better equipment and training infantry effectiveness could be substantially increased, but far more the observation that if you enable the infantry to work in such ways a lot of the perceived problems of the modern battlefield look very different. As previously alluded to, using a constrained force model, an infantry unit could well deploy 36-45 Anti-Tank Guided Missile (ATGM) posts. The weapon isn't specified, but it could cover everything from a 5,000m fire and forget weapon to a 10,000m man-in-the-loop, non-line of sight weapon. Give the same callsigns a light, low signature, easily concealable vehicle, and correctly supported and trained that unit has real anti-armour potential.⁴

Of course, this suggestion can be seen as heresy by the Light Cavalry (Lt-Cav) community, but it may well be that an enhanced or alternative approach to Lt-Cav holds real insights as to the potential for future infantry. Would cap-badge issues overrule real progress? If it does, what



Ajax is the British Army's new multi-role, fully-digitised armoured fighting vehicle delivering a step-change in versatility and agility seen here undergoing trials at the Tame Ranges in Sweden in 2019. The in-country trial demonstrated how the vehicle handled difficult environments as well as its mobility aspects, ISTAR and firing capabilities. Photo: Jack Eckersley, Crown Copyright

⁴ See 'Lighting Over Water' – Rand Dec: 1999

does that tell us? The convergence of Light Cavalry, Mounted Infantry, and all that which it implies has been a persistent theme since the Boer War, but cap badges have trampled both progress and insight.

Cap badges are not the only blockers to sound development. There are real institutional self-image issues that need to be overcome if we suggest that the infantry could develop from a decisive close combat organisation to a reconnaissance arm which leverages massed or precision fires to destroy the enemy at stand-off distances. This does not remove the need for the classical dismounted assault, but it should move it from being decisive to confirmatory under ideal conditions. Nothing about this alters the infantry's utility in peacekeeping and/or so-called counterinsurgency.

This is about a different way of fighting and is equally true for the so called 'Medium' force. This new way seeks to make close combat mostly - but not always - discretionary, and also anti-climactic. Fighting in this manner is imperative because preserving the force to enable sustained operations is really the only viable course of action short of the existential conflict.

To this end, both highly massed and long-range precision Fires are a non-discretionary element making infantry, and indeed any form of ground manoeuvre, effective.⁵

REALLY RAPID DEPLOYMENT

Where these observations begin to come together is not just in terms of fighting but getting into the fight in the first place. Then, once engaged, staying mobile. The discussion comes in several distinct parts.

Does the first question thus lie in asking why anyone would settle for a unit in a Field Army that could not be out of the gate in 4 hours or 24 hours? If not R0, then R2 would seem easy enough. High readiness is low-hanging fruit for motivated people. It can be tested, inspected and improved. Readiness in all its aspect reflects leadership, but like beauty, is a cruel mistress. If a force cannot deploy rapidly, then it is of little actual political utility.

The next issue is the physical deployment, and this is where traditional force structures and types have lagged behind more deployable alternatives. Currently, we think of how to deploy a Warrior battalion. Very obviously a constrained force structure is easier to deploy and can be

configured around the deployment requirement. We can basically consider deployment in three basic categories of drive, fly or sail. This could spawn a lengthy and complex discussion so it will be limited to just three fairly simple conjectures as examples.

Firstly, at 800km march per day allowing for rest, repair and administration, three days march puts the force up to 2,400km away from Tidworth or Catterick across the European road network. Basic road measurements show Vilnius is 2,218km and Kiev is 2,535km. A forced march using rotating drivers and accepting higher risk might achieve the same in 24 hours or less. For really extreme examples, at 800km per day puts you in Baku in Azerbaijan or Aleppo in Syria in 6 days. Clearly the practical issues of fuel, diplomatic clearances, carriage of ammunition, rest areas and much more impact on those times, but the physics is there.

Secondly, if you can fit a vehicle inside a CH-47 Chinook, then dependant on the overall length you can fit 14-16 into a wide-bodied cargo airliner such as a Boeing-777. There is no shortage of such designs, including Jackal, Land Rovers, modified Land Cruisers and those designed for the US Army Ground Mobility Vehicle program. A constrained unit would deploy in about ten sorties. Clearly, it would be possible to use C-17 or A400M, but then Challenger 2 can be lifted by C-17.

Such a constrained force model, using these vehicles and the weapons mounted on them, could probably be sustained by the 100-tonnes of stores that one Boeing-777 could deliver as and when required. In fact, assuming one such delivery every 8 hours, quite a large force structure can be sustained on 300-tonnes per 24 hours.

Thirdly, a current UK Point-Class ferry could lift 130 armoured vehicles and 60 trucks to Singapore in 19-20 days. 10-12 such ships could lift the 2,000 vehicles which could make up a Constrained Force Division.⁶ If this is desirable, how affordable would such a capability be? What if the cost of an ocean-going Ro Ferry capable of carrying 200+ military vehicles might roughly equate in procurement cost of one fifth-generation fighter, such as an F-35? The question is not answered here, but there are reasonably valid indications that a Ro-Ro ferry, similar to the UK MODs Point-Class, could be procured for \$90-120million?⁷

⁵ This is a fairly complex debate really requiring an article unto itself.

⁶ DSTL wargame the viability of a 2,000 Vehicle Division in late 2015. Indications were it was viable

⁷ In 2015, the National Shipping Company of Saudi Arabia (Bahri) took delivery of six vessels with 24,000m² of vehicle deck space. Each was reportedly £49million. - <https://www.thinkdefence.co.uk/a-ship-that-still-isnt-a-frigate/multilift/>

CONCLUSIONS

To recap, what has been shown here is that alternatives exist to the current force structure ideas and that an alternative approach based on both cost and constraint is not only viable but may also be desirable. At its most basic this whole approach merely asks if the cost-effective answer to the Motor Rifle Brigade is the Armoured Infantry Brigade?

All this article has done has provided the spanners, cudgels and crowbars to unpack that question with very little discussion as to actual equipment or specific tactical doctrine. That said, the methods for dislocating (as opposed to confronting) the Motor Rifle Brigade or Russian Tank Division are already becoming apparent with the Strike Brigade. Those same means and methods



Soldiers from the Enhanced Forward Presence Battlegroup conducted live fire ranges to give troops from both France and the UK a chance to watch each other's main battle tanks in action, the LeClerc from France and the Challenger 2 from the UK. Photo: Rfn Craig Williams, Crown Copyright

translate into being able to effectively confront almost every armed group on the planet, but it requires a step-change in means and methods.

This article connected the ideas of a constrained force structure, infantry with a new approach and rapid deployment. These were ideas, not equipment or

doctrine. The change could begin with the understanding that the problem is not the kit or the money. The problem is the ideas about how to use the money to fight in a way we can afford.



Human Behaviour: Big Picture Thinking

Captain Neil Verrall, a human domain specialist and Specialist Reserve Officer (SRO) with Specialist Group Military Intelligence (SGMI) seeks to highlight some of the prime movers that will shape, influence and impact human behaviour in the not too distant future, if not already to some degree; and which military thinking, training, research, planning and capability must consider and address for future operations.



British Army personnel assigned to the United Kingdom Training Team Taji, assists Iraqi soldiers from the 9th Division to set up a charge during the Combat Engineer Platoon Course Demolition Day at Taji Military Complex in Iraq. Photo: Specialist Madelyn Sanchez, Released

It could be argued that popular interest in psychology and behavioural science has become mainstream. The beliefs, attitudes, emotions and behaviour of people are now part of regular discourse in many aspects of human life - social, political, economic, work, welfare, health, sport and popular culture. The contemporary 'watershed' moment for this will always be open to debate, but it is suggested here that it entered wider social consciousness with the reality television show Big Brother in 2000, which was the catalyst for an entire genre of television programmes. Books such as *Freakonomics*¹ (published in 2005) stimulated interest in the field of behavioural economics, which in turn spawned a genre of popular readership in psychology with books on topics such as nudge theory,² heuristics and biases,³ irrationality,⁴ consumer psychology,⁵ online persuasion⁶ and even the odd Black Swan.⁷

An improved understanding of human behaviour is increasingly central to policy makers whereby policy is written as *plans for action* that seek to guide future decisions. The level of understanding of human motivation and behaviour has progressively changed from one that viewed humans as rational actors, who employ critical thinking to make decisions based on plain facts and outcomes, to a view that recognises humans as a complex organism that makes decisions whilst being influenced by impulse, emotion, experience and uncertainty on a conscious and sub-conscious level. Which is to say that the human brain is designed for *efficiency* and not for optimisation; therefore, efficiency allows one to operate and make sense of daily events and activities, but it is not perfect, and can often seem irrational and unpredictable, i.e. 'why would someone do that?'

FIGHTING POWER AND THE VAGARIES OF HUMAN NATURE

Within a military context the concept of 'know thy enemy' has been a key requirement for military success; often stated by respected military generals and leaders throughout history; for example, the warrior-scholar GFR

Henderson⁸ refers to Hannibal's biographer who quotes Hannibal as saying that:

It is to be ignorant and blind in the science of commanding armies, to think that a general has anything more important to do than to apply himself to learning the inclinations and character of his adversary.

This insight is part of what UK Defence Doctrine (JDP0-01⁹) refers to as the human component of fighting power, which asserts that:

Fighting power may be enhanced by applying scientific expertise relating to the social, psychological and behavioural aspects of human behaviour. Understanding group dynamics and people's motivations supports assessments of likely behaviour in complex situations (p.26)... when assessing the situation our commanders must understand the context in which they are applying fighting power (p.27).

In order to support fighting power JDP0-01 identifies several areas that require socio-cultural and socio-technical understanding in order to address ... *the vagaries of human nature...*(p.27) that shape the likelihood of success on operations:

- *The character of the situation.*
- *The environment.*
- *The opponent.*
- *Allies, partners and other agencies.*
- *Culture and history.*

All that said, lessons from history have consistently shown that understanding the enemy and/or local populations has been poor or non-existent at times; the most modern lesson being the 2016 Iraq inquiry (aka *The Chilcot Report*).¹⁰ The contemporary and future requirement not only requires a knowledge of the enemy (RED forces), but also our coalition friendly forces (BLUE), our indigenous partner forces (GREEN) and the indigenous/regional

1 Levitt, S. D., & Dubner, S. J. (2005). *Freakonomics*. London: Penguin Books.

2 Thaler, R. H., & Sunstein, C. R. (2009). *Nudge: Improving decisions about health, wealth and happiness*. London: Penguin Books.

3 Kahneman, D. (2011). *Thinking, Fast and Slow*. London: Penguin Books.

4 Ariely, D. (2009). *Predictably irrational*. London: Harper Collins.

5 Graves, P. (2013). *Consumerology*. London: Nicholas Brearley Publishers.

6 Nahai, N. (2012). *Webs of Influence: The psychology of online persuasion*. Harlow, UK: Pearson Education Ltd.

7 Taleb, N. N. (2010). *The Black Swan*. London: Penguin Books.

8 Henderson, G. F. R. (1912). *The Science of War: A Collection of Essays and Lectures 1891-1903*. London: Longmans, Green, and Co.

9 MOD, (2014), *JDP0-01 UK Defence Doctrine (5th edition)*, November 2014.

10 Cabinet Office. (2016). *The Report of the Iraq Inquiry*. London: HMSO.



Seen in the background is a member of the British Military Advisory and Training Team, coaching a Spanish counterpart in the use of an SA80 A3 assault rifle at the Besmaya Range Complex in Iraq. The Portuguese, Spanish, and British soldiers traded weapons for this training to build camaraderie between the countries stationed together at Besmaya. Photo: Specialist Eric Cerami, Released.

populations (WHITE), which is broadly accomplished by Target Audience Analysis (TAA), human terrain analysis, social network analysis, information environment analysis, and other related techniques.

It is also worth noting that conceptual military thinking is not dormant in this futures-looking area, and the Developments, Concepts and Doctrine Centre (DCDC) have produced several useful documents that have attempted to understand the future environments in which military force and/or capability will be brought to bear,^{11 12 13} although this current paper attempts to delve deeper into the human and behavioural implications.

POPULATIONS

There are two dominant issues when one considers future global population - growth and movement.

Growth: According to the United Nations World Population Prospects¹⁴ the global population will have grown to over 8.5 billion by 2030. The popular

statistician Hans Rosling predicted that global population growth will plateau at approximately 11 billion. The rationale being that people may be living longer due to better medicine, health and lower child mortality, but they are also having less children; therefore, as successive generations age their numbers will slow due to lower child rates. This is already being evidenced in developed nations through analysis of changes in their population pyramids, demonstrating changes in internal distributions for specific national populations, such as 'youth bulges'; and many of these pyramids are set to change in the coming years/decades as their pre-reproductive (0-14), reproductive (15-44), and post-reproductive (45 and up) categories grow and shrink due to population changes. The implication is that wherever the military find themselves operating in the future it is likely to be a busy place.

Movement: People are moving around more now than in any time in history. This includes voluntary migration as well as forced migration. Migration research has tended

11 DCDC. (2010). *Future Character of Conflict*. Shrivenham: DCDC.

12 DCDC. (2014). *Global Strategic Trends – Out to 2045*. Shrivenham: DCDC.

13 DCDC. (2015). *Future Operating Environment 2035*. Shrivenham: DCDC.

14 United Nations. (2017). *World Population Prospects: The 2017 Revision (21 June 2017)*.

to look at the push and pull factors that influence the decision to migrate, which is often a balance between cost versus benefit, and risk versus reward. It is fair to suggest that push factors tend to be in reaction to events (e.g. social and cultural upheaval, economic depression, persecution, war and conflict or environmental change), whereas pull factors tend to be volitional based on opportunity (paid work, welfare support, more open society or education). Naturally, the decision to migrate is a complex interaction of political, social, environmental and economic factors that has been described as the *complexity of mixed migration motivations*,¹⁵ and research into the psychology of migration suggests motives such as exploration, social mobility and life enhancement, escaping, and financial betterment.¹⁶

The majority of the published peer-reviewed research on immigrants/migrants and immigration/migration relate to the reaction of, and impact upon, the target country and its various communities towards immigrants, as well as immigrant acculturation once they reach their destination. This was evident from the reactions to the migration events in the Mediterranean Sea in 2015, which led the Economic and Social Research Council to fund the Mediterranean Migration Research Programme.¹⁷

Additionally, findings from the National Geographic's Genographic Project suggest that big migratory events in human history have been strongly influenced by shifts in climate. Furthermore, the project predicts that current climate events such as desertification and rising sea levels will force millions (if not hundreds of millions) of 'climate refugees' to move. Not only that but there is a general trend in developing nations to move from rural areas to urban cities. This movement from the rural to urban is also supported by the UN World Population Prospects who predict that over 60% of the world's population will be living in cities (and megacities). However, migration is not a one-way phenomenon and research¹⁸ has identified that factors such as disillusionment, disappointment, and a shifting cultural identity influence peoples' decisions to return to their country of origin (if they can).

Finally, policies, strategies and Tactics, Techniques and Procedures (TTPs) need to make sure that they do not create or facilitate unintended consequences such as smuggling; and one must bear in mind that the conditions and motivations that drive people to migrate (whether voluntary or forced) are powerful, and the beliefs, attitudes and behaviours that are associated with migration need to be carefully considered as they will range from the positive and prosocial (joy, enthusiasm), to the negative and antisocial (fear, anger, desperation, criminal). Therefore, for strategic planning assumptions it would not be unfair to suggest a scenario where the deployed force finds itself in an urban megacity of 15-30 million inhabitants, who are comprised of multiple cultural demographic variables and who are thinking, communicating and behaving in a myriad of ways, not only in the physical space but also in the internet-enabled online and cyber domain. Therefore, it looks as though Krulak's 'Three Block War'¹⁹ concept may need a dust down and wider consideration.

SOCIAL AND POLITICAL LANDSCAPE

Modern Western liberal democracies tend to be socially flatter and less hierarchical than they were historically, resulting in a society that is less reverential of authority. These societies also tend to possess wider access to education, including social and political awareness, as well as being digitally connected via the internet, which provides them with a platform for giving, receiving and sharing opinion and discourse. This emboldens 'the people' with unprecedented empowerment and confidence to engage with, and challenge, perceived authority. In essence, societies become hierarchically flatter and louder. This frightens hard-line leaders, dictators and despots, which is why a clamp down on the internet is evident in countries across the Middle East, Asia and Africa where an open, fair and transparent democratic process is a threat to political leaders. However, as the ability to be online becomes ubiquitous and the ways of receiving it ever more varied, controlling governments will struggle to maintain control without resorting to pressure and violence - this was evident with the Arab Spring in 2010. Typically, governments

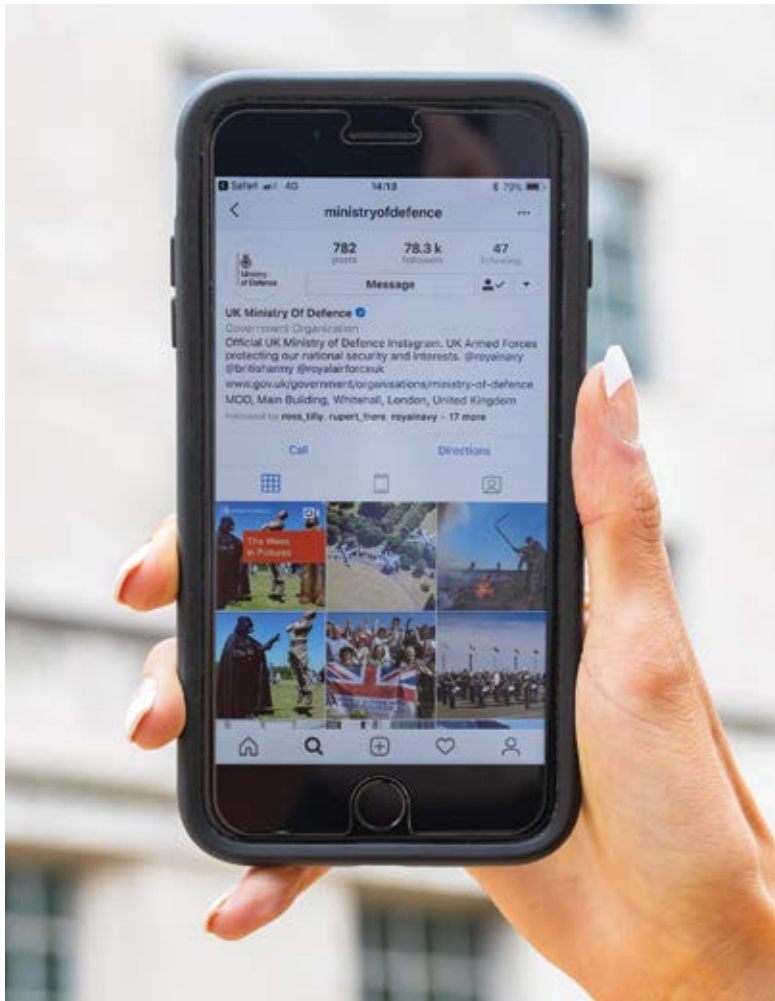
15 Luthra, R., Platt, L., & Salmonska, J. (2014). *Migrant diversity, migration motivations and early integration: the case of Poles in Germany, the Netherlands, London and Dublin - LSE 'Europe in Question' Discussion Paper Series*. London: London School of Economics and Political Science.

16 Udahemuka, M., & Pernice, R. (2010). *Does motivation to migrate matter? Voluntary and forced African migrants and their acculturation preferences in New Zealand*. *Journal of Pacific Rim Psychology*, 4(1), 44-52.

17 MMRP. (2017). *Policy Briefing: Dynamics of migration across the Mediterranean*.

18 Ben Yehuda-Sternfeld, S. & Mirsky, J. (2014). *Return migration of Americans: Personal narratives and psychological perspectives*. *International Journal of Intercultural Relations*, 42, pp.53-64.

19 Krulak, C. (1999). *The Strategic Corporal: Leadership in the "Three Block War"*. *Marines Magazine*, 28(1), 28-34.



A Ministry of Defence employee accesses the Ministry of Defence Instagram homepage using an official issued i-Phone. The MOD encourages and welcomes involvement and support from all its audiences on social media. Photo: Owen Cooban, Crown Copyright

are one step behind technological and societal change, and we are likely to see increasing dissent, particularly in autocratic and/or developing nations, as education, awareness and connectivity become a force multiplier for socio-political change.

Unfortunately, as well as providing people with a platform for giving, receiving and sharing opinion and discourse, the internet has created a climate where people are increasingly unsure of what to believe as truth and fact.²⁰ This has given rise to neologisms such as ‘post-truth’, ‘alternative facts’ and ‘fake news’; therefore, people are struggling to cope with information overload and cognitive uncertainty, which has driven them to rely on individual interpretation of what they feel to be true or wish to be true rather than spend endless cognitive effort trying to establish the objective truth. This *feeling* rather than *knowing* approach is rationalised

as being more authentic than the often-bland opinions of experts, especially if the expert opinion challenges or contradicts one’s pre-existing beliefs. It is felt that this form of post-modern neo-scepticism will play out for many years, especially as the global population grows from seven billion to 11 billion, with one million people a day becoming connected to the internet every day for the foreseeable future.

Regardless if it is a cause or product of a flatter and louder society, one of the issues is a growing mistrust of politicians, ‘elites’, prosaic experts and the traditional media, which has allowed a fragmented and alternative media space to emerge. This, along with being globally connected via the internet, acts as an echo chamber of confirmation bias and group polarisation for people of like-minded socio-political and socio-cultural persuasions (i.e. homogeneity); for example, alternative media

²⁰ Verrall, N.G., & Mason, D.E., (2018), *The taming of the shrewd – how can the military tackle sophistry, fake news and post-truth in the digital age?* *RUSI Journal*, 163(1), 1-9.

platforms such as *Breitbart*, *InfoWars*, *Huffington Post*, *Wikileaks* and the *Drudge Report* to name but a few. This has also given rise to popular anti-establishment conspiracy theory sites, such as *QAnon*, which has gained speed of followership in the USA since late 2017.

INDIVIDUAL IDENTITY

One issue that is taxing politicians and policy makers is understanding what people want politically and socially. We live in an unparalleled time in history where populations in liberal democracies possess unrivalled freedom and choice; however, this has so far not led to Utopia. It appears that the more choice and freedom one has, the more vexed and confused one becomes.

Individual identity has become a topic of great debate. Although 'identity politics' is not a new term, its current use reflects the increasing fractionation of demographic categories within society (e.g. race, gender, sexuality, religion, ethnicity), leading some to ask where this will logically end because as sub-categories continue to grow then policy becomes about increasingly narrow group interests at the expense of broader political movements.²¹ This is a complex issue because various fractionations could appear to be supporting others, competing with others or even contradicting others; for example, personal views on national identity (nationalist and isolationist) may conflict with sexual identity (diverse and inclusive), which may also compete with economic identity (free markets), and conflict with social identity (support state schools and the NHS) - in other words, the 'complex me'. This plays havoc with theories of homogeneity such as 'homophily'²² (whereby people are more likely to associate with those similar to themselves) because the increased fractionation of individual identity means that 'belonging' could be a multitude of concepts and categories that is of personal relevance to the individual, as evidenced by the LGB community who are now the LGBTQIAPP+ community.

A useful theory in social psychology that may help to understand this phenomenon better is Identity Fusion Theory,²³ which seeks to understand and explain the interplay between personal self (individual) and the social self. Previous social psychological theories tended to emphasise the role and impact of the social collective at the

expense of the individual, however, Identity Fusion Theory suggests that the individual is as important to identity as the social, and that both identities can operate together. Furthermore, the theory suggests that the composite strength of both aspects produces stronger bonds with the social group to which one identifies, therefore, seeing others as 'family' as opposed to just 'other group members'. Because of these stronger ties to group members, research has shown that highly fused individuals are more likely to endorse or commit more extreme attitudes or behaviours. This finding has important implications when trying to understand and counter adversarial groups and violent extremist organisations.

Finally, an interesting implication for these social and individual issues is how they will translate for societies that have not had the privilege of decades or centuries of openness and opportunity. According to Freedom House this equates to 25% of the world (49 countries) who are classified as not free, and 35% (69 countries) who are classified as partly free.²⁴ After all, if free and open societies still have to deal with the psychological implications of social and technological change, then how will societies that have been previously closed react when given more freedom or when they take freedom by force? This postulation is important for the military, because these will tend to be the environments the military deploy into because instability and conflict may be the result of change.

TECHNOLOGY

Another neologism often cited in Defence is that of 'disruptive technologies', which broadly means how a new technology leaps ahead and usurps a previous technology. A good example is the android phone, which has 'disrupted' traditional mobile phones, cameras, GPS, laptop PCs, televisions and a host of other technologies, because all of these (and more) are possible on a single android phone. When discussing the human aspects of technological change, it is best to talk of *adaptation* (how technology changes) and *adoption* (how and when people start using it). Adoption is of particular interest because the speed of adoption (how quickly people start using it) and the scale of adoption (how many people use it) tends to predict how behaviour will emerge or change. This is evident from the facts and figures often given in

21 *The Economist*. (2018). Are identity politics dangerous? <https://www.youtube.com/watch?v=Cl-27JjJk-I> accessed 30 August 2018.

22 McPherson, M., Smith-Lovin, L., & Cook, J. M. (2001). Birds of a feather: Homophily in social networks. *Annual Review of Sociology*, 27, 415-444.

23 Swann, W. B., Gómez, Á., Seyle, C. D., Morales, F. J., & Huici, C. (2009). Identity fusion: The interplay of personal and social identities in extreme group behavior. *Journal of Personality and Social Psychology*, 96(5), 995-1011.

24 Freedom House. (2018). Freedom in the World 2018 – Democracy in crisis <https://freedomhouse.org/report/freedom-world/freedom-world-2018> accessed 31 August 2018.

the socionomics videos on YouTube,²⁵ which provides insight into human interaction with the internet and how behaviours have both emerged and changed.

Looking at big picture technology the MOD Science and Technology (S&T) Capability Strategy²⁶ highlights eight multi-use technologies that should inform thinking and investment in science. Three of these are highly related to the issues discussed in this paper - big data, agri-science and robotics and autonomous systems. Additionally, the University of Oxford's Future of Humanity Institute attempts to ask big picture questions and shed light on crucial considerations that might shape humanity's long-term future; many of these are technology oriented.

A large interconnected area worth dipping into involves the interplay between ubiquitous connectivity, the internet of things (IoT), and behavioural analytics. All three of these possess both opportunities and challenges for supporting the human component of fighting power. Among a steadily growing global population it is estimated that one million people a day (every day)

connect to the internet for the first time, mainly in developing countries, and via mobile phones.²⁷ One would think that digital companies would be content with this, but they are constantly addressing the question of how to 'connect the last billion'. On top of this is the IoT, which interconnects internet-enabled computing devices embedded in everyday objects (e.g. vehicles, fridges, cookers, heating), mobile phones and local/national systems (e.g. street lighting), thereby enabling them to send and receive data for subsequent analysis. Lastly, and thanks to the *Chilcot Report* and the *Butler Review*,²⁸ assumptions are out and improved analytics are in.

The need to improve our information and intelligence analyses also means extending this to our understanding and analyses of human behaviour; that needs to be in context and up-to-date. This is necessary to achieving military objectives, be they kinetic or non-kinetic, as they will be involved in the full-spectrum targeting process to estimate the probability of success as well as consideration of unintended consequences.



Over 50 robotic, autonomous and supporting systems made it through the selection process to be exercised on Autonomous Warrior that ran from 12 November to 12 December 2018 on Salisbury Plain Training Area (SPTA). Unmanned Aerial Vehicles and Unmanned Ground Vehicles were trialled to measure how they could support surveillance, resupply, command and mobility. Photo Corporal Rebecca Brown, Crown Copyright

25 Socionomics 2018 <https://www.youtube.com/watch?v=2IcpwISszbQ> accessed 31 August 2018.

26 MOD. (2017). MOD Science and Technology Strategy (December 2017).

27 Kemp, S. (2018). Digital in 2018: World's internet users pass the 4 billion mark. <https://wearesocial.com/uk/blog/2018/01/global-digital-report-2018> accessed 30 August 2018.

28 Privy Council, (2014), *Review of Intelligence on Weapons of Mass Destruction*, London: The Stationary Office.



Pictured are soldiers from C Company, 3rd Battalion The Parachute Regiment on Exercise Yellow Assault a live fire battle camp on the wintry and windswept STANTA training area in Norfolk where they focussed on their core infantry skills of fire and manoeuvre. The training refreshes and reinforces their ability to work together to assault objectives, starting from individual movement on a firing range to attacks as an eight-man section, then bringing sections together to attack as a platoon. Photo Corporal Jamie Hart, Crown Copyright

These three issues possess a double-edged sword for the human component of fighting power. On one edge the ability to access this data greatly improves our ability to find, understand, collect, monitor, assess and evaluate adversaries and target audiences; and by being able to do this we out-think, out-decide and out-act our opponent(s). On the other edge, we could be open to the same ‘data leakage’, which gives a smarter, technically-astute adversary the ability to ‘out-know’ us. The trick, therefore, is to use such opportunities as a tailwind rather than suffer it as a headwind, and this is where information manoeuvre, information advantage and agility come into play.

HALF-TIME PRECIS

The prime movers discussed above suggest juxtaposition for human behaviour. On one hand individuals and societies have voiced growing distrust and anger about hegemonic institutions and systems, shouting a desire for change; however, they are also voicing apprehension and concern about the uncertainty that change will bring - because the voices are numerous and disparate, and not unified or organised. Therefore, emerging human behaviour may not just be about the fusion of individual, social, political, technological and geographical factors,

but also typified by confusion of cause-and effect factors, as well as push-and-pull factors. Consequently, social and individual factors are increasingly seen as shifting sands of beliefs, motivations and behaviours. Humans fight for many reasons and it is hoped that the four prime movers above start to explain how human-centric issues related to change, uncertainty, competition and struggle, which can lead to instability and conflict; especially when behaviour is a reaction to events forced upon one rather than volitional and a matter of choice. The prime movers also shape the environments that the military will be faced with, and which have been varyingly described as volatile, uncertain, complex and ambiguous²⁹ or as congested, cluttered, contested, connected and constrained,³⁰ and also as crowded, complex and coastal.³¹ So, what do these prime movers and their behavioural implications mean for military capability?

CHALLENGES FOR MILITARY CAPABILITY

If the human component of fighting power is to remain vital to military performance, then we must recognise and address the challenges (as well as maximise the opportunities). Here follow three key challenges that the military must address:

²⁹ Stiehm, J. H., (2002), *The U.S. Army War College: Military Education in a Democracy*, Philadelphia, PA: Temple University Press.

³⁰ DCDC, (2010), *Future Character of Conflict*, Shrivenham: DCDC.

³¹ Kilcullen, D., (2013), *Out of the Mountains: The Coming Age of the Urban Guerrilla*, London: Hurst.

Challenge One: The issue of granularity and fidelity:

As highlighted by the prime movers above, the socio-political world order has shifted, so has digital technology - these have undoubtedly influenced human behaviour. This means that the current capabilities for conducting Target Audience Analysis (TAA), human terrain analysis, social network analysis and information environment analysis are already behind the curve; just as the military had begun to get its head around these issues after operations in Iraq and Afghanistan. The growing requirement for wider inclusion and deeper analyses of socio-individual factors (as espoused by Identity Fusion Theory and identity politics) means that TAA and human terrain analysis are too cumbersome as techniques, as they do not currently possess the fidelity and finesse to accommodate future insights into target audiences and their behavioural antecedents and mechanisms. Given this observation it could also be argued that relevant doctrine is also out of date, for example, JDP-04 Understanding and Joint Doctrine³² Note 4/13 Culture and Human Terrain,³³ which may both require a rescrub given the discussions in this article. Therefore, the level of granularity required to reduce the vagaries of human nature, thereby improving and increasing fighting power, is now greater than ever.

Challenge Two: The paucity of research and development funding:

The need for human-centric understanding and capability can be linked to three areas mentioned in the MOD's Single Department Plan:³⁴

- Defend and contribute to the security and resilience of the UK and Overseas Territories against state and non-state threats,
- Conduct overseas defence activity, and
- Project our global influence.

One of the largest challenges to Defence achieving these aspirations is the woefully small amount of research funding to support them. The MOD Chief Scientific Advisor's non-nuclear research budget, as owned by the directorate of Defence Science and Technology, is approximately £380 million per annum, and shrinking every year. Within this budget approximately 97-99% is spent on hardware, ie. platforms and systems across space, air, land, above water, underwater, cyber and Information and Communications Technology (ICT); which suggests that 1-3% is spent on dedicated human-centric interests, such as Influence and Non-Kinetic

Effects or Future Workforce and Human Performance. Even if the smatterings of other 'human stuff' were accounted for within the other 21 non-human-centric research programmes managed by the Defence Science and Technology Laboratory, it would still only account for approximately 5% of annual funding. This highlights a glaring mismatch between words and deeds whereby 'people' issues are identified as one of eleven strategic S&T capabilities within the MOD's S&T Capability Strategy, and where an improved understanding of socio-cultural and socio-technical behaviour of adversaries, potential adversaries and a range of target audiences is central to overseas defence activity and the projection of influence.

Challenge Three: 'Safe to fail' opportunities:

Opportunities to test and train the human component of fighting power exist, e.g. exercises, table-top exercises and wargames. However, the human-centric issues have not historically been a primary area of focus and they often lack sufficient pre-event preparation in terms of scenario development, in both quality and quantity. This has meant that activities such as TAA, cultural understanding and information environment analysis have been woefully poor or non-existent on exercises. Therefore, if one seeks to achieve information manoeuvre or information advantage in the real world then one must design and test such requirements in safe to fail opportunities. The two key challenges for accomplishing this are:

- Appropriate funding and time to allow for the design and development of human-centric information;
- The employment of Suitably Qualified and Experienced Person (SQEP) Subject Matter Experts (SME) to help create such content.

In essence, this means getting the right people in to create the content, and giving them enough time and money to do a good job.

Another issue is the ability to allow staff to fail rather than contrived success in order to justify the spending. Participating staff (at all levels) are generally unwilling to take risks and subsequently learn from failure because of the potential implications for staff annual reporting. Personnel must be empowered, if not encouraged, to try, and if they fail then to understand why they failed and how to improve. Surely it is time to get back to

³² DCDC, (2010), Joint Doctrine Publication 04 – Understanding.

³³ DCDC, (2013), Joint Doctrine Note 4/13 – Culture and Human Terrain

³⁴ MOD, (2018), MOD Single Department Plan (updated 23 May 2018)

training and exercises as learning opportunities and not as programmatic and financial box ticking events? One appreciates that these opinions might be accused of being naïve and lacking the strategic insight of MOD as a bureaucratic government organisation, but one also feels one step away from being told *It can't be done, and that's just the way things are*, which would be a sorry state of affairs for all concerned.

According to UK Defence Doctrine (JDP 0-01) one of the aims of the conceptual component of fighting power is to ...*provide the intellectual basis for our armed forces...* (p.28). On this matter, and the matter of military learning and education, it is worth invoking the spirit of another warrior-scholar, Field Marshall Earl Wavell, who, when writing about the conceptual component of soldiers and soldiering³⁵ (in 1953), which he referred to as 'Minerva's Owl', sent out a clarion call for the British Army to be a school of character as well as learning, whereby daring, initiative and ingenuity must be inculcated within the army's psyche. Yet Wavell lamented this because he claimed that despite the military merely talking about it, it was seldom taught or exercised - a classic problem of the deeds not matching the words.

One thing is clear, if people don't have the opportunities to take risk and learn from exercises and other 'safe to fail' training environments then they won't have the confidence to employ them on operations, especially with

the increasing prevalence of real-time and retrospective legal action; and if they don't employ them on operations then this undermines fighting power and the probability of achieving military objectives and overall success.

SUMMARY

The big trends in humanity are creating a perfect storm for subsequent human behaviour. The complexity of population dynamics, societal changes and individual identity, all of which is enabled through rapid technology advances will bring challenges and opportunities for military capability, which will in turn, possess implications for the human component of fighting power. Perhaps, by investing in, developing, testing and operationalising human-centric research and capabilities that address the socio-cultural and socio-technical aspects of human behaviour, one can start to reduce the 'vagaries of human nature' that will be an enduring part of warfare, and which will only get more tangled as we consider the very human issues of uncertainty, competition and struggle that lead to instability and conflict - at whose centre the military will find itself deployed.

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Soldiers from the 4th Battalion The Royal Regiment of Scotland leaving a military vehicle during a display for the Secretary of State for Defence, who, in front of a backdrop of 100 personnel, armoured vehicles and AH-64 Apache Attack Helicopters announced a new UK Centre of Excellence for Human Security. The aim of the exercises was to protect non-combatants in a conflict zone. Photo: Corporal Robert Wideman RLC, Crown Copyright.

35 Wavell, A. P. (1953). *Soldiers and Soldiering*. London: Jonathan Cape.

Learning as a Secondary Training Audience

Captain Christopher Murphy, HCR Ops Officer, looks at the benefits of learning as a secondary audience during three training exercises in 2019 as OPFOR and other roles.



On Exercise Prairie Storm 4's OPFOR are made up of the Princes of Wales Royal Regiment, Royal Dragoon Guards, Queens Royal Husars, 5 Rifles and Royal Electrical and Mechanical Engineers Light Aid Detachment. Despite not being a part of the main Battlegroup, OPFOR's task is still just as demanding as they attempt to outwit the Household Cavalry Regiment and their attached units. Photo: SAC Lee 'Matty' Matthews, Crown Copyright

In the first half of 2019, the Household Cavalry Regiment (HCR) deployed its Battle Group Headquarters (BGHQ) in three separate simulation exercises. In each, the BGHQ played very different roles: as an OPFOR Army (Ex SPECULAR); as an Armoured Infantry Brigade within a British division (Ex WARFIGHTER 19.4 (WFX)) and as an AJAX-equipped reconnaissance battle group in the STRIKE Brigade (Ex JOINT WARFIGHTER ASSESSMENT (JWA)). In none of the exercises was the HCR BGHQ the primary training audience;¹ it was always in a supporting role as OPFOR or a LOCON. Yet each exercise offered valuable lessons and insights which made the exercises a superb training opportunity. Despite being a secondary audience, HCR was able to examine, test and refine its operating procedures. The BGHQ benefitted from the requirement to plan, act and think in a different manner to the primary training audience, and equally from the liberating sense of not being assessed.

This article describes the HCR BGHQ's experience of learning as a secondary training audience across the three simulation exercises. It sets out the case that the often-overlooked supporting roles are equally valuable training opportunities and could even provide more value to Unit development than the test of being a primary training audience. It identifies the positive and negative conditions that made the experiences so valuable to HCR, offering the conditions as freedoms and constraints. It aims to encourage Formations and Units to be cognisant of and replicate these conditions to provide Units and sub-Units with the greatest opportunities to learn and develop.

FREEDOMS

The first, and greatest, freedom experienced across these exercises came from the simplest act: a strong encouragement by the Chain of Command to think differently. Coupled with the knowledge that it was not being assessed, and therefore under less pressure, the BGHQ felt free to focus completely on the effect it could have on the enemy. Staff felt they were not measured against their adherence to doctrine, or against their ability to follow the planning or orders process; their output would not be scrutinised against a template.

The BGHQ was free from the sense that it must create its plan in a particular way and execute with minimal deviation from that plan. The resultant atmosphere of creativity and innovation enabled the BGHQ to measure success entirely in terms of effect against its adversary. The BGHQ was not choreographing a staged fight, it was enabling a brawl, ready to ignore known 'rules' to bring the opposition down. Across the three exercises, instances of temporary diversion from its focus on the enemy, and the resultant tactical failures for the BGHQ, reinforce the importance of this obviously important but often hard to achieve focus.

This greatest single empowering condition for the HCR BGHQ liberated staff from holding their actions hostage to a specific estimate format or plan. Whether acting as an Army, an Armoured Infantry Brigade or a STRIKE Brigade, staff were better able to 'read' and 'feel' a battle as it unfolded. As a fighter would in a brawl, the BGHQ made more effective use of intuition to guide its action. Intuition enabled the BGHQ to seize perceived opportunities as the battle unfolded and generated faster responses to observed enemy activity.

Second, in all three exercises, HCR felt empowered to experiment with task-organisation. Grouping sub-units differently to spread capabilities evenly across a force improved protection, created operational versatility and achieved the dispersal so valuable when facing a vast overmatch in fires.² By dividing and spreading fighting capability in this way, planners mitigated the impact of each Indirect Fire (IDF) strike on the overall fighting power of the formation.³ This proved a particularly effective force protection mechanism during WFX, where the Division suffered over eighty percent of its casualties from highly effective IDF.

Third, by virtue of not being assessed on its processes, the HCR BGHQ could experiment with them or employ different ones entirely. Over the three exercises the BGHQ evolved its planning procedures. Drawing heavily on Systematic Inventive Thinking (SIT)⁴ HCR experimented with its estimate and planning processes

1 'Primary training audience' refers to the combat formation for which an exercise is designed.

2 The new groups enabled geographic dispersal by virtue of their better protection, but equally dispersed critical combat power across the force.

3 Planners sought to mitigate the situation faced by UKR forces against Rus in 2014: any single strike would not destroy a significant proportion of any one combat capability, because, armour, engineers, and artillery were spread across the formation.

4 Project MERCURY has speed of execution as its principle goal: an estimate process designed to exploit the unique characteristics of STRIKE, specifically speed and dispersal. MERCURY is still developing, but HCR's experience in these exercises offer positive indications that the process has the potential to replace the current estimate process in certain situations.



Pictured is an Ajax new multi-role, fully-digitised armoured fighting vehicle in-country cold-weather system trialing at Tame Rangers in Sweden, March 2019. Photo: Jack Eckersley, Crown Copyright

in all three exercises. The new estimate process, Project MERCURY, increases the staff's focus on the adversary, generates speed of execution and encourages intuitive reading of the tactical situation.⁵ The BGHQ staff found the amended processes better balanced the 'science' and 'art' of warfighting. This balance led to faster decision-making and retained the initiative: important factors in the tactical successes HCR had in these exercises. Crucially, the environment of forced innovation was stimulating for the staff. A collective acknowledgement that the planning team was trying to change an extant process created a shift in mindset: a greater appetite to risk volunteering and trying ideas. Coupled, again, with the all-important encouragement from the chain of command, the HCR BGHQ felt that its learning accelerated more than in many exercises where it was the primary training audience.

Overall, during these exercises, the HCR BGHQ was able to plan differently and produce more decisive tactical action, organise its forces in unconventional ways against an overwhelming threat, and experiment with its own internal processes.

CONSTRAINTS

'Fight the enemy, not the plan;' General Sir Jack Deverell KCB OBE DL urged participants on Ex WARFIGHTER 19.⁶ This sage advice often proved hard to follow. The first and greatest of three constraints described here was the BGHQ's own plan. Despite the moniker that a 'plan rarely survives first contact with an enemy', during the execution of a mission staff succumb to an almost irresistible gravitational pull of a plan over which it has laboured long and hard. Combined with a tendency to labour in search of the 'perfect' plan, a staff can refine and adhere

⁵ *Project MERCURY has speed of execution as its principle goal: an estimate process designed to exploit the unique characteristics of STRIKE, specifically speed and dispersal. MERCURY is still developing, but HCR's experience in these exercises offer positive indications that the process has the potential to replace the current estimate process in certain situations.*

⁶ *General Deverell was senior mentor to GOC 3(UK)XX for Ex WARFIGHTER 19.4.*

to Operational Staff Work (OSW) at the expense of acting quickly enough to take the initiative from its adversary. Where the HCR BGHQ heeded General Jack's warning, and released itself from its plan to react to the unfolding battle, it read, assessed and reacted to its the enemy better. Greater tactical impact was usually the outcome. Second, the constraint of our tactical lexicon. The language we use to give orders is designed to achieve clarity of communication, particularly of a commander's intent. But this same language can equally fix staff and commanders in unexpected and unhelpful ways. In all three exercises, the HCR BGHQ found that the lexicon of Orders can unwittingly encourage commanders and staff to focus on friendly actions, rather than on the desired effect on an adversary - ignoring General Sir Jack's first principle of fighting. On WFX, directed to FEINT towards an area

task. By focussing on the task (the FEINT), we lost sight of *the purpose* of our actions - to force the enemy to unmask valuable weapon systems for subsequent destruction by our own forces.⁷

Intent on achieving the specified task, the planners used control measures which would indicate how its own force was progressing: an easting to be reached, report lines to be crossed, assessments of our own combat effectiveness. The lexicon had diverted the staff from enemy-focused metrics which would have given the execution team a better indication of whether the force was achieving its purpose. In execution, no sooner had the force crossed its line of departure, the enemy unmasked these assets with severely destructive effects on our force. The command failed to recognise that it had achieved the desired outcome and pursued the feint to



Caption: 'Soldiers and vehicles of the Household Cavalry Regiment OPFOR the evening before the final attack. Barakat Training Area, Oman, 26 Oct 18'. Photo: Adrian Wain, Crown Copyright

to unmask the enemy within it, the staff drove its force into defeat, fixated by the desire to achieve the specified

⁷ In this example, massed artillery and air defence.

the brigade's own destruction. Had the mission simply told us to manoeuvre in such a way as to unmask critical enemy capabilities for subsequent targeting by others, we may have been less inclined to fall victim of this unintended semantic trap. Learning from this experience, the BGHQ used these exercises to experiment with mission statements, reducing descriptions of friendly force action and ruthlessly focusing language on the enemy and outcome.

Third, the desire to fight according to doctrine is another alluring and constraining factor. Where empowered, the HCR BGHQ found success and learned valuable lessons from fighting differently, rather than adhering to the 'correct' method of fighting. This is not to denigrate the value of doctrine, and its codification of hard-won tactical lessons, but to identify that freedom, and tactical success is not limited to actions described in publications. The aim of a battle is to win, not to win in a particular way: commanders and staff must feel empowered to use doctrine as a guide, not a constraint.

REPLICATING THE CONDITIONS TO ENHANCE TRAINING

Future training should replicate the freedoms and reduce the constraints the HCR BGHQ found in these three exercises in order to accelerate learning and development in the force. First, commanders must enable their staff and their soldiers to think differently. This is empowering, effective, and encourages an inquisitive, experimental approach to learning. Allowing innovation and creativity is vital to develop new behaviour, contributes to a 'safe to fail' training environment and makes the process of learning faster and more professionally rewarding.

Second, we must work harder to break the habit of assessing success against a staff's ability to follow a specific (estimate and planning) process. Metrics of success and failure must be broader, acknowledging efficiency of process, but prioritising effect against an adversary. Acknowledging the value of non-assessed training events, the Army is already moving in this direction with concepts such as BATUS' 'Mission Zero.' Changes in how the Army trains the estimate process might encourage acknowledgement that other analytical methods can be equally valuable in a military context. By removing the estimate process from the pedestal on which the Army's education system places it, we might usefully reduce its role as an assessment tool. Our adversaries will not care how we planned to defeat them, only that we have defeated them.

Third, we should encourage intuitive reading of tactical situations alongside rational or logical 'analysis.' Developing our peoples' experience with more and varied training will improve intuition. Adjusting this balance requires the Army to be more tolerant of unquantifiable metrics: intuition, and its effect on the battlefield is challenging to gauge, but offers an enticing reward of greater speed in the decision-action cycle. Simulated and live training, TEWTs and historical case studies (whether on the battlefield or as conceptual exercises) are all valuable and contribute to the development of knowledge on which a commander might draw to make an intuitive decision: often an immeasurable judgement on when to be daring and when to be cautious.

CONCLUSION

HCR's experience in these three training exercises provided the opportunity to compare its exercising conditions and subsequent levels of learning and development with those of the primary training audiences on each exercise. HCR found these exercises equally and arguably more valuable as a result of not being the primary training audience. As a supporting element, HCR was able to experiment with its own practices, develop new processes and take risk. These led to developments in HCR's BGHQ which, under the conditions of a 'primary training audience' it would be less likely to make. Equally valuable, the exercises provided an opportunity to observe different headquarters in action (including partner nation practices) and recognise some of the British Army's institutional strengths and weaknesses.

HCR's specific observations from these exercises, and the lessons or actions it is taking as a result, are given in more detail below. They represent a small part of the Army's constant effort to improve: an effort which HCR asserts can be continued very effectively in simulated exercises, and as a supporting element to others' learning. Learning as a secondary training audience has reinforced the lesson that the most important accomplishment is victory, not the way in which it is accomplished; that we should heed the advice of General Sir Jack Deverell and always 'fight the enemy, not the plan.'

SPECIFIC LESSONS FROM LEARNING AS A SECONDARY TRAINING AUDIENCE

Lesson 1: Evolving the Combat Estimate

From these three exercises, the HCR BGHQ has derived many lessons concerning its planning and execution processes. Our experience highlighted several ways in which the Seven Questions Combat Estimate could be

adapted. These include, but are not limited to: restoring a greater sense of mission command; focussing on the enemy and achieving tempo; revising our planning lexicon; and identifying the times at which it is best to adhere to or deviate from current doctrine.

- *Restoring a greater sense of mission command: The tools a HQ gives to its subordinates are balanced between command and control – in particular the Decision Support Matrix (DSM) and Sync Matrix. Both support the ultimate articulations of mission command: the unit's Mission and the Commander's Intent. The DSM is grounded in conditions, is time 'relative' and allows a flexible focus on the enemy; this product is inherently more command focussed. (A commander will often want to know what the next decision he is expecting to make is.) Comparatively, the Sync Matrix is inherently control focussed; it is grounded in 'absolute' time and affords only limited flexibility for different ways the plan may play out, depending on the conditions which may or may not be met. A useful articulation of a plan at the outset, the Synch Matrix is*

vulnerable to change and can quickly become obsolete if it is not constantly updated (a process which creates issues of version control, OSW management and places greater burdens upon the often fragile C2 systems which support our HQs).

- *So what? We must consider which products are of the utmost value to our subordinates and focus ruthlessly on those – at the expense of any product which is only of peripheral interest to a subordinate unit. These products should be fewer and more concise than the current OSW. HCR successfully experimented with issuing only a pictorial representation of the scheme of manoeuvre, and a comprehensive DSM. Whilst the Sync Matrix is arguably of more immediate use - it gives people a quick visual representation of how the task will work - if we*



Exercise SAIF SAREEA 3, 2018, Members of the 1 MERCIAN battlegroup carry out armoured platoon attack drills against the Household Cavalry Regiment (HCR) OPFOR, Barakat Training Area, Oman. Photo: Adrian Weale, Crown Copyright

are to focus on restoring mission command and gaining tempo over the adversary, we should focus on the decisions the commanders expect to make and what conditions support those decisions. The details of precise timings and synchronisation are undeniably important, but are secondary to overall command and control of the force and can often be hastily arranged using existing tools such as Standard Orders Cards (SOCs) or Quick Battle Orders (QBOs) delivered over radio/chat. Battles of the future may demand the British Army is comfortable operating with less information, but a Unit's Mission and the decisions that the commander is expected to make, with their associated conditions, are part of the irreducible minimum.

Lesson 2: Focus on the enemy and on achieving tempo

It is straightforward to make the argument that current processes encourage us to fight the plan not the enemy. Loyalty to a product which we have worked on for so long is only natural, and to deviate from it because the adversary has done something we don't expect, is something we are reluctant, and consequently sluggish, to do. However, almost always, things don't go entirely to plan. Therefore, it may be worth focussing on intent-based, command-driven, leadership and orders, which are not prescriptive, but allow room to change and adapt to the situation as we find it when we get there, rather than what we thought we would find when making the plan. Applying a raw focus on winning against the adversary can be painful for the staff, it can involve abandoning things which have had significant time and energy invested in them. BUT, the cost of making this change is far less than the cost of what may result in combat if these changes are not made. As part of this, we must not be afraid of intuition - it exists for a reason and, particularly amongst senior commanders, has been honed over a huge amount of experience.⁸

***So what?** A key principle of any planning process must be the flexibility to change and adapt, and preferably to do so without creating a sense of wasted work. To do this entirely is almost impossible as we must work to anticipate some eventualities, only one or perhaps none of which will turn out to be the case. There are*

two contrasting ways that headquarters currently create flexibility: one is to produce a CONPLAN for every eventuality, codifying exactly what should happen given a specific anticipated change in the circumstances; the other is to give much less direction in the first place and in so doing allow more room for freedom but place a greater emphasis on the judgement of commanders at all levels. Neither one of these is 'right', both have advantages and disadvantages. One has more rigour applied to it but works the staff much harder producing product which - hopefully - is never used. The other balances a greater degree of risk against empowering subordinates to act upon what they see.

Lesson 3: Planning lexicon

The psychological impact of the words we use to define tasks is huge. Currently, military terminology is very strict and arguably this is correct; effects are distinct from actions and all effects and actions have specific definitions. Whilst this can facilitate clarity and mutual understanding, it doesn't always lead to the desired outcome upon the adversary being achieved. Our 'feint' during WFX - referred to earlier - is an excellent example.

***So what?** When planning, it helps to use plain language. It also alleviates the requirement for specific interpretation of effects and actions by subordinate commanders. Our currently very strict lexicon of effects and actions either requires encyclopaedic knowledge or constant reference to handbooks; it can be both overwhelming and confusing. Assuming that we generally aim to facilitate mission command, we should use action words which have a higher or lower number of hyponyms⁹, depending on how much room for interpretation we wish to give.*

Lesson 4: Adherence/deviation from current doctrine

Our doctrine is excellent, and often we are guilty of producing plans without reference to it. If we wish to break from doctrine, we would do well to still adhere to the 'principles' which are outlined in our various Army Field Manuals (AFMs). In these three exercises, HCR found success in configuring its forces differently, and adapting the scheme of manoeuvre suggested in the AFMs; but the principles of fighting (at least for larger formation operations) remained relevant through HCR's

⁸ The value of intuition is echoed in academic literature including Daniel Kahneman's 'Thinking Fast and Thinking Slow' and Malcom Gladwell's 'Blink,' and even extends to leadership theory in Gary Klein's 'Intuitive Leadership.'

⁹ A hyponym is a word of more specific meaning than a general or superordinate term applicable to it. For example, if you were instructed to 'screw the shelf to the wall', you would reach for screws and a screwdriver before beginning work. Screw has only one meaning in this context. If on the other hand you were asked to 'attach the shelf to the wall', you may consider using screws, nails, glue, tape and any number of other means of affixing one object to the other. 'Attach' has more hyponyms than 'screw' and therefore encourages a greater diversity of options. In military speak, use of words with more hyponyms facilitates mission command.



Members of the 1 MERCIAN battlegroup carry out attack drills against the Household Cavalry Regiment (HCR) acting as OPFOR at the Barakat Training Area, Oman, during Exercise SAIF SAREEA 3. Photo: Adrian Weale, Crown Copyright

experimentation. Adhering to, or, deviating from, doctrine is a matter of personal judgement and creativity: doctrine should be used in the absence of other direction, but should not inhibit more creative ideas or solutions.

***So what?** Throughout our planning, we should focus on the principles of the actions, rather than the mechanics of their precise and prescribed execution. We should not be afraid to deviate from existing doctrine, but should have considered it and rejected it based on the circumstances of the operation. In order for tactics and doctrine to progress, we must constantly be pushing at its edge – pursuing new ways to operate, to surprise our adversaries and innovate for success.*

Russia's Military Internet

Dr Steven J Main looks at the ongoing development of Russia's Multi-Server Transport Communication Network (MTSS) (*Multi-servisnaia transportnaia set' sviazi*, (MTSS) military internet, including the use of smart phones and social media, and its role in Russia's military machine.



Shown is the RuNet Logo of Russian-language internet services. Photo: Dmitry Rozhkov, Creative Commons Attribution-Share Alike 3.0 Unported License, Wikimedia

Russia's attempts to create its own 'national' Internet¹, completely unnoticed by most Western analysts are signs of progress being made by the Russian military to build its own version of the net, designed exclusively for the use of the military and Russia's national security apparatus.² An article written by A Pisarenko, 'head of department from the Main Communication's Directorate of the Russian Armed Forces', appears to show that the first publicly available information on the Russian military internet came to light in March 2019. Possibly in an attempt to both avoid confusion, as well as distinguish it from the civilian internet, the Russian phrase used bore no resemblance to the word normally used for Internet in Russian and it did/does/ not even have the word, 'internet' in its title namely, the 'Multi-Service Transport Communication Network', (*mul'tiservisnaia transportnaia set' sviazi, MTSS*). The first public mention, tracked down by this author, was in Pisarenko's piece published in the main newspaper of the Russian Armed Forces, *Krasnaia Zvezda* which had very little to say about the MTSS proper, mainly describing in very little detail, its systems and sub-systems.

Thankfully, a second article, which appeared later that month, was much more informative. Its opening paragraph provided the reader with more useful information than the whole of Pisarenko's piece.

The Russian Armed Forces have begun creating a sovereign internet. The closed system for exchanging encrypted [digital] information already has a name – the multi-service transport communications network. The first stage of the work will be completed by the end of 2019 and it will be fully operational within two years...The MTSS will have its own search engine and to ensure its independent functioning, the military will lay a fibre-optic cable across the Arctic...The MTSS will not have traffic exchange points connecting it to the world wide web...All important information will be stored on servers of the Ministry of Defence. On top of that, it is planned that the MTSS will make it possible to organise the fast transmission of any quantity of

*data over the whole territory of the country through the use of Big Data technology.*³

This extract raises a number of interesting points, not least being the decision to lay the vital fibre-optic cable through the Arctic. Given the increasing impact of climate change in that particular part of the world, it can only be assumed that the Russian military and government are supremely confident in their ability to protect an information 'pipeline', just as important and vital to Russia as any oil/gas/ pipeline operating in Eastern Siberia, or anywhere else for that matter. The Russian authorities do not seem to be too concerned, at least at this stage, of a potentially significant increase in the volume of foreign shipping traversing the Northern Sea Route. The results of climate change⁴ could render the Arctic route more accessible to shipping for longer periods of the year, as companies seek to find less costly, supply routes between markets and consumers.

In terms of current capability, the authors agreed that the current system, 'closed segment for the transmission of data', [*zakrytiy segment peredachi dannykh, ZSPD*] will be 'fully integrated' with MTSS:

*Currently, to transfer information, the Russian military use ZSPD. Until recently, it used networks of civilian operators. In the future, ZSPD will be fully integrated with MTSS, which is being created based on the latest Russian developments in the field of encrypted data transmission systems. The multi-server transport communications network will have its own fibre-optic network - they will be divided into zonal trunk lines. Thus, the Ministry of Defence has already begun preparing to lay a trans-Arctic cable for the needs of the Navy and coastal troops. The fibre-optic cable 'knits' the Arctic and [Russian] Far East from Severomorsk to Vladivostok.*⁵

Therefore, both the Northern and Pacific Fleets will have an additional and, arguably more secure, means to transmit huge amounts of encrypted data quickly and reliably.

1 Seddon, Max, Foy, Henry, 'Can the Kremlin control the net?', *Financial Times*, 6/6/2019)

2 Pisarenko, A., 'Na urovne vozmozhnostey veka', *Krasnaia Zvezda*, 1/3/2019; A Ramm, A Kozachenko, B Stepovoi, 'Voenniye, krasiviy, suvereniy: armiya RF sozdaet zakrytiy internet. Vsiya voennaia informatsiia budet khranitiia na servakh Minoborony', *Izvestiia*, 12-3-2019

3 Ramm, A., Kozachenko, A., Stepovoi, B., 'Vyzov priniat: v rossiyskikh voiskakh poiavitsia sotovaia sviaz', (*Izvestiia*, 12/8/2019).

4 The increase of physical traffic in the Arctic could lead to the possibility of increased physical damage to the pipeline, either accidentally or deliberately.

5 Ramm et al., *ibid*.

In order to enhance further the security of data transmission, a 'unified information security loop' [*ediniy kontur informatsionnoi bezopasnosti*] is being developed but, other than its designation and the fact that it will be equipped with 'modern technology and software', the authors did not elaborate on the 'loop'.

They did, however, partly outline the future operating procedure of the MTSS:

Provision has been made in the MTSS for an electronic journal to record the activities of officials and for identification of the user. This system will allow replicating all the activities of military personnel on the network. The officers, serving the loop will be able to monitor the traffic and the operation of the networks in real time and, where necessary, re-direct the information flow, if a particular segment of the network becomes overloaded.⁶

Of course, even with the best operating systems, things can go wrong:

The main elements of the system also include a module to register crashes...It [the module] will be used to distribute [allocate] tasks to restore communications. On top of that, on the basis of the accumulated archive of data, it is planned to create a programme to predict non-standard [emergency] situations, thereby ensuring the reliability of the MTSS.⁷

Obviously, despite the alleged impenetrability of the MTSS, its designers have to create and operate a back-up system in the event of the unthinkable actually happening. The next section, in translation, is entitled, 'the i-Cloud, military style':

The archive of data, formed on the basis of turnover of documents of the department [MoD?] and information from military units, will only be held on MoD servers. It will be constantly backed up.



Pictured is a Russian R-431AM antenna module of Redut-2US signal and communications system at the Military-technical forum ARMY-2018 at the Park Patriot in Russia. Photo: Vitaly V. Kuzmin, www.vitalykuzmin.net, Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License

⁶ *Ibid.*

⁷ *Ibid.*

All this data gathering, storing and transmission, never mind use, is crying out for a link with Russia's central strategic war-planning and war-fighting organ: the National Defence Management Centre of the Russian Federation.⁸

*The military internet will also have its own word search engine which will allow [the user] to request information, using key words or phrases. Information about ground forces, planes which, at that [precise] moment are on airfields, in flight, as well as also about submarines, surface ships, even military spacecraft will be constantly updated. Based on this information, an interactive map will be created, actually depicting existing brigades and divisions of the Russian Army. Such maps will allow the [senior] command to assess the situation, whilst [being] in the National Defence Management Centre.*⁹

Even at operational-tactical level, MTSS will be able to interact with hand-held tablets:

*The MTSS will also be useful in combat conditions; thus, the Russian reconnaissance, command and control communication system, 'Strelets' already makes it possible to download a map of the target area of combat operations onto a tablet. In their turn, the military scouts will be able to supplement it with acquired data, using secure channels. In addition, the network makes it possible to ensure supplies in a protected regime: furnishing the troops with food, personal kit, hardware, weapons and ammunition.*¹⁰

More information since the publication of both articles in March 2019 on Russia's 'military internet' came to light in August 2019, following a successful 'trial' held in the Central Military District (MD). According to the published source:

Data exchange at a rate of 3000 Mbs per second has been carried out between two field [communication] points. The field [communication] points were more than 2,000 kms apart. Special technology and around 1,500 mobile communication and encryption complexes were used to create the links operating over such extra-long distances. The Defence Ministry stated that the exercise was held in the Central Military District. Mobile encryption video-

*conferencing complexes, as well as space communication systems, were used to establish the links. Mobile 'Nikel' systems were used for encryption.*¹¹

The article confirmed much of what was already known about the 'military internet': that 'conversations [razgovory in Russian] had been going on about the former 'for the last three years'; that the 'first phase' will be completed by the end of 2019, with the whole system being operational 'in two years'. It reaffirmed the role of the National Defence Management Centre, stating that the latter 'operates the military internet but, in case of mobilisation...the latter can include civilian resources, for example the defence-industrial complex.' In order to allay the concerns of the reader, the report also stated that, in such an eventuality, 'it must be understood that it connects only through trusted servers,' and that 'exercises' are held 'periodically' to ensure that such connections are 'secure'.¹² The article did make one significant additional detail: it 'noted' its role in the campaign in Syria.¹³

Shortly after the exercise took place, another article appeared in the open Russian press about the use of the military internet in the field:

*Unique exercises were carried out in the Central Military District...special radio-communication channels were created during the course of the exercise by which encrypted information was transmitted. A highly secure local wireless network allowed the transmission of large-volume files, including audio- and video-conference files...The data was transmitted over a distance of more than 2 thousand kilometres. More than 4,500 service personnel were used in the exercises, as well as more than 1,500 modern communication devices used to create the wireless network. During the exercises, the MKS-P and MK-ZVKS digital and mobile video conferencing complexes were used, as well as the R-438 'Belozor' space communication system. All of the transmitted data were fully encrypted by the 'Nikel' mobile complex. This high-speed VPN-gateway allows the creation of secure networks for the transmission and encryption of any information flow. Military personnel were able to deploy all of the [necessary] equipment in the course of an hour.*¹⁴

8 Main, Steven J., *Is Russia preparing for war?* (British Army Review, 164, autumn 2015, 29-35).

9 Ramm et al., *ibid.*

10 *Ibid.*

11 'Russian military successfully tests 'own' internet', (BBCM, 19/8/2019, published on 23/9/2019. Original Russian report published in Armeyskiy standart, 19/8/2019).

12 *Ibid.*

13 *Ibid.*

14 Ramm, A., Kozachenko, A., Stepovoi, B., 'Vyzov priniat: v rossiyskikh voiskakh poivavitsia sotovaia sviaz', (Izvestiia, 12/8/2019).



Vladimir Putin at the National Defense Management Center of the Russian Federation. Photo: Press Service of the President of Russia, Creative Commons Attribution 4.0 International license, Kremlin.ru

The article also stated that the created local network was ‘completely independent’ and had no internet exchange points with ‘outside’ internet. In other words, ‘all important information was transmitted through Ministry of Defence hardware, encrypted’, thereby ‘avoiding the possibility of leaks.’¹⁵ That being the case, the authors confidently predicted that ‘in the future, [such] communication lines will allow the organisation of high-speed transmission of practically any volume of information over the entire territory of the country.’¹⁶

Assuming this to be the case, this would mean that Russia would be able to know, in real time, and act, in real time, to any - if not all - changes on the future physical battlefield landscape. It could ascertain, fairly quickly, the contours of the overall battlefield, as well as the peculiarities of any single engagement, as long as the communication flow remained uninterrupted and intact.

Interrupt that and the digital ‘eyes and ears’ would be severely impaired and, consequently, Russia’s ability to control events on the battlefield.

Along with information appearing in the Russian open press about Russia’s military internet, information has also been recently published, concerning Russian software for use by the country’s military and national security organs. This was occasioned by news that the highest possible security certification for a Russian-designed and produced operating system had been awarded, for the first time ever, to the group of companies producing the *Astra Linux* operating system.¹⁷ Interestingly enough, as Britain’s experience of *Huawei* was mentioned in this article, being used as a backdrop to underline the importance of ‘developing operating systems, the rights to which belong to Russian companies.’¹⁸

¹⁵ *Ibid.*

¹⁶ *Ibid.*

¹⁷ Kolontsova, O., ‘Rodina v kiberbezopasnosti: rossiyskoi OC otkroiut vse sekrety. Astra Linux mozžno ispol'zovat' v organakh goslasti i voennykh strukturakh, gde obratyaetsia informatsiia ‘osoboi vazhnosti’, (*Izvestiia*, 24/5/2019).

¹⁸ *Ibid.*

The article outlined the history of both the operating system and the group of companies whose name it bears:

Astra Linux is a Russian operating system (OS), created 10 years ago by a group of companies with the same name and 'actively' introduced in various departments, organisations and enterprises in the defence-industry complex. At the beginning of last year [2018], it began to be introduced by the Ministry of Defence. On 17th April 2019, the Russian Federal Service of Technical and Export Control awarded an 'approval' certificate to Astra Linux Special Edition operating system, allowing it to be used to transmit data with the [highest security] classification, 'special importance'.¹⁹

One of Russia's top systems programme designers - A. Avetisian - praised the operating system and the companies involved:

The specialists at Astra Linux for the first time in Russian practice have been successful in achieving such a high level of trust in their information security measures for their operating system. Success in this area is [completely] justified.²⁰

Of course, the fact this his institute was involved in helping to develop the system may have had something to do with his praise for the specialist teams involved: later on in the article, he freely admitted that his institute - the Institute of Programming Systems, Russian Academy of Sciences - had been working on the system 'for five years'.²¹ The article's author was also keen to make the point that all involved had not only created a secure and viable operating system, able to transmit the country's most highly sensitive data, but had also played their role in the contemporary battle against the economic sanctions imposed on Russia, as a result of its annexation of the Crimea back in 2014.²²

According to an earlier published article, Astra Linux 'for several years [has] been used in the computerised command and control systems of the Armed Forces' and is also the operating system used by the National Defence Management Centre, described earlier on.²³

To summarise the result so far: the Russian military is developing its own version of the internet, using their

own manufactured operating system (notwithstanding the imposition of sanctions on the regime). Judging by reports, the infrastructure, from centre to field support, is being developed, allowing the senior military and political leadership to make decisions, in real time, which could affect the outcome of military operations in the field. Through the creation and development of the National Defence Management Centre, Russia has the central war-planning body already in place but with the development of MTSS and, again, the public acknowledgement of its connection with the latter, Russia would also seem to be well on the way to enhancing the capability of the National Defence Management Centre to becoming a war-waging organ. In short, Russia looks set to become an ever more sophisticated opponent, both on and off the battlefield, with significant ramifications both for Britain and NATO. Be it physical, or otherwise, as MTSS becomes more and more used and developed, its functionality will increase enormously and will prove to be a very powerful tool in Russia's ability to plan and wage war, both on and off the battlefield.

Related to the development and access to the military internet, Russia has also taken a number of steps *vis a vis* serving military personnel in seeking to impose restrictions, for instance, on their personal use of smart phones, as well as accessing social media sites. The senior command has a very different perception to social media, than junior ranks.

Mindful of the experience of the so-called 'coloured revolutions' of the past couple of decades, they have taken a negative attitude towards the new personal smart technology. Fearing the worse, either in terms of the promotion and stimulation of 'protest' within the ranks, never mind wider Russian society, or the possibility, however unwittingly, of serving personnel giving away information, as regards unit deployment information, service details, other types of information which could be deemed useful to 'the enemy', etc., the senior political and military command have adopted a number of steps to ensure that events such as the Orange Revolution and Maidan Square in the Ukraine back in 2000s, for instance, is not repeated in 'Holy Mother Russia, One and Indivisible'.

¹⁹ *Ibid.*

²⁰ *Kolotsova, ibid.*

²¹ *Ibid.*

²² *Ibid.*

²³ *Kruglov, A., Ramm, A., 'Voennye skazali Windows 'proshchai'. Minoborony postavit na sluzhebnyye komp'iuternye operatsionnuiy sistemuy rossiysskogo proizvodstva,' (Izvestiia, 9-1-2018).*

Thus, in early February 2018, an article appeared concerning a series of ‘recommendations’ issued by the MoD, concerning the use of social media websites by serving officers and men, as well as employees of the MoD. In short, they were ‘recommended’ not to make use of such websites and were certainly not to publish any information about their military service online.²⁴

Later on that month, a further article appeared concerning the adoption of a new set of ‘rules of behaviour’ for officers of the General Staff, effectively forbidding the latter from accepting gifts, for instance, of mobile phones from strangers.²⁵ Four months later, readers were warned - civilian and non-civilian alike - that the microphone on a smartphone could be switched on without the owner being aware that it was on and the conversation recorded.²⁶ By 2018, things began to assume a slightly more sinister hue when it was reported that a draft bill, forbidding serving military personnel from posting details of themselves on social media websites was debated in the Russian parliament.²⁷ The article took the opportunity to reveal a bit more detail about the draft bill, as well as the thinking behind it. According to the article, official ‘recommendations’ about the conduct of military

personnel in relation to the internet had been sent to the troops at the end of 2017 (probably the same set of recommendations described earlier). Following up the earlier set of recommendations, the draft bill proposed the following:

They [serving military personnel] are forbidden to provide - [either] on the internet or through mass media - any information about themselves, or their colleagues, which may reveal their departmental [vedomstvenniy] affiliation, details of their service and place of deployment. Breaking the ban...will mean disciplinary action in accordance with the service rules and regulations, including [potentially] of dismissal from service.’²⁸

According to the article, military personnel, in particular, were ‘targets’ for ‘the special services of certain states, terrorist and extremist organisations.’²⁹ The article also revealed what can only be described as a certain tension in the relationship between the Russian Armed forces and local Russian media outlets, reporting from Syria, Armed Forces had to refute media reports about ‘the location and activities of Russian soldiers in the Syrian



A view of the Russian National Defense Management Center of the Russian Federation (Control and Interaction Hall. Photo: Press Service of the President of Russia, Creative Commons Attribution 3.0 Unported license, Kremlin.ru

²⁴ A Kruglov, B Stepovoi, ‘Soldat i ofitserov nauchili bezopasnomu obshcheniiu v internete. Minoborony ne rekomendovalo im ispol’zovat’ sotsseti i publikovat’ v online informatsiiu o svoey sluzhbe’, (Izvestiia, 13/2/2018).

²⁵ A Kruglov, N Surkov, A Ramm, ‘Tabu na sotsseti vkliuchili v kodeks. Dlia komandirov razrabotali podrynoi svod pravil povedeniia’, (Izvestiia, 28/2/2018).

²⁶ ‘Eksperty rasskazali o sposobe ‘proslushki’ liubogo smartfona’, (Izvestiia, 6/6/2018).

²⁷ M Yurshina, T Berseneva, A Kruglov, ‘Sekretnye selfi: voennym zapretiat pisat’ o sebe v sotssetiakh. K pervomu chtneiu govoritisa pravitel’stvenniy zakonoproekt, predpolagaiushchiy nakazanie vpol’t’ do uvol’neniia za publikatsiiu dannyykh o sluzhbe’, (Izvestiia, 23-10/2018).

²⁸ Ibid.

²⁹ Ibid.



Another view of the Russian National Defense Management Center of the Russian Federation (Control and Interaction Hall) with the President of Russia, Vladimir Putin in attendance (far left). Photo: Press Service of the President of Russia, Creative Commons Attribution 3.0 Unported license, Kremlin.ru

Arab Republic, conditions of service, as well as losses.³⁰ Operations in Syria had also strengthened the need for a total ban on the use of smart phones - or any electronic device with a built-in camera - anywhere near an operating military base.³¹

Monitoring of social media websites had, according to the article, already been conducted by a 'special department' of the MoD 'for already more than two years.'³² However, possibly in a move designed to allay the fears of the reader that this was an unwarranted intrusion in the private lives of serving military personnel, the article also pointed out that, although people had been caught breaking the ban, no one had, as yet, actually been dismissed from military service.³³ A later report, concerning the proposed ban on smart phones being used by serving military personnel - stated that the latter were not to be used in combat operations, on guard duty, in areas of deployment, etc. However, ordinary, simple touch phones could be used as long as they had no built-in cameras. The proposed ban on smart phones was also not 100% exclusive: it was proposed that smart phones could be used by serving military personnel as long as they were used 'in the home', [*v bytu*].³⁴

CONCLUSION

Is all of this an over-reaction to a potential threat, or a simple exercise in caution, bolting the stable door before the horse has bolted rather than after? If one examines the overall context, particularly in the light of events over the past two decades – contactless wars, 'coloured

revolutions', economic, political, even sporting, sanctions against Russia - then the creation of a 'military internet', the proposed ban on smartphones, restricting access to social media platforms, etc., are two sides of the same coin: steps designed to ensure the curb of outside influence on the Russian military machine, both technical and human.

On a much deeper level than most here can understand in terms of the cycle of bloody revolutions Russia/USSR endured throughout the last century, Russia is genuinely scared about the potential of a 'coloured revolution' breaking out. The senior civilian and military leadership will do everything they can to prevent a large-scale protest movement taking hold and spreading all over Russia outside the two main cities of Moscow and St. Petersburg. The country's senior leadership have drawn their own conclusions about the 'Arab Spring', the spread of ISIS and the threat to Russia's internal security as a result of 'fighters' returning home to CIS countries, having served in the Middle East under the flag of the ISIS caliphate. Their actions may seem over the top, but within a Russian mindset, which now begins to think that the collapse of the USSR itself in August 1991 may have been a 'coloured revolution' of sorts, they are determined that there will not be a Russian version of August 1991 and having decided to go on the 'offensive' in the current 'information warfare', the 'rear', in all its manifestations, is just as important as the 'front'.

³⁰ *Ibid.*

³¹ *Ibid.*

³² *Ibid.*

³³ *Yurshina, ibid.*

³⁴ 'Gosduma rassmotrit proekt o zaprete voennym pol'zovatsia smartfonami na sluzhbe, 12/2/2019 (<https://tass.ru/politika/6103377>. Accessed – 12/2/2019).

Mercenaries, Machines and Machiavelli

Major Oliver Biggs, Coldstream Guards, looks at the evolution and transformation of the character of conflict particularly in terms of Artificial Intelligence (AI) and Robotic Autonomous Systems (RAS).



*Pictured is an unmanned Compact Track Loader fitted with a MIRA Modular Autonomous Control Equipment (MACE).
Photo: Sergeant Peter George, Crown Copyright*

Rapid changes in the character of conflict are not a novel phenomenon. In the early sixteenth century, gunpowder was the invention that transformed weapons, military structures, and ways of seeking advantage on the battlefield. Half a millennium later, the emergence and development of Robotic Autonomous Systems (RAS), Artificial Intelligence (AI), appear to be having a similar transformative effect. In the midst of the upheaval of the Renaissance, Niccolò Machiavelli (1469-1527) was a Florentine philosopher and civil servant. His publications *The Prince*, *Discourses on Livy*, and *The Art of War* speak of his frustrations with the conduct of war and politics, and articulate his attempts to give pragmatic and realistic advice on statecraft in an unpredictable world. What advice would Machiavelli give to those militaries seeking advantage in the troubled and uncertain world of the early twenty-first century, and, in particular those militaries pinning their hopes on the development of RAS and AI?

The impact that RAS and AI could have on warfare is limited only by our imagination. As the latest edition of AGILE WARRIOR Quarterly states: *the character of warfare continues to change and we are about to enter a significant technological transition that could lead to a revolution in military affairs akin to the transformation from the horse to the tank.*¹ Neither the potential for change nor the need to embrace it is in doubt; the Director of Capability reminded us in *British Army Review No 175* how it is important to embrace innovation, daring and technological risk in order to transform.² Nor has current military thinking fallen into the trap that technology will solve our problems; the centrality of human decision-making and the fact that 'human sacrifice will remain the ultimate statement of will' is made clear in the AGILE WARRIOR Report 2018/19 essays.³ This chimes with Machiavelli who saw opportunity in new technologies (and wrote about how best to organise for them at considerable length and detail in *The Art of War*); a closer examination of his works reveals areas where his observations remain relevant to militaries and politicians applying new technologies in warfare today.



Portrait of Niccolò Machiavelli by Santi di Tito. Image: © Archivio Iconografico, S.A./CORBIS Wikipedia, Released

TECHNOLOGICAL PROMISES AND THE THRESHOLD FOR WAR

The prospect of a swarm of unmanned drones or unmanned ships, such as the Sea Hunter⁴ programme, able to break through enemy defences, jamming or destroying enemy high value targets and C2 nodes is almost tangible. It is an example of the potential to achieve desired effects through military action whilst significantly reducing the threat of casualties on one's own side. Any manoeuvrist military would want to exploit this ability, and it echoes the maxim that Machiavelli himself is most famous for: the end justifies the means. However, he never used this term precisely and never subscribed to a straightforward argument that morality can be substituted for expediency.⁵

1 Future Land Seminar, Mar 2019 in AGILE WARRIOR Quarterly 2019, Edn 2. 6.

2 BAR 175, Summer 2019, 9.

3 AGILE WARRIOR Report 2018/19, 19.

4 Scharre, Paul, *Army of None: Autonomous Weapons and the Future of War* (New York: W W Norton, 2018), 78.

5 Kahn, Victoria, *Machiavellian Rhetoric: From the Counter-Reformation to Milton* (Princeton, Princeton University Press, 1994), 38.

Machiavelli saw how fixed rules, ideals, and ways of governing were doomed in politics and war and that a leader must have the ability to adapt to political situations; they *must be a fox in order to recognise traps, and a lion to frighten off wolves*.⁶ This adaptability gives opportunity to manoeuvre in the room created by contingencies, but to capitalise upon this, one must control the means at one's disposal. The prospect of advanced RAS and AI threatens this control; even with a policy of human decision-making and humans being 'on' or 'in the loop', RAS can operate so much faster than humans that human involvement acts as a drag on their efficiency.⁷

Whilst western militaries are reluctant to take humans out of the loop as they are still better at identifying anomalies and abstract decision-making, there is no guarantee that potential adversaries would disavow such an advantage on moral grounds if it otherwise meant gaining a competitive edge. The adoption of autonomous weapons would therefore generate its own momentum as rivals scramble for the winning edge in speed. Furthermore, with the prospect of fewer lives of one's own soldiers at risk, the threshold for going to war could be lowered as new technologies promise to offer spectacular results without the need for tiresome and



Russian Uran-9 combat unmanned ground vehicle on display at The Day of Advanced Technologies of Law Enforcement 2017 in Russia. Photo: Vitaly V. Kuzmin, Creative Commons Attribution-Share Alike 4.0 International License, Wikimedia

6 Machiavelli, Niccolò, *The Prince*, trans. George Bull (London: Penguin, 2003), 57

7 ICRC, *Autonomous Weapon Systems: Implications of Increasing Autonomy in the Critical Functions of Weapons*, Versoix, March 2016.

time-consuming diplomacy in an era when notions of peace and war are nuanced and ambiguous. Force may no longer need to be the option of last resort.⁸

This raises the spectre of a twenty-first century version of AJP Taylor's *War by Railway Timetable* thesis:⁹ German victory in 1914 depended upon swift mobilisation using their superior railways, which demanded detailed railway timetables in advance. Whether or not success would genuinely have been contingent on them, the railway timetables were duly drawn up and became a key technological dependency to seize the initiative to defeat France and then Russia. One hundred years later, it is not hard to imagine a similar dependency on the speed that automated weapons offer, a speed that threatens to generate a momentum which humans will struggle to control, and that concurrently influences decisions to go to war.

Machiavelli would have been further troubled by promises of reduced human involvement; he saw that war could not be a detached activity carried out by a separate warrior class (or robots, or mercenaries). Rather he described it as a central activity of a state which depends on the investment of blood as well as treasure. Hence, his advocacy of a citizen militia based on idealised principles of Republican Rome. In Machiavelli's time, mercenary armies offered a state the opportunity to wage war without shedding the blood of its own citizens, and he has articulated how this turned out poorly, where *the arms of foreigners more readily do harm to the public good than their own*.¹⁰ Attempting to take the violence out of warfare often has unforeseen effects. In the nineteenth century, the Gatling machine gun was intended by its inventor to save lives by reducing the numbers of soldiers required to generate firepower on the battlefield. This invention and its successors reached their apotheosis in the wars of the twentieth century where the dead were counted in the millions rather than thousands.¹¹ In the light of history, why should we assume that RAS and AI will reduce the numbers of human casualties? *Increased range has yet to lead to bloodless wars*¹²; the field of battle will simply increase to the limits of human tolerance,

as it did with the introduction of gunpowder, and again with industrial warfare, and will again with newer developing technologies.

JUS IN BELLO AND ACCOUNTABILITY

To comply with International Humanitarian Law (IHL), combatants must observe the principles of distinction, proportionality, and military necessity. Although IHL is yet to determine the relation of RAS to these principles, there are a number of questions that the development of RAS raises with increasing urgency. It is hard enough for a human soldier to exercise these principles in the fog of war and the 5Cs environment¹³, but how could a machine interpret subtle intentions of an enemy to surrender, or if alive but incapacitated and no longer a threat? How could a human intervene in a fast moving and complex environment to ensure IHL is upheld? How would responsibility be taken for a machine's actions that violate IHL?¹⁴ These questions echo the concerns that Machiavelli had about the use of mercenaries on the battlefield, although at face value the charges he levels against mercenaries are diametrically opposed to RAS: they are *disunited, thirsty for power, undisciplined, and disloyal; they are brave among friends but cowards before the enemy*.¹⁵ RAS cannot have any of these vices, but Machiavelli's point was that mercenaries could not be trusted to uphold the values of those for whom they fight; they do not *enter into a covenant with the nation, precisely because it is their appetites, not reasons of state, that propel them into war*.¹⁶

Similarly, the deployment and increased use of RAS on the battlefield does not remove humans from IHL responsibilities; machines do not have values, they have not entered into a covenant with the nation, and they will respond to the way they have been designed and programmed. With increasing AI sophistication, and reduced human involvement, the risk increases that a machine will behave in a manner coherent with its own logic, but outside of accepted IHL or the operator's intentions. Fortunately, a fatal 'runaway gun' scenario involving autonomous weapons has not yet occurred, but drones have wandered off course, often with serious implications such as the US RQ-170 drone lost over Iran

8 Singer, Peter, *Wired for War: The Robotics Revolution and Conflict in the 21st Century* (New York: Penguin, 2009), 319.

9 Taylor, AJP, *How Wars Begin*, (London: Hamilton, 1979), 120.

10 Machiavelli, Niccolo, *The Art of War*, trans. Henry Neville (New York: Dover, 2006), 21.

11 Scharre, *Army of None*, 35-6.

12 *Ibid.*, 303.

13 DCDC, *Future Operating Environment 2035*, (Shrivenham, 2015)

14 Brehm, Maya, *Defending the Boundary: Constraints and Requirements on the use of Autonomous Weapon Systems under International Humanitarian and Human Rights Law* (Geneva Academy: Geneva, 2017)

15 Machiavelli, *The Prince*, 40.

16 Coker, Christopher, *Barbarous Philosophers: Reflections on the Nature of War from Heraclitus to Heisenberg* (London: Hurst, 2010), 147.

in 2011¹⁷, and non-military autonomous systems in other areas such as driverless cars have led to fatalities.¹⁸

The International Committee of the Red Cross (ICRC) is addressing this issue as an increasing priority and believes it is critical to ensure a genuinely human-centred approach to the development and use of AI and machine learning.¹⁹ Collectively, Western nations must be as clear as the ICRC is on the issue; otherwise we risk the exploitation of differing interpretations and ambiguous narrative by potential adversaries who may be less scrupulous in their use of RAS.²⁰ Machines cannot be legal agents; they must be recognised as sophisticated tools that remain the responsibility of the people that operate them. The threat is that the demands of military competition will eclipse delicate questions of how IHL will be upheld unless human control and accountability is prioritised. As Machiavelli states, *the main foundations of every state...are good laws and good arms.*²¹ Well run states and global partnerships must have command of the forces at their disposal if they aspire to keep order in the world.

CONTROL IN A FAST MOVING WORLD

Machiavelli can be accused of being uncritical in his sources, selective in his reading of history, and polemical in his approach. The mercenary armies in Renaissance Europe he abhorred were no worse in behaviour than citizen armies, nor were they any slower to innovate or embrace new technologies. In fact, Machiavelli's much vaunted Florentine citizen militia was swept away by Spanish troops in 1512, which prompted an end to his political career and the start of a more pessimistic literary one. His works, though very different in their styles and approaches, have a common theme of situating military practice firmly within the civic body and the political realm. Mercenaries sat outside of this and therefore could not be trusted, and if RAS and AI bypass human decision-making and control, they likewise threaten the public good. He reminds us that *a wise prince should rely on what he controls, not on what he cannot control.*²²

Where does this leave us in the twenty first century? Machiavelli's warnings from history are echoed by CGS in his introductory remarks at the 2019 RUSI conference; amid the rapid progress of emergent technologies we must focus on *how to fight, not what to fight with.*²³ We must maintain control of new technologies if we are not to be swept along by them into war, or unable to prevent unwanted or illegal death and suffering through their misuse.

The experimentation involved in the *Conceptual Force (Land) 2035* project (CF(L)35) outlines a range of C2 approaches that can vary the degree in human input to balance control and speed. Whilst Machiavelli would appreciate the adaptable approach demonstrated and the assertion that C2 *will remain foremost a human undertaking*²⁴, his words from five hundred years ago, on the similar cusp of technological change, remind us that weapons and the means of war will change and evolve, but war will remain an inherently human activity. RAS and AI present significant opportunities over which we must become masters, not slaves.

17 Tabrizi, Aniseh Bassiri and Bronk, Justin, *Armed Drones in the Middle East: Proliferation and Norms in the Region* (RUSI Occasional Paper, Dec 2018), 27.

18 Widely quoted, but see Laris, Michael, *Nine Months after Deadly Crash, Uber is testing self-driving cars again in Pittsburgh*, *The Washington Post*, 20 Dec 2018 for a brief analysis.

19 ICRC, *Artificial Intelligence and Machine Learning in Armed Conflict: A Human Centred Approach*, Geneva, June 2019

20 See a working paper, *Group of Governmental Experts of the High Contracting Parties to the Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious or to Have Indiscriminate Effects*, at [https://www.unog.ch/80256EDD006B8954/\(httpAssets\)/050CF806D90934F5C12582E5002EB800/\\$file/2018_GGE+LAWS_August_Working+Paper_UK.pdf](https://www.unog.ch/80256EDD006B8954/(httpAssets)/050CF806D90934F5C12582E5002EB800/$file/2018_GGE+LAWS_August_Working+Paper_UK.pdf); Yet the consensus on definitions and policy are still open to interpretation which could be exploited by potential adversaries.

21 Machiavelli, *The Prince*, 40

22 Machiavelli, *The Prince*, 56

23 RUSI *Land Warfare Conference*, 4 Jun 19

24 CF(L)35 in *AGILE WARRIOR Quarterly* 2019, Edn 2, 26.



The Armed Robotic Vehicle (ARV) seen here at the FCS National Mall Display 11 June 2008. Photo: US Army, Wikimedia, Released

The Seven Snippets of Wisdom: Being an Effective Staff Officer within an Arab Headquarters

Major Matthew Wright, WG, provides some interesting insight for those embarking on Loan Service in Arabia as well as providing encouragement for others to take on such roles.



A Scorpion reconnaissance vehicle is seen here firing during Exercise Saif Sareea 3 (SS3) in Oman, the third time British and Omani troops have trained together. The exercise was designed to test the UK and Omani Militaries' ability to train together in difficult conditions within a Coalition Joint Task Force (CJTF). Photo: Corporal Ben Maher, Crown Copyright

British military doctrine states that the Army must be ready to perform within a coalition context.¹ When considering Britain's extensive interests across the Arabian Peninsula, the Army's long history of fighting alongside Arabs and the remarkably close personal and institutional relationships between our own Army and those of the Gulf, then it seems likely that future British military coalitions will include Arabian indigenous forces and armies. It is inevitable that the Army's recent operational history, the 3 UK Division's War Fighter Series, and extensive recent Brigade and Battlegroup training in Europe and the US, have meant that much intellectual effort has focused on developing Staff Officers' readiness to deploy within a US/NATO coalition context. By contrast, and despite the extensive experiences of the British M2T/MiTT Battlegroups during Op TELIC, little research has seemingly been applied to effective methods of working within an Arab context since Lawrence's opus in 1922.²

This article is eminently less ambitious than the *Seven Pillars of Wisdom* or the *Twenty-Seven Articles*: it seeks to assist in preparing those servicemen and women embarking on Loan Service in Arabia and to encourage others to consider and embrace the opportunities associated with such roles. Much of my thinking for this article has been informed by my year as a student at the Omani Command and Staff College and the past twelve months on Loan Service at the Sultan Qaboos Military College, the Royal Army of Oman's equivalent of Sandhurst, in Dhofar, Southern Oman. With that in mind, here are my Seven Snippets for enabling high performance as a British Staff Officer within an Arab Headquarters:

1: We Rarely Speak The Same Language Even When Speaking The Same Language

The British Army has its own body of professional lexicon that aims to ensure mutual understanding amongst British Service personnel during both the planning and execution of military operations. The vernacular of task verbs and mission verbs are deliberated upon by

British Staff Officers and cross-checked against doctrinal definitions, while more ethereal concepts such as Mission Command, the Manoeuvrist Approach, Joint Action, and Fighting Power are supported by a canon of Doctrine, speeches, lessons, and writing enabling one to quickly recalibrate and refresh one's understanding. Due to the specificity of British military vernacular, it is unlikely that the exact meaning of our team's deliberately selected military diction will be understood, let alone conveyed, in a second language even if personnel within the Arab Headquarters have a strong grasp of English, or the British Officer a grasp of Arabic. For example, it is extremely difficult to convey the distinction between ATTACK³, DEFEAT⁴ and DESTROY⁵ when speaking in different languages and across differing military cultures. This lack of clarity therefore undercuts mutual understanding and the efficacy of planning. Furthermore, it exaggerates the challenge of truly understanding the Commander's Intent.

Our small team of British Loan Servicemen working at the Sultan Qaboos Military College spends a great amount of time with the Arab Commander trying to understand what it is that he actually wants, and we talk him through a range of possible outcomes. Having developed linguistically during the Omani Command and Staff College, I do this in Arabic and use the briefing techniques taught during the course to maximise mutual understanding with the Commander. I often ask the commander to visualise the task and then I read-back that which he wants from me. Once the Commander approves an outcome and confirms the parameters of success then I communicate that to the team using British military vernacular, and the planning cycle then starts in earnest. I should emphasise that this does not mean that everyone needs to speak Arabic. I am simply advocating that one must always seek to achieve mutual understanding by speaking in clear, uncomplicated English, which is then acknowledged by the Arab Commander. The extra time taken to truly understand the Commander's Intent is never wasted.

1 Joint Doctrine Publication, UK Defence Doctrine 0-01 (5th Edition). UK Defence Doctrine states that 'the UK may be required to act alone, (but) in most cases our Armed Forces are likely to operate in partnership... with other established allies and partners, or as part of an ad hoc coalition.' Furthermore, NATO's Allied Joint Doctrine explains that 'NATO always prepares to operate with traditional partners, but it is also required to operate with other, less familiar forces, actors and agencies in a coalition.'

2 Lawrence, T.E., *The Seven Pillars of Wisdom*, 1922

3 Take offensive action against a specified objective

4 Diminish the effectiveness of the enemy to the extent that he is unable or unwilling to participate further in the battle or at least cannot fulfill his mission.

5 Damage an object or Enemy force so that it is rendered useless to the Enemy until reconstituted.



The author about to deploy on Exercise while at the Staff College: Photo: Author's Collection, Crown Copyright

2: Stakeholder Analysis

Whether due to organisational familiarity, appropriate and timely training, or clearly explained chains of command, most British Staff Officers are able to decipher where authorities and permissions are held within a UK/Western headquarters. This is unlikely to be the case in an Arab headquarters where authorities, permissions, and decision-making powers can be held by an unknown and unspecified individual outside of one's own Headquarters. In essence, this means that the Arab Commander's presumed authorities are actually held by another senior individual, sometimes not even a senior military officer, in another headquarters, organization, private company or ministry. Sometimes, this means that critical decisions cannot be taken by the Commander in the way that a British Officer may well expect, as the Arab Commander has not been formally empowered to take such a decision.

This lack of institutional awareness on the part of the British Staff Officer can be remedied by, just as he/she would do in the UK, conducting a full stakeholder analysis estimating which stake-holders are likely to hold particular authorities and why the chains of command have been created in such a manner. The British Staff Officer is well served by drawing a diagram of the Arab

Army's HQ with its ORBAT, structure and departments clearly marked. Ideally this diagram should be overlaid with authorisation flows to identify which department 'owns' each permission. To avoid embarrassment, this should be done with absolute respect to the OPSEC of the indigenous Army.

Thereafter, the British Staff Officer can start to be politically deft in how he/she approaches a problem and which solutions he recommends to his Arab Commander. I recall an occasion when my One Star Commander was unable to approve a recommended course of action due to limits on his authority. Having done an estimate on our Two-Up Headquarters, located over one thousand kilometres away in Northern Oman, we made an alternative approach to the Arab 2 Star Headquarters, which led to inroads at the appropriate level, at the appropriate time and in the appropriate way.

3: Mission Command in an Arab Command Structure

Enabling the British Army's command philosophy, Mission Command, within our small team of British Loan Service personnel is challenging. Invariably, empowering British subordinates and promoting initiative, freedom and speed of thought and deed can come up against a more hierarchical indigenous structure and reality.

This means that the British Loan Service team can lose tempo, agility and the ability to unlock fleeting opportunities.⁶ In essence, we find that while a British Warrant Officer has the experience and knowledge, he/she will often lack the access to the Commander to take and approve a decision. Rather than reverting to the methodologies of the surrounding headquarters, there are steps that can empower subordinates while continuing to respect the methodologies and culture of the Arab Headquarters.

We try to empower the British Warrant Officers by giving them the freedom to conceive recommendations and plans. They often present their recommendations to me before I take the refined product and brief the Arab Commander personally. We find that this approach protects the integrity and methodology of the Headquarters, gives the Arab Commander the information that he needs, and enables Mission Command and subordinate development among the British team.

4: Tailor the Doctrine

British Staff Officers are often asked: 'How do you Brits do X,Y or Z?' It is tempting to simply respond by translating British Doctrine, structures and tactics,

techniques and procedures. However, this is rarely appropriate or beneficial for the Arab Commander. British Doctrine has been written to fit our particular circumstances and needs. It is most unlikely that the reality of an Arab formation's DLoDs will be comparable to those of a British formation and, as such, great thought must be applied to how best to modify British Doctrine in order to tailor it for an Arab force. The successful British Staff Officer and his team will therefore understand the requirement, find the British Doctrine and then modify it to fit with the Arab organization's needs, requirements and circumstances. For example, we were asked to assist with the roll out of a new armoured vehicle equipment programme. The Loan Service team did not simply ape one strand of British Doctrine and seek to apply it wholesale to the Royal Army of Oman. Instead, great effort was taken by the team to dovetail the most appropriate sections from British Warrior Doctrine, Infantry Doctrine, and Armoured Cavalry Doctrine to form a coherent, sympathetic and appropriate stand-alone doctrinal recommendation for the new piece of equipment. Despite these great efforts, we occasionally found, to our frustration, that Doctrine may not be held in the same regard in parts of Arabia as it is in our own Army.



Lieutenant General Ahmed bin Harith Al-Nabhani hosts the Staff College Dinner. Photo: Author's Collection, Crown Copyright

⁶ Army Doctrine Publication, Land Operations, AC71940, Land Operations, Chapter 6.4



Lieutenant General Ahmed bin Harith Al-Nabhani marks the conclusion of the Staff College in Beit Al-Falaj, Muscat.
 Photo: Author's collection, Crown Copyright

**5: Leveraging Institutional Capability;
 Not Personal Ability**

The British Staff Officer may have greater access to the Commander than their rank would usually allow. In my experience, this is not because we are considered more able personally or militarily, but because we can provide a particular insight that the indigenous Staff Officers sometimes cannot. Invariably, the British Staff Officer and his team will be employed because they can leverage the British Army's corporate knowledge to the benefit of the Arab Headquarters.

A good British Staff Officer and his team will therefore recognise their unique status, be endlessly polite and respectful to the other members of the Staff to avoid accusations of haughtiness and arrogance, and focus on maximising the British Army's capabilities in service of the Arab Headquarters. In summary, the Loan Service Officer must be humble and respect the culture and traditions of their new surroundings; they must approach each conversation with the right moderate tone; and must never be conceited or hubristic.

6: The Basics

I am forever struck by how well attired Arab forces are. Whether a lowly member of a Levantine militia or a Gulf Arab general officer, they tend to look the exact part that they play – or aspire to play in the future. British personnel must therefore do the same: unkempt hair, ill-fitting uniform, and low standards of personal hygiene immediately and brutally undercut one's credibility. In light of the British military's contribution to shaping and forming the modern armies of the Gulf, it is not surprising that many Arab officers will remark upon any sense of sartorial lowering of standards amongst British military personnel. As such, looking the part, being on time and personable are all force multipliers.

7: Prepare To Be Pleasantly Surprised

Oftentimes, Westerners underestimate Arabs. There are two commonly held Western assumptions regarding Arab limitations: Arabs wilt under pressure and Arabs cannot accept change. I have found both claims to be wildly inaccurate. Firstly, Arabs succeed, often against all expectations and under the most acute circumstances

and pressures. Furthermore, Arabs often succeed far quicker and to a far greater extent than Westerners assume possible. Secondly, Arab societies adapt and change rapidly. Considering the extent, speed and depth of change across these countries and societies over the past seventy years, the contention that Arabs cannot accept change is risible. My observations do not seek to portray Arabia as a panacea, it clearly is not, rather, they remind the British Staff Officer to avoid the simple stereotypes stated by those unversed in the Middle East.

CONCLUSION

It is unlikely that working cheek-by-jowl within an Arab headquarters will suit the temperaments of all British Army Servicemen and women as there are a great many challenges to overcome prior to being accepted and trusted. Yet for those pre-disposed towards the particularities of military service within an altogether

different milieu, it can be truly rewarding. It is perhaps inevitable that the last word must be reserved for the father of UK-Arab partnership, T.E Lawrence, who succinctly conveyed the essence of being a successful British Officer amongst Arab forces: 'Your place is advisory, and your advice is due to the commander alone. Let him see that this is your conception of your duty, and that his is to be the sole executive of your joint plans.'⁷

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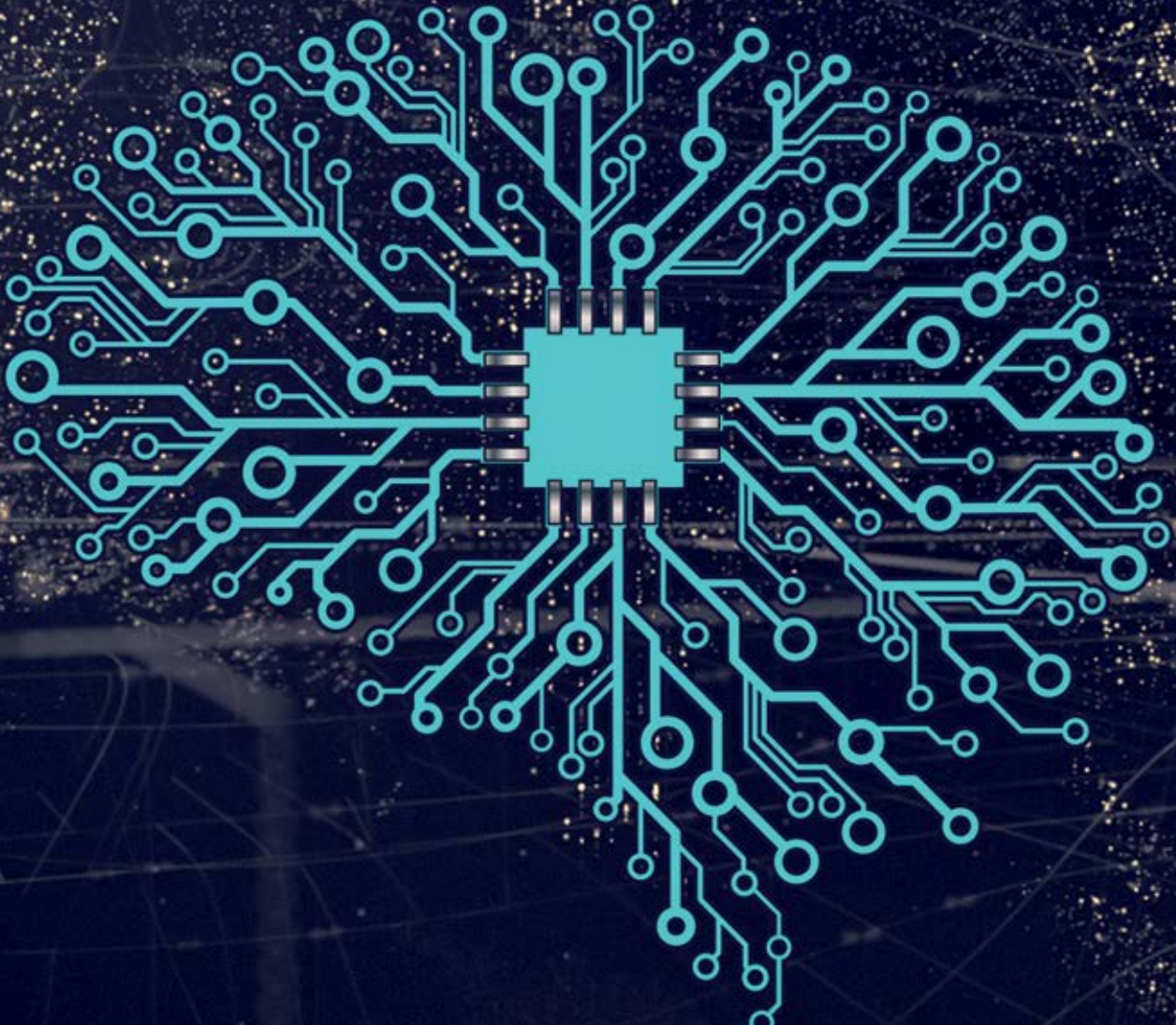


British and Omani armed forces work together on the Fire Power Demonstration, the culmination and final element of Exercise Saif Sareea 3 that showed off a wide range of military capabilities from armoured assault and artillery bombardments to air despatch and helicopter assaults. Also demonstrated was the cohesion and military interoperability which both countries have been working towards during Exercise Saif Sareea 3. Photo: SAC Will Drummee RAF, Crown Copyright

⁷ Lawrence, T.E., *The Twenty-Seven Articles*, 1917, https://wwi.lib.byu.edu/index.php/The_27_Articles_of_T.E._Lawrence

Neuroscience At War

Lieutenant Colonel Gareth Whysall, AGC ETS, British Army Visiting Scholar at the University of Exeter, sketches out a framework for thinking about human performance levels and considers some novel methods that could be employed to improve cognitive performance.



Pictured is an Artificial Neural Net Common visualisation of an Artificial Neural Network with Chip. Image: mikemacmarketing and Liam Huang, Creative Commons Attribution 2.0 Generic license, Wikimedia

When studying the future of conflict the focus tends to be on the technology or tactics used by participants. In the past, these were the only tangible ways that an army might gain a sizeable advantage. Tactics and technology provided the primary focus as, historically, the scope for human performance improvement has been limited. Throughout history states have been limited in how much they could do to improve an individual's physical and mental performance. Advances in science and technology combined with improving knowledge of human biology promise a change to this balance.

The grounds for considering improving cognitive performance are strong.¹ Firstly, the physical and cognitive demands of soldiering are unlikely to reduce. Despite the increasing presence of autonomous systems on the battlefield, the individual soldier will still be required. Second, the very existence of automated systems will increase the pressure on individuals. Sensors and machines need information and demand responses. The cognitive load on soldiers will increase as a result. Finally, the array of sensors and shooters at the disposal of commanders will increase the ability and desire to operate outside of the organic, human rhythm of war. In the past, fighting would stop because environmental or physiological conditions limited the freedom of commanders. Human endurance has often been the factor that stalls operational activity.

Professional sport has benefited from tightly controlled nutrition, training and application of science with bigger, faster or stronger competitors compared to previous eras. The rules and potential punishments of supplement use in sport has meant that the majority of sportsmen and women rely on natural means to make such physical and mental enhancements. Getting the basics right of nutrition, sleep and fitness are important. Whilst our approach to fitness is improving, there is much to be done to improve nutrition and sleep while embracing science in other routine aspects of military life. Current approaches within the Army are not as good as they could be and lack universal application.²

There is a fundamental difference between the professional athlete and the soldier. The soldier is paid to survive, fight and win. As such the Army should not shy away from considering the use of performance improvement methods that would be banned in sports. Using these methods may well attract criticism from some quarters. Such concerns need to be considered but they cannot become the sole defining factor. They are part of a broader assessment that needs to weigh military benefit against a range of costs. I am not advocating an abandonment of the current drugs policy and allowing soldiers to use whatever substances they claim improve their performance. Rather, I believe that there is merit in considering whether some novel interventions ought to be authorised for use by certain soldiers. This may extend to limiting use to specific scenarios but is not something that I will consider here.

OPTIMISATION AND ENHANCEMENT

Visions of the future soldier owe a lot to popular culture. When President Obama declared that the TALOS exoskeleton represented America building Iron Man, he demonstrated the power of popular culture in shaping thinking.³ Future soldiers tend to be described in ways that suggest the battlefields of tomorrow will be populated by, if not cyborgs, then at least imitations of Sgt 'Bucky' Barnes.⁴ Going well beyond the normal human range of performance has become synonymous with enhancement in much of the current popular and scientific literature.⁵ Away from the extreme form of enhancement, I propose, two other performance zones need to be considered.

First is the restorative or therapeutic zone. This entails returning soldiers to the normal baseline levels of performance. That soldiering takes its toll on the body needs no further elaboration. Arguably, the Army has a moral and legal obligation to ensure that this baseline of performance is preserved as far as possible. Optimisation is where an individual is taken to the limits of normal human performance. The boundaries between zones are quite fuzzy. Enhancements beyond the normal human

1 Chérif, Lobna, Wood, Valerie, Marois, Alexandre, Labonte, Katherine and Vachon, Francois, 2018, *Multitasking in the military: Cognitive consequences and potential solutions*, *Applied Cognitive Psychology*, 32 (4): 429-439.

2 Senior officer interview with author. 19 December 2019.

3 *Tech Times*. 2 March 2014, President Obama: 'We're building Iron Man' and it's called TALOS, <https://www.techtimes.com/articles/3880/20140302/president-obama-we-are-building-iron-man-and-its-called-talos.htm>

4 A character from Marvel's Captain America and The Avengers series. Readers unfamiliar with the series should see https://en.wikipedia.org/wiki/Bucky_Barnes

5 Agar, Nicholas. 2014, *Truly Human Enhancement*, London: The MIT Press.



Soldiers prepare to conduct a Soldier Touch Point on the Enhanced Night Vision Goggle - Binocular at the Aberdeen Proving Ground Maryland. Photo: US Army

range cover a substantial degree of improvement. Enabling someone to stay awake for 24 hours without a loss in attentiveness is very different to functioning for a week without sleep. The former is representative of moderate enhancement.

Optimisation and moderate enhancement ought to be the current primary focus for the Army. The technology, such as brain computer interfaces or integrated exoskeletons like the TALOS suits, that might enable radical enhancement is frequently at a low technological readiness state or must be the subject of substantial discussions with policy makers, opinion formers and the broader public.⁶ However, optimisation including moderate enhancement, is more achievable though still subject to many ethical considerations.

There are three broad strategies for performance

improvement; behavioural, biochemical and physical.⁷ The current approach to cognitive optimisation tends to focus on the behavioural. Embracing the biochemical and physical could well provide opportunities to optimise soldier performance through a variety of novel techniques and innovations.

PHARMACOLOGY

Drugs and the military have a long relationship. Whether it be Montgomery's liberal employment of amphetamine in the desert campaigns to ISIS' use of Captagon, commanders and soldiers have found benefit, in performance or morale, in drugs.⁸ That trend continues today albeit on a much reduced scale.

The US military make use of Modafinil, a wakefulness drug for specific air missions.⁹ European states, including Britain, have also investigated its properties.¹⁰

6 The cessation of the TALOS suit was announced in February 2019.

7 Dressler, Martin et al. 2019. "Hacking the Brain: Dimensions of Cognitive Enhancement." *ACS Chem. Neurosci.* 10, 1137-1148.

8 Rasmussen, Nicolas. 2008. *On Speed*. London: New York University Press.

9 Kamienski, Lukasz. 2017. *Shooting Up: A History of Drugs in Warfare*. London: C. Hurst & Company (Publishers) Limited.

10 Wheeler, Brian. 26 October 2006. "UK army tested 'stay awake' pills". *BBC News*. http://news.bbc.co.uk/1/hi/uk_politics/6083840.stm

Other pharmaceuticals, such as ADHD drugs and beta blockers have been investigated by DARPA in the US. ADHD drugs improve attentiveness whilst beta blockers are used to treat PTSD. The military use is clear. Greater alertness, the ability to offset the effects of fatigue or prevent the formation of traumatic memories could all contribute to greater operational effectiveness. Modafinil, for instance, has been found to increase wakefulness and skills associated with planning.¹¹ Pharmaceutical enhancements could support the operational effectiveness of the soldier on patrol as well as commanders and their staff in an HQ.

Using pharmaceuticals for work purposes happens outside of the military. There has been a surge in the reporting of popular use of drugs such as Modafinil.¹² Some studies have suggested that between 3-20% of the population have used some form of pharmaceutical enhancement.¹³ Studies of US and European workers found performance improvement justifying use.¹⁴ One could well believe that pharmacological enhancement is increasingly common. However, flawed methodologies in the studies should lead one to question this assumption.¹⁵ It is possible that some British soldiers are making use of such drugs (they can be obtained from internet sources).



Pictured is a functional near-infrared spectroscopy (fNIRS) by Hitachi. Image: Walej, UCL Speech, Hearing and Phonetic Sciences, Creative Commons Attribution-Share Alike 4.0 International License, Wikimedia

- 11 Turner, Danielle C., Trevor W. Robbins, Luke Clark, Adam R. Aron, Jonathan Dowson, and Barbara J. Sahakian. 2003. "Cognitive enhancing effects of modafinil in healthy volunteers." *Psychopharmacology*. 165 (3): 260-269.
- 12 For example, Archy de Berker and Sven Bestmann. 5 October 2015. "What's the deal with modafinil?" *The Guardian*. <https://www.theguardian.com/science/head-quarters/2015/oct/05/whats-the-deal-with-modafinil-nootropic-cognitive-enhancer>
- 13 Franke, Andreas G. et al. 2014. "Substances used and prevalence rates of pharmacological cognitive enhancement among healthy subjects." *European Archives of Psychiatry and Clinical Neuroscience*. 264, 1, 83-90.
- 14 Sales, Paloma, Fiona Murphy, Sheigla Murphy, and Nicholas Lau. 2019. "Burning the candle at both ends: motivations for non-medical prescription stimulant use in the American workplace." *Drugs: Education, Prevention and Policy*. 26 (4): 301-308. Maier, Larissa J., Michael D. Wunderli, Matthias Vonmoos, Andreas T. Römmelt, Markus R. Baumgartner, Erich Seifritz, Michael P. Schaub, and Boris B. Quednow. 2015. "Pharmacological cognitive enhancement in healthy individuals: A compensation for cognitive deficits or a question of personality?" *PLoS ONE*. 10 (6).
- 15 Schleich, Stephen and Boris B. Quednow. 2017. "Debunking the ethical neuro-enhancement debate" in *Rethinking Cognitive Enhancement*, eds Ruud ter Meulen, Ahmed Mohammed and Wayne Hall. Oxford: Oxford University Press.

In a US study of military personnel, 10% of respondents reported using prescription stimulants. Many respondents claimed to use them for legitimate health reasons rather than work.¹⁶

Whilst there may be evidence that stimulants are increasing in popular use and have an effect on cognitive performance it is far from clear that this is risk free. Studies have shown Modafinil users have a tendency to express over-confidence in their performance levels,¹⁷ while some appear to become less creative.¹⁸ In one study, where divergent thinking was widely held up as a necessity, a lack of creativity in users lead to group think and conformity. An overly confident commander unwilling to consider alternatives could be damaging for operational effectiveness.

With other drugs the known side effects to the user are not worth the performance gain. Nor might side effects be solely limited to the user. Disrupting memory formation to avert PTSD may be counter-productive when soldiers are no longer capable of feeling an emotional response to their actions, which could lead to skewed decision-making. Also, there is little evidence regarding the long term consequences of otherwise healthy individuals using pharmaceuticals. However, given that many of the drugs - for instance Adderall for ADHD - are provided on prescription to children, one might conclude that the long term effects are not serious enough to completely rule out use. Despite this, testing with soldiers on exercise would support conclusions regarding when and who should have access to pharmaceutical enhancement.

BRAIN STIMULATION

Brain stimulation provides another potential enhancement opportunity through applying electrical

current or magnetic fields to specific parts of the brain. Both manufactured devices and Do-It-Yourself kits are available online alongside tutorials for the budding home user. Many within the 'neurohacking' community justify use on the basis of self-improvement.¹⁹

Trials of brain stimulation devices have shown it to aid in restoring baseline performance.²⁰ For example, in a busy operations room the use of brain stimulation may enable watch keepers to remain alert without a reduction in performance levels. Steve Davis and Glen Smith suggest that command and control could particularly benefit from the use of brain stimulation devices.²¹ Stimulation could improve the effectiveness of learning and training.²² The effects do not appear limited to cognitive performance.²³ Sports companies are using stimulation devices to aid performance and recovery.²⁴ Stimulation appears useful in reducing training times and improving recovery rates.²⁵ Shortening a training pipeline ought not to be justifiable grounds for considering the use of brain stimulation as for the most part the benefit is largely one of resource not operational performance. However, using brain stimulation in an operational setting could well be justifiable if operational performance is improved.

Like pharmaceuticals, there are concerns about long-term side effects and the replicability of laboratory studies to field conditions.²⁶ Particular concerns exist regarding the impact of how an externally applied current or field affects other regions of the brain. A number of writers have expressed concern about arguments that conflate external application with safety. It is very tempting to see only the externally fitted device and ignore the reality that the device is having an internal effect.²⁷ There are also practical challenges. It is apparent that to be genuinely useful, stimulation

16 Kennedy, Jennifer et al. 2015. "Prescription Stimulant Misuse in a Military Population." *Military Medicine*. 180 (3S), 191-194.

17 Baranski, Joseph V. et al. 2004. "Effects of modafinil on cognitive and meta-cognitive performance." *Human Psychopharmacology* 19 (5): 323-332.

18 Mohamed, A. D. 2016. *The Effects of Modafinil on Convergent and Divergent Thinking of Creativity: A Randomized Controlled Trial*. *Journal of Creative Behavior*, 50(4), 252-267

19 Wexler, Anna. 2017. "The social Context of "Do-It-Yourself" Brain Stimulation: Neurohackers, Biohackers, and Lifehackers." *Frontiers in Human Neuroscience*. 11, 224.

20 Nelson, Jeremy T., and Victoria Tepe. 2015. "Neuromodulation research and application in the U.S. Department of Defense." *Brain Stimulation*. Vol. 8, 2, 247-252.

21 Davis, Steven E., and Glen A. Smith. 2019. "Transcranial Direct Current Stimulation Use in Warfighting: Benefits, Risks, and Future Prospects." *Frontiers in Human Neuroscience*. 13.

22 Simonsmeier, Bianca A. et al. 2018. "Electrical brain stimulation (tES) improves learning more than performance: A meta-analysis." *Neuroscience and Biobehavioral Reviews*.

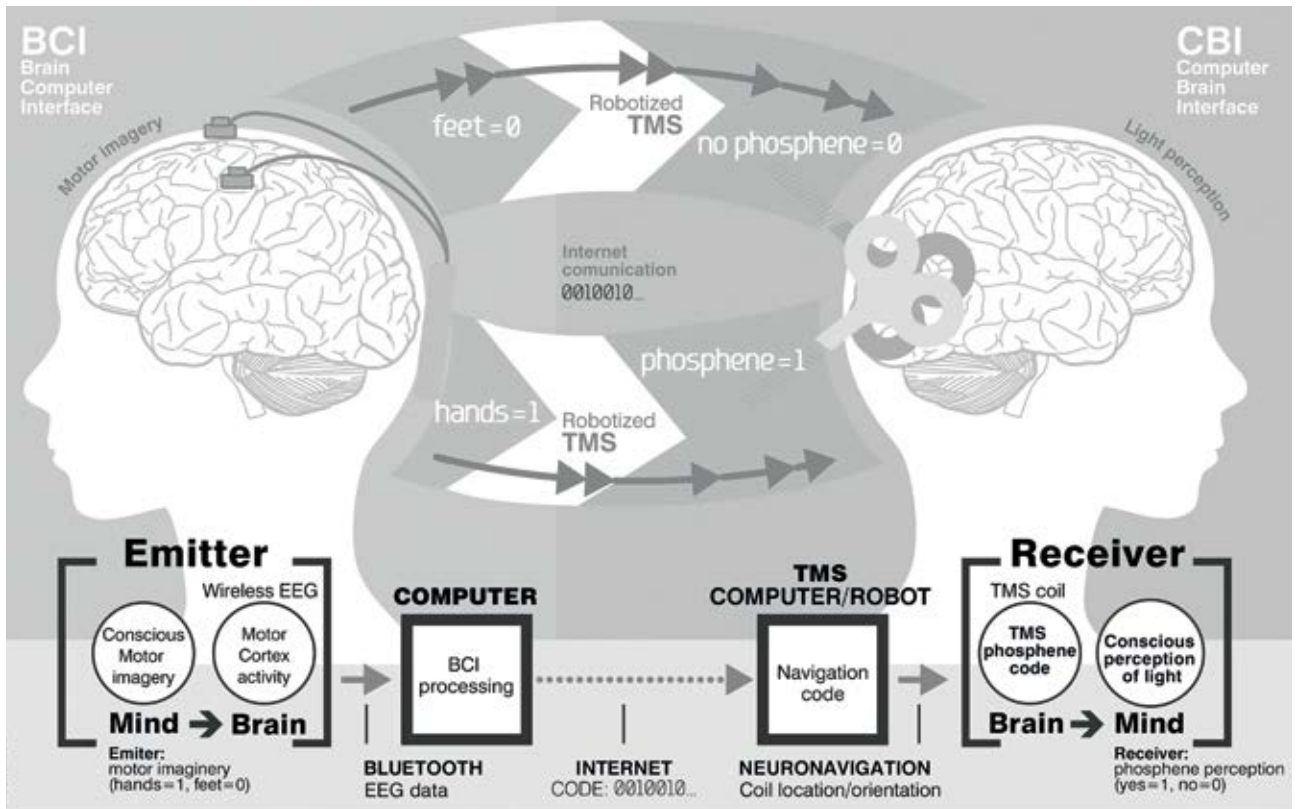
23 Davis and Smith. "Transcranial Direct Current Stimulation Use in Warfighting: Benefits, Risks, and Future Prospects."

24 Hutchinson, Alex. 24 October 2019. "Is Brain Stimulation the Next Big Thing?" *Outside*. <https://www.outsideonline.com/2403893/neurofire-brain-stimulation-tdcs-bike-tour>

25 Davis and Smith. "Transcranial Direct Current Stimulation Use in Warfighting: Benefits, Risks, and Future Prospects."

26 Levasseur-Moreau, Jean, et al. 2013. "Non-invasive brain stimulation can induce paradoxical facilitation. Are these neuroenhancements transferrable and meaningful to security services?" *Frontiers in Human Neuroscience*.

27 Davis, Nick J. 2016. "The regulation of consumer Tdcs: engaging a community of creative self-experiments". *Journal of Law and Biosciences*, 3 (2), 304-308. Roi Cohen Kadosh, et al. "The neuro-ethics of non-invasive brain stimulation". *Current Biology*, 22 (4), R108-R111.



Pictured is a diagram of a Brain-to-Brain Communications System. On the left, the Brain Computer Interface (BC) subsystem is shown schematically, including electrodes over the motor cortex and the EEG amplifier/transmitter wireless box in the cap. Motor imagery of the feet codes the bit value 0, of the hands codes bit value 1. On the right, the CBI system is illustrated, highlighting the role of coil orientation for encoding the two bit values. Communication between the BCI and CBI components is mediated by the internet. Image: Carles Grau, Romuald Ginhoux, Alejandro Riera, Thanh Lam Nguyen, Hubert Chauvat, Michel Berg, Julià L. Amengual, Alvaro Pascual-Leone, Giulio Ruffini, Creative Commons Attribution 4.0 International license, Wikimedia

must be tailored to the individual,²⁸ which may limit the utility of stimulation as costs increase. This would limit the use of stimulation devices to stable locations such as operations rooms or training environments. Studies have suggested that stimulating one part of the brain has a detrimental effect elsewhere. Finally, brain stimulation technology may not be as productive as it is alluring. It is probable that stronger effects on learning are currently achievable through the use of other more mundane methods.²⁹ Studies of brain stimulation have yet to show that it offers a better outcome than achieved using existing techniques.

BENEFITS AND RISKS OF COGNITIVE ENHANCEMENT

Increased speed or accuracy of decision-making, greater attentiveness or longer periods of alertness

are potentially measurable benefits of cognitive enhancements. Other benefits might also emerge that are not so easily measurable. According to Nicolas Rasmussen, prevalent amphetamine use in past North African campaigns appears to owe as much to perceived effects on morale and motivation as it did to a genuinely quantifiable improvement in performance.³⁰ The same may be true of the enhancers available today. Establishing the veracity of the potential benefits requires further research in many areas. With some enhancers, such as Modafinil, the benefits and strategy for use seem clear.³¹ Selecting personnel for moderate enhancement ought to be based on desired outcomes. There are clearly benefits to the soldier on patrol who can remain alert for a long period of time. The same benefit does not exist for a soldier in an administration role,

²⁸ Davis and Smith. "Transcranial Direct Current Stimulation Use in Warfighting: Benefits, Risks, and Future Prospects."

²⁹ Simonsmeier, *Electrical Brain Stimulation*.

³⁰ Rasmussen, Nicolas. 2008. *On Speed: The Many Lives of Amphetamine*. London: New York University Press.

³¹ Minzenberg, Michael J., and Cameron S. Carter. 2008. "Modafinil: A review of neurochemical actions and effects on cognition." *Neuropsychopharmacology*. Vol. 33. 7, 6, 1477-1502.

for instance, even when on operations. It is likely then that not all roles should be considered candidates for moderate enhancement.

History is not especially kind when it comes to the military using pharmaceuticals.³² Regardless of this historical evidence one of the major challenges will be changing people’s perception and addressing the influence of history. Making use of novel forms of enhancement will likely attract attention, much of which will probably be negative. Supporters of novel interventions ask: ‘what is the difference between a drug and having a cup of tea?’³³ Drinking tea is far more acceptable than ingesting a pill because it is more familiar and understood by the general population. Both risk and benefits are known and understood in a way which novel interventions are not.

Addressing these requires significant investigation and discussion. The use of either pharmaceuticals or brain stimulation raises questions ranging from individual consent to the role of military medicine. Table 1 lists potential harms that may arise from the various forms of cognitive enhancement. Understanding these harms is necessary in deciding whether a novel intervention should be used. It is clear that this cannot be a solely scientific or medical endeavour. Rather an inter-disciplinary approach that can address these, and other, concerns is needed. It is for the Army to consider the long-term risk and the short-term benefit together. The short term benefit may be appealing but considering benefits in isolation would likely lead to the use of many techniques that otherwise fall foul of broader ethical, legal and societal norms.

Amongst the noise of competing new techniques it can be easy to forget that there are well-established ways of improving performance. Whilst they may seem mundane compared to images of super soldiers there is a solid evidence base for them. Getting sleep, nutrition and physical activity right may enable the level of performance that is routinely needed for many roles. Novel enhancers could be reserved for when most required depending on the role or scenario. The focus for using novel techniques should be in the area of moderate enhancement and optimisation as the potential performance gains are more credible than the more speculative options frequently associated with enhancement.

The hype, claimed benefits and the sheer ‘magic’ that surround many novel techniques makes them very alluring. But the Army should take a close look at these techniques. Whilst a few may enjoy a robust evidence base, many do not. In many instances, the long-term effects are insufficiently understood to support an informed discussion of the risks and reward involved from usage. The Army must ensure its duty of care remains in place in order to temper the inclinations of soldiers to seek immediate benefit without thought of the long-term consequences.

For the Army, and perhaps broader defence, to consider employing novel interventions in cognitive and physical enhancement it must consider the technique, policy and context of each. Clearly, the risk for the Army in using the more innovative enhancements should be researched so that the potential harms to the user are as low as reasonably possible. Measures must be put in place to

Neurobiological	Ethical	Societal
<ul style="list-style-type: none"> • Seizures • Mood changes • Drug interactions • Skin lesions • Addiction • Zero sum performance trade offs 	<ul style="list-style-type: none"> • Perceptions of cheating • Inauthentic behaviour and impact on identity and character • Access to enhancements • Command responsibilities • Consent and coercion 	<ul style="list-style-type: none"> • Shifting norms • Respect for human variation • Obligations of personnel to enhance • Civil-military relations • Respect for international laws and norms

Table 1 - Potential harms arising from various cognitive enhancement techniques³⁴

³² Kamienski. *Shooting Up: A History of Drugs in Warfare*.

³³ Savulescu, Julian and Nick Bostrom. 2009. *Human Enhancement*. Oxford: Oxford University Press.

³⁴ Adapted from Davis, Nick J. 2017. “A Taxonomy of Harms Inherent in Cognitive Enhancement” *Frontiers in Human Neuroscience*. 11, 63.



Image shows a laboratory rat with a brain implant that was used to record vivo neuronal activity during a particular task (discrimination of different vibrations). The rat is being fed apple juice through a pipette. Photo: Anna Marchenkova, Creative Commons Attribution 4.0 International license, Wikimedia

prevent techniques migrating into the wider force. In order to balance the risk, the Army must have an understanding of the benefits to be gained.

Finally, the Army does not need to consider moderate enhancement for all parts of the force. While this could generate fears of a two-tier force, units are routinely equipped and trained differently depending on operational activity. The Army could use the same approach for deploying innovative techniques to moderate mental and physical enhancements. A conflict such as the Second World War, may change this dynamic and warrant taking greater risk despite the long-term effects. These are not insurmountable hurdles. With the allocation of appropriate resources the Army could enable greater performance levels where required.

In order to improve greater performance levels using moderate enhancement techniques research priorities should focus on the: effectiveness and cohesion of mixed enhanced/unenhanced teams; individual

consent and the Army's duty of care and the impact on military medical practitioners. These need to be properly investigated alongside establishing efficacy and safety. The Army could do this either by itself or in collaboration with Strategic Command and MOD Head Office. Whilst the Army could be the lead user for many of these interventions it is certain that they will have application across the rest of defence.

Combating Sexism and Sexual Harassment in the Army using Feminist Thinking

Captain Al Hynes looks at sexism in the British Army could be dealt with through an understanding of social constructions through the appropriate use of feminist theory.



Pictured is a female soldier from 2nd Battalion The Yorkshire Regiment on Exercise WESSEX STORM. On December 21st 2018 it was announced that infantry roles were now open to women by, then Defence Secretary Gavin Williamson. For more information see <https://www.army.mod.uk/news-and-events/news/2018/12/infantry-final-frontier-of-the-british-army-opens-doors-to-women/>, Crown Copyright

This article addresses reports of sexism¹ and sexual harassment² within the British Army. It contends that feminist thinking can help reduce instances by asking why sexism occurs in the first place rather than by asking 'who?'. The 'who?' question is reactionary as it seeks out people to punish after incidents occur. It does not dig into areas which may cause the problem to start with. And for the Army, these are problems which the most recent report on *Sexual Harassment* within the British Army has made evident.³

WHAT IS THE PROBLEM?

On the face of it, the 2018 report found that over the previous three years there had been a statistical drop regarding a service person's experience of gender-based harassment. This sounds good, but it is an assessment based on the measurement that ninety per cent of the Army is male. When women were studied as a separate group, the report identified that there was actually an increase in reports of sexism and sexual harassment.⁴ The bottom line is that, as a ratio, sexual harassment is mostly aimed at servicewomen and is on the rise.⁵ It is harassment against men (mostly by other men) which has dropped in recent years.⁶ Resolving such problems is complicated by a culture that places 'significant barriers' in front of speaking out due to the 'perceived stigma of making a complaint'.⁷ One crucial outcome benefits from a full quote:

The findings suggest that some sexual harassment, specifically that experienced by women, is part of a wider issue of gender inequality and how women are viewed in society. There were several factors specific to the military, such as the ratio of men to women that have to some extent enabled these views to perpetuate and become part of the military culture. Though not unique to the military, a cultural change is required

*whereby all personnel, regardless of their attributes, are treated fairly.*⁸

I must stress outright that I do not seek to uncover some sinister anti-female component within our organisation's ranks. Probing this institution's gender imbalance is not the same as unfaithfully seeking to shame it nor does the article seek to proportion blame. Instead, we will proceed on the premise that the institution's imbalance has arisen in line with similar societal factors. As the above quote says, given that the British Army amounts to a 9:1 ratio of men to women, compared to the 1:1 split in British society, the issues surrounding sexism are understandably elevated. So, suggestions that the Army is deliberately sexist do not help persuade necessary members that there are aspects of our culture in need of reflection; it would only entrench the institution's already sceptical attitude towards gender-based rhetoric. Of course such views are not exclusive to the Army and attempting to gauge the sexist value of any person's genuine attitude is difficult.

A recent YouGov poll supports the idea that men and women do not, by nature, think differently (only 33% believed they do⁹) whilst another supports the increase in paternity rights to allow women better career prospects following childbirth (only 18% were against the idea).¹⁰ However, a cursory look at the subject under the guise of internet anonymity reveals a lot. Journalist Jon Ronson covers this issue in *So You've Been Publicly Shamed*, which looks at how people are targeted online. At one stage it becomes clear that abuse aimed at degrading a man's worth revolved around intimidation toward unemployment and job loss. For women, abuse was predominantly sexually based, notably with threats of rape.¹¹ In a similar vein, comment feeds under news media articles on Women in Ground Close Combat

1 Giordano, C., 'Army chief attacks 'unacceptable' behaviour of troops in unprecedented video', *Independent* [online], Available from: <https://tinyurl.com/yyc6ommq>

2 Bond, D., (2018). 'British army chiefs pledge action on sexual harassment', *Financial Times*, [online], Available from: <https://tinyurl.com/y9zp3tnw>

3 Markson, H., (2018), *An investigation into the nature, prevalence, prevention and management of sexual harassment within the British Army 2018*, British Army, British Crown Copyright: UK.

4 Markson, H., (2018), p.4.

5 *Ibid.*

6 Note: this is of course still an issue in and of itself, but not the point of my article

7 *Ibid.*: 5.

8 *Ibid.*

9 YouGov, (2019). *Do you think women or men generally tend to be less tribal?* Available at: <https://tinyurl.com/uae9klm>

10 YouGov, (2019). *Do you think that giving fathers the option of more time off work would or would not help mothers return to work and maintain their careers after childbirth?* Available at: <https://tinyurl.com/wwnbp6t>

11 Ronson, J., (2015). *So You've Been Publicly Shamed*. Picador: UK. p.121.



Pictured are personnel from the Army's campaign to demonstrate its inclusivity which coincided with National Inclusion Week. Launching a video under the title 'Unique and United', the British Army acknowledges the diverse backgrounds of its personnel in order to illustrate how the Army embraces the principles of Diversity and Inclusion. Photo: Corporal Jonathan Lee van Zyl, Crown Copyright

(WGCC) are commonly negative to the idea. In a 2016 *Telegraph* article announcing the move to full employment¹², many commenters wrote about the unnecessary time, effort and cost to accommodate female soldiers or the fact, for example, women get pregnant.

The point here is why such an immediate line of inquiry exists at all. We can acknowledge that a utilitarian approach could very easily suggest that ten per cent of its people require an illogical use of resource to reform a functioning status quo. More fiscal-based arguments also suggest that the cost of enabling WGCC is an ineffective use of money in the first place. Such an argument was recently published by Dr Joanne Fallowfield in a study for Cambridge University on *The Cost of Women in Ground Close Combat Roles*. She not only concluded that costs over the coming decade are estimated to be around £50 million, but that these costs would be accrued with little impact on combat-soldier recruitment levels in any case.¹³ In this sense, it could seem rational to suggest against WGCC since a minority of people are generating an inordinate amount of disruption in time, energy and money. However, I do not believe that most of these arguments derive from any in-depth study like that of

Fallowfield, but more from an aversion to the understood notions of identity and blurred gender roles.

Institutional approaches to equality, without a cultural approach in support, will fail to address sexist attitudes and will result in a politically unacceptable repeat of findings in the next batch of reports on sexual harassment due in 2021. Feminism offers a way of achieving the necessary cultural support.

A QUICK HISTORY

Feminism has a long, controversial, but largely misunderstood history. In fact, because of its large scope it is in many ways defined by disagreement within its ideas and ranks.¹⁴ Unfortunately, this is why feminism's most sensational aspects have become the most remembered and why it is viewed by some as 'anti-male'. For every 'wave' that there has been, the important areas of progress and change are commonly perceived through parody or mischaracterisation. It is important to briefly address these waves and highlight what feminist agendas have actually achieved, rather than niche incidents they are remembered for. Loosely split into four waves running, they are:

¹² Farmer, B., (2016). 'Women to serve in Combat in British Forces'. *The Telegraph*. [Online]. Available at: <https://tinyurl.com/supf73z>

¹³ Fallowfield, J., 'The Cost of Women in Ground Close Combat Roles', In Matthews, R. (2019), *The Political Economy of Defence*. Cambridge University Press: UK, p.352.

¹⁴ Grayling, 2019: 466.

1. First-wave feminism: Positioned loosely at the turn of the 20th century, it was the successful attempt to rectify legal and franchise deficits within society that placed women beneath men as entities within the political and judicial system. Women during this period fought for basic legal equality such as a voting, education and property rights.¹⁵ Where the first wave saw (some) British women ultimately receive the vote in 1918, it is the Suffragettes that have come to symbolise the era. The feminist narrative of this era is prominently remembered through radical action such as Emily Davison jumping in front of the King's Horse at the 1913 Epsom Derby.¹⁶ **This has inaccurately set a precedence that feminism is militant.** Few would question whether first wave feminism's goal of basic legal rights on parity with men has stood the test of time.

2. Second-wave feminism: This was an extension of the first wave. During the 1960s-1980s, it sought to promote further institutional equality with the added importance placed on 'invisible' shortfalls. To name a few, these were areas such as the family entity, reproductive rights, marital rape and domestic violence.¹⁷ There are still many aspects of its agenda left unfinished. Marital rape, for example, was not criminalised in 1991 and today, according to a recent 4000-strong YouGov poll, 24% did not view non-consensual sex in marriage as rape.¹⁸ Nevertheless, the second wave made great gains for both social and workplace equality but is often recalled through events such as the 1969 Miss America protest. This event saw women discard or destroy items such as make-up, fake lashes and bras to highlight the standards that they felt (and still feel) women are pressured to uphold for the pleasure of men.¹⁹ A high profile instance of 'bra-burning' lingers to this day as a trope attached to feminism.

3. Third-wave feminism: Starting in the 1990s, the third wave is largely characterised by its breadth making it difficult to summarise and therefore easy to exploit through the selective presentation of its most radical aspects. The third wave extended attention to all areas of the female experience. The main intent was

to balance the cultural aspects of sexism that persisted in a society that was no longer structurally divided. An example of this is the debate surrounding the gender-wage gap between men and women (in similar roles) or the lack of women in positions of power such as businesses or politics. In many ways, it is about finalising the institutional deficits that require a cultural change to fully rectify.²⁰

4. Fourth wave feminism: Launching over the last decade, it is predominantly, as always, an extension of the last wave. It has a focus on sexual harassment, rape culture and ideas of body shaming.²¹ The #MeToo movement is an example of the fourth wave. Kate Harding's *Asking For It* addresses fourth wave issues, highlighting negative attitudes surrounding sexual consent by emphasising the use of language that unconsciously justifies harassment. She offers examples like song lyrics such as Robin Thicke's *Blurred Lines* ('I know you want it, but you're a good girl?') and advertising campaigns like Belvedere Vodka's 2012 tagline: 'Unlike some people, Belvedere always goes down smoothly.' This quote was 'superimposed over an image of a frightened-looking woman trying to escape a man's clutches'.²² It received serious criticism of course, but when linked with a statistic from the same YouGov poll mentioned above, 33% of men surveyed do not believe rape occurs if there is no violence involved or if the women were initially flirtatious.²³

Time will give a better understanding about what the last two waves have or will achieve, but what they all have in common is the overall aim to increase awareness of gendered aspects in society and to rectify them. Yet, too often feminism's most benign and earnest intentions are overshadowed by the few instances of sensation, in turn, exploited by (social) media representation. To that end, the application of feminism to the military should be viewed as a way to build upon the foundations of institutional equality and the century-long journey from the days of the Women's Auxiliary Corps of World War One to a fully open institution lacking structural barriers.

¹⁵ Melanie, P., (2004). *The Ascent of Women*. Abacus: UK.

¹⁶ Tanner, M., (2013). *The Suffragette Derby*. The Robson Press. UK. p.214-215.

¹⁷ Burkett, E., (2020). *Women's Rights Movement*. Britannica. Available at: <https://tinyurl.com/ums7raq>

¹⁸ EVAW., (2018). 'Attitudes to Sexual Consent'. Available at: <https://tinyurl.com/y7wxe84w>: 3.

¹⁹ Buchanan, P., (2011). *Radical Feminists*. Greenwood: USA. p.124.

²⁰ Brunell, L., (2020). *Feminism*. Britannica. Available at: <https://tinyurl.com/yxx4v0apn>

²¹ Ibid.

²² Harding, K., (2015). *Asking For It*. De Capo Press: USA. Kindle Ed. Loc. 202-219.

²³ EVAW, 2018: 3

HOW GENDER SHAPES BEHAVIOUR

The ideas shaped by the concept of gender define feminism.²⁴ Often misused, gender is not, or rather should not be, a label to identify sex. Gender draws 'a distinction between biology and the *masculine* and *feminine* attributes and status that society ascribes to being male or female'.²⁵ It is a term used to highlight the social constructions that have developed throughout history because of a person's sex. Blue for boys; pink for girls, is a simple (Western) example. These constructions, known as *gendered norms*, have fashioned within cultures and institutions attitudes and values for what it means to be either a man or a woman. The significance of this is how they have conditioned societal thinking toward concepts of *nature* and *nurture*. Because of this, there has been confusion between the two that has generated deeply-rooted assumptions for how men and women must or will behave. Another way of phrasing this is 'performing' gender roles: imagine a doctor and a nurse or an executive and their personal assistant. Social norms dictate what each has been assumed to be.

Sandra Harding outlines two zones she believes men and women have historically been placed into: the idea that it is 'natural' for women to be 'caregivers' while men are 'breadwinners'.²⁶ Similarly, in the context of the Army, Simone de Beauvoir famously questioned the identity of 'men as 'just warriors' and women as 'beautiful souls'.²⁷ Such differences, rather than being pre-determined by biology, are instead social conventions that have developed within society over time.²⁸ Paul Higate's *Military Masculinities* delivers a critique of the contemporary situation regarding male and female divides, highlighting just how engrained such conventions have become in assuming that 'military' must equal 'man'.²⁹ It stands to reason that these conventions remain less biological issues in the modern context but more 'matters of politics and social organization, gender and sexuality, violence and violation'.³⁰

Simply put, the ban on women serving in the infantry until recently was for reasons which physiology has received an inordinate amount of blame for. No doubt,



Pictured are male and female Tri-Service and MOD Civilian personnel. Seen here in a break out area adjacent to the canteen in MOD Main Building in London. Photo: Owen Cooban/Harland Quarrington, Crown Copyright

24 Tickner, J., & Sjoberg, L., 'Feminism', in Dunne, T. Kurki, M. & Smith, S. (2013). *International Relations Theory*. OUP: UK. p.180.

25 Fine, C., (2017). *Testosterone Rex: Unmaking the Myths of Our Gendered Minds*. Icon Books Ltd: Kindle Edition. p.25.

26 Harding, S., (1986). *The Science Question in Feminism*. Cornell University Press: USA. p.17-18.

27 Elshtain, J. B., Tobias, S. T., (1990). *Women, Militarism, & War: Essays in History, Politics and Social Theory*. Rowman & Littlefield Publishers: USA. p.341.

28 Carroll, B., Hall, B., 'Feminist Perspectives on Women and the Use of Force'. In Howes, R. Stevenson, M. (1993). *Women and the Use of Military Force*. Lynne Rienner Publishers: UK. p.19.

29 Kovitz, M., 'The Roots of Military Masculinity', in Higate, P. (2003). *Military Masculinities*. Praeger: UK. p.9.

30 Hearn, J., 'Foreword', *Ibid*. p.xiii.



Pictured are UK personnel before an assault at Skrunda 1 in Latvia with UK and Latvian Marine forces during Baltic Protector deployment. Baltic Protector deployment is a multinational task group of nine nations including the UK, Denmark, Estonia, Finland, Latvia, Lithuania, the Netherlands, Norway and Sweden and is part of the Joint Expeditionary Force (JEF). Photo: PO(Phot) Si Ethell, Crown Copyright

man's central position in warfighting is an established one. It has a deep historical basis formed around many factors such as religion, culture and indeed biology and I do not see much value in applying revisionist judgement on that fact simply because modern perceptions view it as discriminatory. However, it is important to note that today's attitudes toward female military employment are nonetheless preconditioned by this long-standing precedent which holds that *men* fight wars. There is not enough recognition given to social constructions as to why divides such as these exist, and *why* they should not be retained simply because it is an unconsciously recognised status quo.

Helen Carreiras's *Gender and the Military* directly addresses this debate. Her work 'asks not only how some societal factors influence military policies on women's integration...but also to what extent military organizational practices are patterned through gender lines'.³¹ Carreiras pays particular attention to beliefs held within western cultures that restrict societies from perceiving soldiers as

anything other than heterosexual men. Equally, she looks at institutional dynamics that challenge or inhibit the integration of female soldiers...and argues that the cause of social aversion to female participation is fundamentally one of unease by men in the reduction of masculine self-worth; 'the image of women warriors has been seen as inherently unsettling, entailing a symbolic rupture with the dominant gender order'.³²

So, when it comes to general attitudes in the Army between the sexes, my stance is that they are a cultural byproduct of a societal history that has deeply entrenched a link between masculinity and war. In many ways, sexist attitudes may be a product of unconscious action rather than malign intent. In my opinion, with this understanding, the approach needed to counter sexism is, therefore, one of education and not blame (depending on the severity, of course). And so, liberal feminism is offered as a useful perspective that can cooperate with ideas that society has formed as they have over a very long time, with no one necessarily at the helm guiding

³¹ Carreiras, H., (2006), *Gender and the Military: Women in the Armed Forces of Western Democracies*. Cass Military Studies, Routledge: UK. p.23

³² *Ibid*: 4.

its direction. This is because instead of attempting to achieve large scale and rapid restructuring of systems and structures (that would be radical feminism³³), it often takes the world as it is. A *liberal feminist* approach would attempt to reform unequal aspects of an organisation from the basis of how it already exists by calling attention 'to the subordinate position of women' where relevant,³⁴ such as women being totally banned from one of its echelons. Liberal feminism seeks 'to provide women with rights and opportunities equal to those available to men'.³⁵ However, such an approach can only bring the education so far. This is by and large *institutionally* achieved in British society (through legal enforcement) and so the focus must now be on achieving it culturally, especially in the Army.

This is the gift of *feminist constructivism* and how it offers a way to investigate the more subtle aspects of inequality within the culture of the military workplace. Feminist constructivism also rarely falls into fallacies linking sex to a 'natural way of things' because it accepts that nurture is often indistinguishable from nature due to the way we construct our language. Therefore, the areas of life that confuse the two must be uncovered. So, because of their practical merits outside of theoretical or philosophical debate, *liberal feminism* and *feminist constructivism* are the suggested approaches for any education, were it to occur. This is because the shift from a segregated Army to one of full inclusion is almost by definition parallel to the intent of liberal feminism. So too is the idea of uncovering biases within our Army's culture found within feminist constructivism. I propose then that the method to tackle sexism should not focus primarily on *who* is at fault (though there is certainly a time and place for discipline), but *why* it occurred at all.

APPROACHING SEXISM IN THE ARMY

There is a difference between asking *why* something is a problem and *who* the problem is. Asking *why* could uncover *who* without hindering reflection through driving the very individuals needed for change into a defensive corner. In some cases, the response to asking why may deliver a reasonable answer for an existing gendered dynamic in the first place. *Why*, for example, the infantry will likely remain heavily populated by men is quite fairly explained by a basic understanding of human physiology, given the arduous job role. *Why*, on the other hand, the

infantry had not permitted even a single capable woman to join at all, until recently, is a very different question and one entirely based on culture. Such attitudes are society-wide and come from both service persons and civilians (both male and female); they are rooted in societal mindsets toward military identity. An awareness for *why* there exists an organisationally-defined culture that acknowledges women more in line with traditional (constructed) feminine roles is an important first step in understanding why employment in all areas of the Army is not enough to prevent sexist behaviours. To be sure, the long-term maintenance of the ban on female combat soldiers until 2018 has very likely conditioned many generations, male and female, to accept the idea of a male soldier as a natural aspect of the organisation. Indeed, social constructions can run so deep that women, especially military women, have been noted to strongly uphold them too.

An instance is former Army Officer Kate Medina, who wrote a 2016 article for the *Telegraph* titled 'Putting women soldiers like me on the front line is dangerous - blame our biology'.³⁶ Writing at the time of the Islamic State's regional advance, Medina questioned whether 'we', as a British public, are ready 'to see our daughters' gang-raped, tortured and decapitated live on the Internet'. She asserted that such horrible events were 'exactly what will happen if a female front-line soldier is captured'. She attempted to link a potential eventuality to the fact that women are physically weaker than men, thereby suggesting that female inclusion in the combat arms should be wholly prevented as a principle. It also suggested that the public is in fact 'ready' for such instances to happen to men; an illogical argument that appears to value female life over male life. The reason, I suggest, is conditioning developed through experiences defined by our masculine culture, resulting in women conforming to ideas of male exceptionalism. In other words, as Caroline Perez calls it, 'brilliance bias'.

This is where young children from the age of six begin to develop an understanding of gendered social constructions because of the way society unconsciously upholds them. It leads many girls and boys to believe in ideas like male superiority in fields such as science and, of course, military duties.³⁷ The fact that these ideas have become clichés in society only goes to show how

33 Willis, E., (1984), 'Radical Feminism and Feminist Radicalism. *Social Text*. Vol. 9. No. 10. pp.91-118.

34 Tickner, J., & Sjoberg, L., 'Feminism', in Dunne, T. Kurki, M. & Smith, S. *International Relations Theory*. (2013). OUB: UK. p.182.

35 Carroll & Hall, 'Feminist Perspectives Women and the Use of Force', in Howes, R & Stevenson, M. (1993). *Women and the Use of Military Force*. Lynne Rienner: USA. p. 18.

36 Medina, K., (2016), *The Telegraph* [online]. Available at: <https://tinyurl.com/y5ldclre>

37 Perez, C., (2019), *Invisible Women*. Chatto & Windus: UK. p.101.



Pictured is a female soldier assisting at the NHS Nightingale Hospital in Harrogate, North Yorkshire in the battle against the coronavirus. Photo: Jude Palmer, Crown Copyright

genuinely ingrained they are. University initiatives to recruit women into STEM³⁸ courses, is a result of generational bias in our education system.³⁹

I am not denying biological facts between men and women - the key one being that most men are more muscular, larger and therefore stronger than most women. Instead, I offer that the binary male/not-female approach to employment which defines the history of the British Army has developed attitudes now cemented into beliefs confusing gender-roles with sex. Feminism seeks to emphasise the obvious and unconscious ways in which men and women act and interact and this is the exact approach required to enable a culture within the British Army that does not divide members into the 'soldier' and the caveated 'female-soldier' camps. As these social constructions become clearer within British society, many of the performed gendered behaviours are being increasingly flagged as sexist behaviour. Sexism, however, is a loaded term and is often used with the intent to harm the character of the person

accused. It is a term commonly defined as the separate treatment of a person based on their sex.⁴⁰ However, one must recognise that the societal understanding of sexism has developed in line with feminism. What was once considered a chivalrous act may now meet the definition of sexism. Indeed, something as simple as a male serviceperson apologising for the use of bad language, due to the presence of a female serviceperson, is by definition an example of sexism and it matters not if the act is designed for a perceived good intent. Yet, labelling that person as sexist is not the correct move due to how loaded the term is when the action is not malicious, just misunderstood or even well-meaning.

The takeaway point here is that any change in approach must be rooted in a cultural shift rather than simply institutional recognition of the need for adjustment. This will take time given the gender-based norms that pervade society. The best approach to such actions is not to declare the person making them sexist, but to highlight the underlying reasons why such ideas do not hold up to scrutiny. If accused of sexism based on engrained behaviour, given the power of the term, it is quite natural to reject such allegations. Often, what follows is usually a defensive reaction aimed at maintaining personal innocence; 'but I treat everyone equally'. Alternatively, the term 'sexist' is simply dismissed as an example of "political correctness". In most day-to-day cases, I believe this sort of defence often comes from an honestly held belief in one's virtuousness, but one unconsciously hampered by adherence to long-developed social constructions. This is the basis of what it means to be affected by unconscious and cognitive bias as a natural aspect of human thinking. We should not feel hard done by, if, in any given instance, we are not all-knowing about every aspect of the world.

SUMMARY

What I have attempted to show are very pithy aspects of feminism for an institution not conditioned or structured for its philosophy by default. Feminism immediately evokes ideas controversial to a male-dominated arena like the Army but feminism's mischaracterisation and sensational representation in greater society is nonetheless all too damaging. Highlighting gendered norms often leads to defensive reactions by those who subconsciously attach personal guilt to societal level issues; if taught to an audience like that of the service person, the necessary tone would have to be judgement-

38 Science, technology, engineering and mathematics

39 Manchest Digital. (2020). '82% of women working in tech never encouraged to take up STEM at school'. FENews [online]. Available at: <https://tinyurl.com/y8v2e6dj>

40 Oxford English Dictionary.

free. No one should be placed at fault innately for attitudes stemming from the social constructions that currently exist. Yet they could be held accountable for them if educated yet still refuse to embrace progress. The denouncing of an opinion which could be taken as sexist would benefit (when appropriate) not from discipline but further discussion. The indiscriminate use of '-ist' labels like 'sexist' builds walls but honest discussion can break them down.

In many other instances, support for equality may be stated despite a person's own deep conditioning that may not even be known to them. The common refrain usually looks like this: 'I'm not sexist, but...' Pointing this out may feel awkward, but if done astutely, it allows for potential internal revelations to manifest. This can be achieved by correctly offering feminism's deconstructive theories, its positive history and by decrying its myths. Feminism is by no means an elixir to all gender issues, nor should its faults be sugar-coated, but feminism should not be dismissed outright as a method to highlight areas of military culture, which are holding us back from progress.

Clearly, due to long-standing legacy and societal reasons, perfectly tackling sexist issues within the British Army is a wicked problem. It cannot be achieved through a single PowerPoint presentation⁴¹, though it is a great start and will require a long-term exercise in gender awareness. The controversy around sexism is not a good enough pretext for military silence on the issue, nor criticism. Feminism offers a lot of value and is simply about basic reflection on why things are the way they are, and whether they have to be that way. If we constantly seek out who is breaking our values and standards without wondering why they may have been conditioned to think that way, we will never get to the root of the issue.



41 Goldthorpe, S., (2018), 'Field Army chief sets out his vision ahead of females entering ground close combat'. *Soldier*. Aug 18. p.3.



Pictured are England's Under 20s Women's World Cup Football Team, seen here with the Royal Marines Commandos in Lympstone, as part of their build up to the 2019 FIFA Women's World Cup. Photo: LPhot Ken Gaunt, Crown Copyright

HM Sultan Qaboos of Oman (1940-2020)

Simon Anglim, a regular BAR contributor, remembers the life of HM Sultan Qaboos of Oman.



Pictured is the Omani Coastal Regiment conducting an amphibious raid at Raz Makaz, Oman during Exercise Saif Sarreea 3 (SS3) with British Army personnel. Photo: PO(Phot) Si Ethell, Crown Copyright

The death of His Majesty Sultan Qaboos bin Said al bu Said of Oman was announced on 10 January 2020, marking the end of an era for Oman, the Gulf and the Middle East. Qaboos was the longest-serving leader in the Arab world, ruling Oman for almost fifty years, and it is estimated that some ninety per cent of Omanis have known no other leader.

He had been fighting cancer for several years, spent eight months undergoing treatment in Germany in 2015-16 and less than a month before his death returned from Belgium following further tests, a trip made shortly after one of his last public appearances, a meeting with Prince William.

Dozens of world and regional leaders arrived in Oman's capital, Muscat, over the following days to pay condolences to Qaboos' hand-picked successor, his cousin Sultan Haitham bin Tariq. An indicator of the respect held for Qaboos was that many of these were rivals if not bitter enemies, with delegations from Yemen and Qatar alongside those from Saudi Arabia; and Saudis alongside Iranians; Hamas alongside the Palestinian Authority; the current Iraqi government alongside members of Saddam Hussein's family; and the families of both President Sisi and ex-President Morsi of Egypt. This reflected Qaboos' policies not only of strict neutrality in the region's conflicts - of being 'friend to all and enemy to none' - but of acting as honest broker in many of them.

The Prince of Wales and the Prime Minister, Boris Johnson, headed the British contingent in person, reflecting the close connections between Oman and the UK, going back 200 years, and the regard in which Qaboos was held personally at the highest levels of the British government. This was founded on a six decade-long relationship in which the British Army was involved intimately at times.

Qaboos - only son of Sultan Said bin Taimur, ruler of what was then Muscat and Oman - arrived in England in 1957 aged sixteen, his first trip outside his home country. After two years of sixth-form study and work on his English (a language he came to speak with eloquence), he spent what was, purportedly, an unhappy two years at Sandhurst followed by a tour as a Second Lieutenant with the Cameronians in Germany. After touring the UK observing various aspects of national and local government in action, he returned home on his father's orders in 1965.



The Sultan Qaboos bin Said Al Said taken during a visit by U.S. Secretary of State John Kerry in Muscat, Oman, on May 21, 2013. Photo: US State Department photo/Public Domain

Said had intended Qaboos to gain a degree of Western education and knowledge of government, which seems paradoxical, given Said's own style of rule. Oman was tied to the UK by a series of treaties going back to the early nineteenth century, intended at the time to guarantee its place in the protective cordon around India. This placed the British in effective charge of Oman's foreign, defence and fiscal policy, with its small army officered largely by former British officers contracted directly to Said and commanding a mixture of Arab and Baluchi troops. This relationship was intensified in the 1950s thanks to Oman's geopolitical position, dominating the southern shores of the Straits of Hormuz and prospects of oil wealth of her own. Said was determined to relieve Oman of Britain's financial control and from his accession in 1932 ran an austerity programme like no other, restricting public spending almost to zero and in doing so, keeping his country in the dark ages; when Qaboos departed for England, there were just two small hospitals in the whole of Oman - a country the size of Great Britain - just two secular secondary schools and three miles of metalled road, all in or around Muscat. Outside this small zone, and the RAF bases at Salalah and Masirah, Said's subjects were cut off from the world in the most crushing poverty, medieval diseases such as leprosy still being prevalent in parts of the interior.

It is unsurprising, therefore, that Qaboos' early life and the first part of his reign were shaped by armed rebellions directed at his father. In the 1950s, with Saudi encouragement, tribesmen in the north rallied around the figurehead of Imam Ghalib bin Ali, traditional ruler of the country's interior, seizing control of a large part of northern Oman and cutting off Muscat on the coast from areas being prospected for oil in the interior. It took four years and extensive British military intervention, including the aforementioned Cameronians and 22 SAS plus some major bombing by the RAF to put this down. This was supported by a long-term agreement with London by which British Army officers on attachment would hold almost every command appointment above platoon level within the new Sultan's Armed Forces (SAF) the Commander, Sultan's Armed Forces (CSAF) being a serving British colonel (later raised to brigadier, then major general).

By Qaboos' return a bigger, far more dangerous insurgency, increasingly dominated by communists backed by the USSR and China, was erupting from Dhofar, in southern Oman. Said was still unwilling to spend adequately even on the SAF and believed the rebellion could be crushed through terror alone. Kept under virtual house arrest near his father's palace in Salalah, Qaboos observed all this with growing horror and opened secret contacts with the UK asking what Whitehall's attitude would be were he to overthrow Said. Worn out by fifteen years of failing to get Said to change his ways, Whitehall gave Qaboos its subtle encouragement, leading to the coup of 23 July 1970, the CSAF, Brigadier John Graham, providing troops to support the plotters while the CO of the SAF's Desert Regiment, Lieutenant Colonel Teddy Turnill, entered the palace to detain Said and bundle him off to exile in London after a short firefight.

23 July is commemorated in Oman as National Renaissance Day, the birth date of the modern Sultanate of Oman. Oman remained a strong autocracy as Qaboos effectively wrapped his father's iron fist in a velvet glove but startling changes in society and economy began almost immediately, Qaboos lifting almost all Said's financial and social restrictions and spending Oman's oil wealth on an ongoing development programme lasting to this day. This is his main legacy - in 2010, the United Nations ranked Oman first in the world in advancement up the Human Development Index over the past forty years and in 2019, Oman had a 96% literacy rate with life expectancy at 77 years with free education and healthcare for all citizens. It is also an island of multi-cultural tolerance, safety and stability in a region not known for those things, most official indices putting the



Military ties with Britain remained close. Qaboos' reforms at last presented Oman with a better narrative than the Dhofar rebels' but it was still necessary, as the statement of intent put it, to 'secure Dhofar for development'. Victory came eventually via a military coalition commanded by the British CSAF incorporating Pakistani, Iranian and Jordanian troops alongside Omanis and British, including 22 SAS (again), and pilots



Image shows a British soldier showing a staff sergeant of The Royal Army of Oman Artillery around the inside of a British Army AS90 Self Propelled Gun of the Royal Horse Artillery (RHA) during Exercise SAIF SAREEA 3 (SS3). The MOD deployed over 5500 troops to Oman for SS3, the third time that the British and Omani's have trained together. Photo: Corporal Mark Lamer, Crown Copyright

from the RAF. Although the SAF have been completely 'Omanised' since the 1990s, up to a dozen Omani cadets at a time still attend Sandhurst and Cranwell, the British and Omani armed forces train alongside each other regularly and the UK remains an important supplier of

equipment to the SAF, including a current complement of 38 Challenger 2s and twelve Typhoons.

While Qaboos had no children, he will be remembered long - and deservedly - as the Father of Oman.

You can't do much training here; It is all bloody jungle

Lieutenant Colonel Mike Tickner looks at the transformation of the British Army in India and how it was instrumental in turning defeat into victory.



Two British soldiers on patrol in the ruins of the Burmese town of Bahe during the advance on Mandalay. © IWM SE 2138

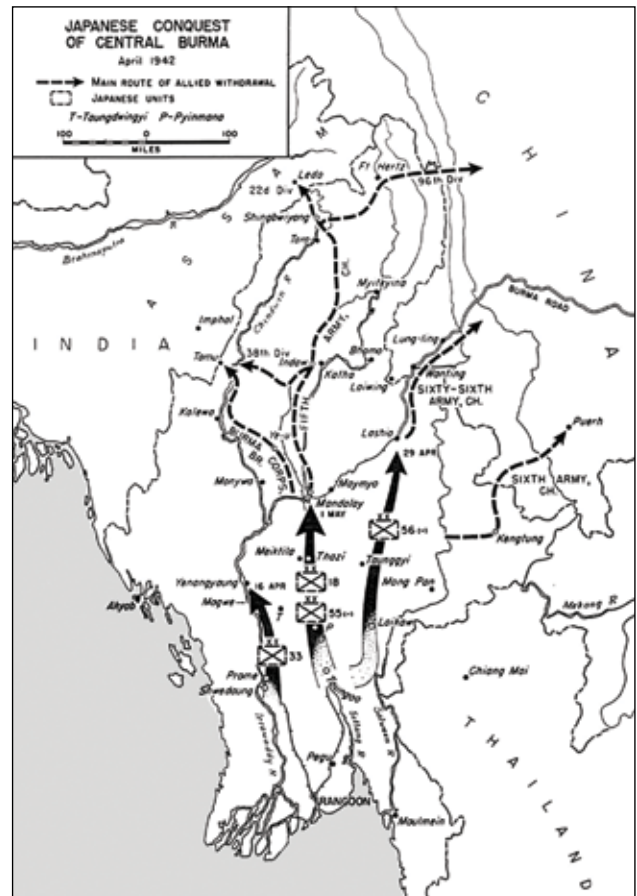
*In principle there is nothing new in jungle warfare, but the environment of the jungle is new to many of our troops. Special training is therefore necessary to accustom them to jungle conditions and to teach them jungle methods.*¹

In the late Spring of 1942, retreating Indian and British troops started arriving back in India following a disastrous and humiliating campaign against the Japanese in Malaya and Burma. The Japanese appeared unstoppable and the invasion of India seemed imminent. To avoid a further defeat, fundamental changes were urgently needed in how the British Army in India was commanded, trained and operated. However, by the spring of 1945, Allied fortunes had been reversed and it was now a broken Japanese Army in full retreat from Burma. This could not have been achieved without the wholesale transformation in training and command.

DEFENDING THE FRONTIER

During the inter-war years, the Indian Army was the most operationally focused of the UK's imperial forces with constant operations on the North-West Frontier and units were always available for internal security tasks. However, training was very structured, heavily choreographed and followed a rather unrushed cycle, which minimised activity during the hottest months and the monsoon season. Individual training was delivered through a well-founded network of basic, trade and specialist training establishments and all training was coordinated by a small 1* Military Training Directorate in GHQ in Delhi.²

The recruitment and basic training of Indian Other Ranks (IORs) was scheduled to minimise disruption to the harvest.³ Following the 1857 Indian Mutiny, recruitment had been restricted to 23 Martial Races who were considered to embody the strongest soldierly qualities. *Gallawallahs* (recruiting officers) from each regiment would visit villages to select *umedwars* (potential recruits) who then went to the network of individual Regimental Training Centres for their basic training. Joining the family regiment had become an



Map showing the Japanese conquest of Central Burma, April 1942 by Charles F. Romanus and Riley Sunderland, US Army, Wikimedia, Release

established tradition and the fifth generation of some families were arriving as recruits at Regimental Training Centres by the 1930s.

Officer recruiting also followed an equally well-established process. Having completed two years at the Royal Military College at Sandhurst, aspiring new subalterns would join a British cavalry regiment or infantry battalion in India for a year. There was not an equivalent course to today's Platoon Commanders' Battle

1 *Military Training Pamphlet No 9 (India)*. September 1943.

2 GHQ Delhi was the principle headquarters for the command of all British and Indian troops in India and certain Middle East colonies eg Aden

3 *The Punjab and surrounding states were the army's main recruiting areas and the Punjab was also India's grain basket. Recruiting could not be to the detriment to food production. These conflicting priorities became paramount during both world wars and required the Indian Army to widen its recruiting base in 1943.*

Course and this attachment was to learn the duties of a platoon commander but also find an Indian unit to accept them. Even having joined their Indian units, they were still on probation until passing an exam in Urdu and potentially the language spoken by their men, for example Gurkhali. Only then were their Regular Commissions confirmed.

Officer recruiting fundamentally changed during the inter-war years with the introduction of Direct Entry Indian officers. In December 1918, it was decided that India should start transitioning to a Dominion and the Montague-Chelmsford reforms initiated the progressive *Indianisation* of the army towards a completely Indian officer corps by the mid-1960s. The first Indian Gentlemen Cadets went to Sandhurst until the Indian Military Academy (IMA) was opened at Dehra Dun. Indianisation, and the growth of an Indian officer corps, was essential to the successful expansion of the wartime army but also the future army of an independent India.

The collective training year also followed an equally well-trying progression culminating with major exercises during the cooler weather. Every year, battalions would march to their training areas over several weeks, using a chain of established bivouac areas and often along the famed Grand Trunk Road.⁴ Covering around 15 miles daily, the battalion would rise before dawn and march to a next bivouac area⁵, have lunch and then conduct low level training during the afternoon. This method was familiar to the Romans and Napoleon's *Grand Armée* and ensured that the battalion was fit, with hardened feet and ready to start formation level training. This well-organised cycle was ideal for the planned roulement of units to the Frontier, however, its rigidity and lack of urgency would be the army's downfall during the campaign in Burma and Malaya in 1941 and 1942.

WAR IS DECLARED

India, in line with the rest of the Empire, declared war on Germany on 3 September 1939, but there were no plans to either expand the army nor to deploy overseas.⁶ The immediate threat was perceived as a Russian invasion of India through Afghanistan and additional units deployed to the North-West Frontier. When Italy entered the war, rapid expansion began with new formations and units raised for the Middle East so that by the end of 1941 eleven new deployable infantry divisions and an armoured division had been established.⁷ However, the Frontier continued as a major focus and so when the 7th Indian Division was formed on October 1940, it promptly deploying to the Frontier and did not begin jungle warfare training until December 1942.⁸ The Indian Army also remained the lowest priority for equipment and John Masters, then the adjutant of 2nd Battalion 4th Gurkha Rifles, vividly captures this frustration in *The Road Past Mandalay*.⁹ These shortages were felt most acutely by the Indian cavalry. Mechanisation was ordered in September 1939 but most cavalry regiments did not receive any vehicles until nearly a year after the order¹⁰ with some regiments initially training as lorried infantry rather than as an armoured regiment.

When the Army began to expand, a significant training infrastructure programme was required as part of the overall construction necessary to put India on a war footing. To increase capacity, pre-war courses were shortened, for example, the 2½ year commissioning course was replaced by a six month Emergency Commissioned Officer (ECO) course and the two year staff college course at Quetta was replaced by a six month War Course. As a completely volunteer force, recruiting needed to increase and by the end of 1940 over 20,000 recruits were being trained monthly.¹¹ The initial expansion was through *milking* or taking drafts from existing battalions

4 *The Grand Trunk Road was built by the East India Company from the 1830s. It connected Calcutta (the administrative capital of British India until 1911) with Delhi and finished in Peshawar (one of the many major garrisons built to support continued operations on India's North West Frontier). The road travelled through the Punjab, which was the main recruiting ground and the location for other major garrisons and training areas. The Grand Trunk Road was essential for India's defence, commerce and administration. Today, much of it is dual carriage ways and reflects its enduring importance.*

5 *A chain of bivouac areas was established along the main routes used by the army. Some of these sites can still be found with the remnants of a low perimeter wall and occasionally a small cemetery where soldiers who died during the night could be swiftly buried before the battalion marched to its next bivouac.*

6 *Each of the Empire's countries declared war in turn. While it was their choice, it was expected by London and failure to do so would have caused a political storm.*

7 *All Indian brigades contained at British battalion which was the practice following the Indian Mutiny in 1857. During the final year of the Burma campaign, fewer British battle casualty replacements were sent to the Far East and British battalions were withdrawn from fighting formations when no longer sufficiently manned. These gaps in the ORBAT were then filled by forming additional Gurkha battalions.*

8 *Roberts, MR, Golden Arrow: the Story of the 7th Indian Division (Aldershot, Gale and Polden, 1952), p.1.*

9 *Masters, John, The Road Past Mandalay (Watford, Oldham Press Ltd, 1961).*

10 *For example, the 7th Light Cavalry and 5th (Probyn's) Horse did not start to receive vehicles until August 1940 and then only motor cycles. This was typical of the experience of the Indian cavalry.*

11 *Khan, Yasmin, The Raj at War: A People's History of India's Home Front (London, The Bodley Head, 2015) p. 18.*



After the heaviest air and land bombardment in this sector of the Burma front, British and Indian troops of the 36th Division forced a crossing in assault craft over the Shweli river to Myitson. The Shweli is the last river barred to the 36th Division's advance into central Burma, and the Japanese opposed the ferry crossing fanatically. This image shows men of the Buffs (Royal East Kent Regiment) advancing on Myitson village through the jungle after crossing the Shweli river © IWM SE 1790

and so 9th Battalion 14th Punjab Regiment (9/14 PUNJAB) was formed with drafts from the 1st, 4th, 5th, 6th and 7th battalions and 350 IORs straight from their Regimental Training Centre.¹² By 1943, the 10th Baluch Regiment (10 BALUCH) had more than doubled to twelve deployable battalions and the 13th Frontier Force Rifles had nearly tripled to fourteen deployable battalions and this scale of growth was typical across the whole army. The various Corps also grew but were challenged by finding recruits of the correct entry standard with a literacy rate of only 12% in India in 1939.¹³

BURMA AND MALAYA 1941-42

The back door is at present being left unlocked¹⁴

The British Government did not consider that India's frontier with Burma was threatened and training focused on open desert warfare in the Middle East. Only a small garrison was maintained in Malaya and Burma,

hunting dacoits (armed criminal gangs) and conducting limited training in the jungle, which was considered as impenetrable and a health risk. Malaya Command began to grow in response to the Japanese threat, but arriving units were frustrated by the lack of urgency among the resident units and the lack of training opportunities. On arrival in Malaya in 1941, 2nd Lieutenant John Randle in 7th Battalion 10th Baluch Regiment (7/10 BALUCH) overheard his Commanding Officer being advised by a General Staff Officer Grade 1 (GSO1)¹⁵ staff officer:

You can't do much training here; it is all bloody jungle.¹⁶

While there was comprehensive doctrine for the North-West Frontier and for internal security operations, there was little to assist this expanding garrison and the primary guidance was a 1902 Burma Military Police pamphlet.¹⁷ Good battalions realised that self-help was necessary and experimented with tactics. In Malaya, 12 Indian Infantry Brigade and particularly 2nd

¹² Jeffreys, Alan, *Approach to Battle: Training the Indian Army During the Second World War* (Solihull, Hellion & Co Ltd, 2017) p. 57. 6/14 and 7/14 PUNJAB were wartime battalions raised by milking. Taking drafts from these battalions only further diluted their Regular Army component.

¹³ Khan, *The Raj at War*, p. 57

¹⁴ Kirby, Lieutenant Colonel S.W., *Notes On Singapore, 1936*

¹⁵ Equivalent to a SO1 today

¹⁶ Randle, John, *Battle Tales from Burma* (Barnsley, Pen and Sword, 2004), p. 5.

¹⁷ Jeffreys, Alan, *Approach to Battle*: pp. 132 and 149.



A female elephant with her calf dragging a timber log for bridge building operations. Photograph probably taken in Burma, exact date unknown © IWM IND 3224

Battalion Argyll and Sutherland Highlanders (2 A&SH) gained a good reputation for their tactical skill in the jungle¹⁸ and 2 GLOSTER gained a similar reputation in Burma. These battalions were the exception and when HQ Malaya Command finally realised the need for challenging jungle training, units were occupied building last minute field defences. The 85,000 Indian, British and Australian troops who surrendered at Singapore were completely unprepared for their enemy and their environment.

THERE ARE NO NON-COMBATANTS IN THE JUNGLE¹⁹

All units in jungle warfare must be responsible for their own protection²⁰

The campaign had been disastrous but the army had gained some useful knowledge and experience. Fundamental changes were necessary in training and to establish strong links to doctrine and to the lessons process. The army would now train and fight during the monsoon, recruiting would be open to all of India's population rather than just the Martial Races, the number of Indian ECOs²¹ would increase and Indianisation would end: Indian units would now receive replacement officers based on vacancies rather than race.

The Military Training Directorate grew to a 2* command with 28 staff officers responsible for all individual and collective training, doctrine, capturing lessons but also publishing *Fauji Akhbar* (the Urdu language equivalent of 'Soldier' magazine). Elements of 2 A&SH were evacuated as a priority from Singapore just before the surrender to preserve their expertise, forming No 6 GHQ Training Team. Also 220 Military Training Mission was established to gather lessons on jungle operations from the Australian and the US experience.²²

Building on the successful Great War lessons process, an ambitious programme began of mass-produced *Army of India Training Memoranda (AITM)*, *Military Training Pamphlets (MTP)*, *Reports from Overseas*, *Battle Bulletins* and *Notes from Theatres of War* augmented by observations from training to capture the best new ideas. *MTP (India) No 9 Jungle Warfare* was the core doctrine and was regularly revised and was produced in English, Urdu, Telugu, Gurkhali and Malayalam. These pamphlets are still very readable and the guidance is simple and direct. 80,000 copies were produced of the September 1943 edition of *MTP 9* and the chapter on withdrawal was typical of the brevity and clarity of direction given:

THERE WILL BE NO WITHDRAWAL

¹⁸ 4/19 HYDERABAD and 5/2 PUNJAB were also in the brigade and achieved equally high standards but have never received the recognition afforded to 2 A&SH.

¹⁹ Slim, William, *Defeat to Victory* (Cassell & Co, 1956) p. 163.

²⁰ *Lessons from the Burma Campaign April to May 1942*

²¹ By 1945 there were 15,540 Indian Commissioned Officers. Jefferys, *Approach to Battle*, p. 202.

²² Marston, Daniel P., *Phoenix from the Ashes: the Indian Army in the Burma Campaign* (Westport Connecticut, Praeger, 2003) p. 170.



A Stuart light tank of an Indian cavalry regiment during the advance on Rangoon © IWM IND 4652

Within two weeks of the Fall of Singapore, the first jungle warfare and lessons learnt pamphlet was produced²³ and others quickly followed. Japanese tactics were correctly identified as focusing on:

*Mobility, speed, infiltration and encirclement*²⁴

Similarly, the Indian Army realised air-land integration including air resupply, fire discipline, all round defence and defensive 'boxes', not withdrawing, mobile reserves, aggressive patrolling and that individual basic close combat skills were essential. These deductions held true throughout the war, however, the structures did not exist to deliver the necessary individual and collective training in 1942.

Immediately after the 1942 retreat, self-help and experimentation was paramount, and the 14th Indian Division founded its own and the very first jungle warfare school. The Infantry Committee (India) directed the establishment of two dedicated battle schools, initially converting 14th Indian Division to a training unit and expanding its school at Chhindwara. 39th Indian Division also changed roles and established a further school at

Saharanpur and 52 Infantry Brigade delivered British only courses at Budni. The two month course emphasised live firing, night operations, living and fighting on light scales and the ability to march 25 jungle miles a day fully loaded. The syllabus also included survival training then known as *jungle lore*. The first month was in a jungle base camp concentrating on individual skills, general acclimatisation and toughening up. The second month was collective training and culminated with a final test exercise. All officers, including staff officers, had to complete the course serving as a rifleman within an infantry section.

Divisions also conducted specialist collective training, for example the 26th Indian Division prepared for amphibious operations and the 44th Indian Parachute Division trained for its airborne role. Dedicated training establishments were also required for the nascent Special Forces. Divisions also received continuation training during periods out of the line, for example, the 23rd Indian Division was withdrawn from the Arakan in July 1943 for an extended period of training, re-equipping and leave and again in August 1944 for amphibious training for future operations along the Arakan coast and the subsequent seaborne operations in Malaya.²⁵

²³ *Army in Indian Training Manual No 14. Dated February 1942.*

²⁴ *MTP (India) No 9 "Jungle Warfare" August 1942*

²⁵ *Doulton, AJF, The Fighting Cock: Being the History of the 23rd Indian Division 1942 – 47 (Aldershot, Gale and Polden, 1951) p. 66 and pp. 202-203.*

Basic and initial trade training was still based on the pre-war framework of training establishments but at a much greater scale, for example the 16th Punjab Regiment (16 PUNJAB) Regimental Training Centre at Multan produced 15,070 trained soldiers during the war.²⁶ The length of the recruit course was initially reduced to six months to increase capacity but later returned to nine months, and from 1943, all training was jungle specific.²⁷ The IMA continued to run commissioning courses with additional Officer Training Schools (OTS) built at Belgaum, Bangalore and Mhow and there were capbadge specific OTSs; for example, Bangalore, Kirkee and Roorkee for Sappers and Jubbulpore for the Royal Indian Army Service Corps and Indian Army Ordnance Corps. Some of the increased demand for officers was met by British Army NCOs but recruitment continued from selected new entries. Before sailing to join an Indian OTS, this cohort enlisted as Private soldiers in the Royal Scots and later the West Surreys and completed twelve weeks basic training compressed into six weeks, very like the Household Division's Brigade Squad. Officer Cadets (OCdts) aged 35 to 44 years old attended a two month commissioning course, similar to today's Professionally Qualified Officers course, to prepare them for employment in staff and administrative appointments.

A wide range of continuation training courses were also necessary, which included capbadge specific trade up-graded and specialist courses, tactics courses, cadres and All Arms generalist and specialist courses. Promotion courses were also conducted, often with a classroom and a field module very like today's Command, Leadership and Management (CLM) courses. In addition, all IORs were encouraged to achieve their Indian Army Special Certificate of Education and the 1st Class English Certificate.

TARAQKI KE USUL - WINNING THE PEACE

In 1944 further changes in training were instigated. Wartime courses had gradually lengthened, partly to improve the output standard but also as a tacit recognition that these men would be the core of India's post-war and post-independence army and should be prepared accordingly.²⁸ A completely new range of courses were also launched that year: resettlement. It was planned that the wartime army of 2.5m would rapidly reduce to 280,000 with 70 - 80,000 personnel demobilised monthly. Regimental Training Centres would become demobilisation centres providing an optional nine week course offering modules that included poultry farming, animal husbandry and basic accounting so that each man could leave with two qualifications.²⁹

By 1945, the Indian Army had become a world class, war-winning organisation, however this evolution had been hard won and in the face of near defeat. The pre-war army was highly professional, but its proficiency was very limited and its training was anchored to established procedures. The shock of the 1942 campaign required training to be transformed in ways previously unimaginable, yet by the end of 1943, India had developed a highly comprehensive and mission specific training structure to conduct amphibious and air assault operations and Corps level combined arms manoeuvre. Innovation and a strong bond between training, doctrine and lessons produced an army who resoundingly defeated the most ruthless enemy, in the most demanding terrain and in the most brutal climate.

²⁶ Jefferys, *Approach to Battle*, p. 203.

²⁷ *Soldiers joining the three Indian Divisions with the 8th Army in Italy required theatre specific training.*

²⁸ *While a date for independence was not set until February 1946, few British serving in the wartime Indian Army disputed that independence was imminent.*

²⁹ Marston, Daniel, *The Indian Army and the End of the Raj* (Cambridge, Cambridge University Press, 2014), pp. 244 - 245. *Regrettably many did not undertake this training and some drifted into the cities seeking employment with armed political militias and organised crime where their wartime skills were of use. This only fuelled the wider breakdown of society prior to Partition.*



THE CAMPAIGN IN BURMA, 1945, Among the pagodas on Mandalay Hill, historic heart of Burma's second city, Indian troops of 19th Division open fire on a Japanese strongpoint. Photo: Taylor R E (Sgt), No 9 Army Film & Photographic Unit, IWM 4700-64, Released

Cromwell's New Model Army - Part One

Nicolas J Lipscombe, examines the creation, utilisation and legacy of Cromwell's New Model Army(NMA) in terms of the 21st Century British Army. In this, Part One of two parts, the author looks at the creation of the NMA and the NMA as a fighting force.



*The Sealed Knot Re-enactment Society deploy as Dragoons on the western edge of the Naseby Battlefield along the Sulby hedgerow.
Photo: by kind permission of Simon Marsh*

*Oliver's army is here to stay
 Oliver's army are on their way
 And I would rather be anywhere else
 But here today*

Elvis Costello, singer & songwriter, 1979

By the end of 1644, and two years into the first English Civil war, the situation had reached a military impasse. The Royalist advantages of 1643 had been overturned by a Parliamentary alliance with the Scottish Presbyterians and the creation of two new and large armies; one led by the MP William Waller in the west, and the other led by the Earl of Manchester in the east.¹ Despite a series of Parliamentary victories in early 1644, growing divisions among their generals, and a series of strategic errors by their war counsellors, allowed the initiative to slide back in the King's favour. The high recriminations that followed led Parliament to conduct a radical reorganisation of its forces. The new army that emerged from that process was very different from any army the nation had witnessed before.²

The Parliamentary victory at the Battle of Marston Moor in July 1644 was of enormous military significance in the first English Civil War. But the forces of Parliament, beset by internal differences, failed to capitalise on their victory over the forces of the King. The disaster that befell the forces of the Earl of Essex at Lostwithiel in September that year, and the opportunity squandered at the second Battle of Newbury the following month, led to a bitter power struggle within the Parliamentary political and military hierarchy. In Parliament, support polarised for either of the political parties supporting the war or the group of parties supporting peace, at the expense of the middle parties.³ The peace group was more resolute than ever to secure a negotiated settlement with the King, while the war party was equally determined to fight to a military conclusion, which, they considered within their immediate grasp. In order to achieve military closure, the war party saw the irrevocable need to separate the political and military functions in the prosecution of armed conflict. The conclusion, more by blessing than design, could not have turned out better for the war party.



Map 1: The situation as of 1st of May 1643

In December 1644, the introduction in the Commons of the Self-denying Ordinance, separated the political and military roles, thereby creating a new, central army led purely by military men. The Ordinance stipulated that no member of the Lords or Commons could hold (any) command in the army or navy. By January 1645 the Ordinance provided a solution to the deadlock between Parliament's two houses providing the wherewithal to end the internecine divisions; it generated a renewed impetus towards the end of the war and created the nucleus of a new and decisive fighting force. Thomas Carlyle, a Victorian historian who edited Cromwell's speeches and letters in 1845, recalled that 'Parliament had its New-Model Army, and soon saw an entirely new epoch in its affairs'.

OLIVER'S ARMY ARE ON THEIR WAY - THE CREATION OF THE NEW MODEL ARMY

Two years into the war, the strengths and weaknesses of the Parliamentary cause were the reverse of those of the King. The Royalists had a unified command and administrative system, while Parliament had individual

¹ See details of this organisation Footnote 4

² At this time, Cromwell was a cavalry colonel in the Eastern Association army, under the Earl of Manchester.

³ There were no recognisable political parties at this time. In both the House of Lords and House of Commons individuals allied themselves to groups that supported the war, or those that supported a peaceful settlement with the King. Those not aligned to either of these two groups, or undecided, were collectively known as the middle parties. The names of the parties were war party, peace party and middle or middling groups.

regional army commands and a series of overlapping committees.⁴ Furthermore, Parliament's alliance with Scotland, and the duly formed Committee of Both Kingdoms, had already developed cracks.⁵ Reliance on county militias and regional forces further complicated national military planning and execution.

Despite these drawbacks, Parliament held two trump cards. Firstly, the cities and counties under their regulation were far wealthier than those in Royalist-controlled areas. Secondly, Parliament's control of the navy gave them a lead in the prosecution of the war in Britain and Ireland and, equally importantly, it enabled them to interdict foreign support to the Royalist cause. These benefits provided the Parliamentarians with something that was denied to the King - time. During the first two years of the war it was John Pym (the *de facto* Leader of the House of Commons) who made best use of that time in prosecuting the war, but he had died in December 1643. The reorganisation of the Parliamentary administration in the wake of Pym's death, and the new alliance with Scotland, resulted in the establishment of the Committee of Both Kingdoms, in which middle parties were more strongly represented. However, they lacked a cohesive strategic vision and/or concept and were predisposed to vacillate between a mediated versus a military solution.

The unsatisfactory conclusion to the fighting season in October 1644, reopened old wounds and resulted in open hostility between Parliament's military commanders. Oliver Cromwell and William Waller launched an attack on the Earl of Manchester's conduct, and suitability for continued command with Cromwell repeatedly referring to events at (the siege of) York and Marston Moor.⁶ Manchester had no real defence to speak of. His comments following the debacle at the second Battle of Newbury now came back to haunt him. 'If we beat the King ninety-nine times, he would be King still, and his posterity, and we subjects still; but if *he* beat *us* but once, we should be hanged and our posterity undone'.⁷

The Earl of Essex, who had largely escaped blame from Cromwell (but not Waller), tried to shift the finger of blame on Cromwell for trying to drive a wedge between Parliament's Scottish allies. He had pre-empted Cromwell's accusations and, in the wake of Newbury, had convened a meeting with the Scottish Commissioners. Bulstrode Whitelocke had been present and recalled the words of the Lord Chancellor of Scotland that 'Ye ken vara weel that Lieutenant-General Cromwell is nae freend of oors; and since the advance of our army into England, he hath used all underhand and cunning means to take off from our honour and merit of this kingdom'.⁸ At a time when three other men were being tried under similar pretences, it was a dangerous accusation that could be considered treasonable.⁹ But following the loss of his army at Lostwithiel, Essex did not have a strong platform.

The Self-denying Ordinance offered both an olive branch and an opportunity to this in-fighting. It was quickly accepted by the Commons but the Lords were less enthusiastic. By removing all Members of Parliament from military positions, many of the ennobled officers would be forced to hang up their swords; a move that was perceived to be a dereliction of their honourable duty and customary service to the nation. It was, therefore, to be a long and difficult fight to drive the bill into law. In early January the Lords (initially) threw out the Self-denying Ordinance, but this did not deter Parliament from continuing their work and on 21 January they voted by 101 votes to 69 to make Thomas Fairfax the new commander-in-chief. The brave and popular Philip Skippon was named as his major general (chief of staff), but the post of lieutenant general of horse was, pointedly, left vacant. Indeed, Cromwell understood that his political position, and his ongoing very personal and highly public disagreement with Manchester, effectively ruled out his nomination - at this stage.

Ironically, it was Cromwell's spat with Manchester that was to provide the pedal with which to surge ahead with the establishment of Parliament's new army. For when

4 *At the end of 1644 Parliament had, in addition to its main army under the Earl of Essex, an Eastern Association under the Earl of Manchester (Cromwell was a cavalry colonel in the force); a Western Association army under William Waller; and a Northern Association army under Sydney Poyntz.*

5 *The Committee of Both Kingdoms developed from the Committee of Safety in February 1644, in order to jointly conduct the war effort after the Scots joined forces with Parliament.*

6 *Calendar of State Papers Domestic (CSPD): Charles I, 23 volumes, (London, HMSO, 1888). Series of depositions illustrative of the charges brought by Lieut.-Gen. Cromwell against the Earl of Manchester, submitted to the examination of the Committee formerly appointed for the Lord General Essex's army, dated 25 Nov 44 to 6 Jan 45.*

7 *Bruce, J., The Quarrel between the Earl of Manchester and Oliver Cromwell, an episode of the Civil War p. LXX (Camden Society, 1875). My italics.*

8 *Whitelocke, R. H. (ed.), Memoirs, Biographical and Historical, of Bulstrode Whitelocke, Lord Commissioner of the Great Seal, and Ambassador at the Court of Sweden, at the Period of The Commonwealth (London, 1860) p. 199.*

9 *Wanklyn, M., The Warrior Generals, Winning the British Civil Wars (Yale University Press, 2010) p. 140 – Alexander Carew and John Hotham senior and junior.*



Statue of Oliver Cromwell at the Houses of Parliament, London. (Author's own)

the Lords threw out the Self-denying Ordinance, and then overruled the subsequent nomination of Fairfax as the new army's commander, they did so because they wanted one of their own - namely the Earl of Manchester - to have the post. Therefore, on 15 January, the two committees charged with the investigation of the accusations laid at Manchester's feet, suggested that the Lord's investigation of a member of the Commons, namely Cromwell was unlawful and as such the tit-for-tat inquiry commenced without the permission of the House of Commons and breached Parliamentary privilege (a categoric 'no-no' in the Palace of Westminster in the 1640s).¹⁰ Furthermore, they were happy for both sides to state their positions and for Manchester to be able to

conduct his defence. With little prospect of a negotiated settlement with the King, the Lords were backed into a corner. On 15 February the Lords passed the bill for the New Model Army, although resolving the detail was to be a more protracted affair. It was with no little irony that the Scots looked on, realising that the Self-denying Ordinance had eliminated the same politico-military problems with which they too were blighted.

On 31 December 1644, Parliament had debated and agreed that the new army would, according to the State Papers, 'be 16,000 foot, 8,000 horse, and 1,500 dragoons. That a foot regiment consist of 1,200 men. That a regiment of horse consist of 600 men. The pay to be according to the last establishment of the Lord General's army.'¹¹ Financing the force was the first challenge, finding sufficient numbers from the remnants of the armies of Essex, Manchester and Waller was the second.

By the time the bill became law, the numbers for the infantry and cavalry had been revised down to 14,000 and 6,000 respectively.¹² Elevating the new army to a war footing was going to take time and it was resolved to raise another 8,500 in London and the eastern and southern counties to meet these manpower requirements. The New Model did not, however, immediately replace the plethora of other forces fighting for Parliament. In early 1645 these included the Scottish army under Alexander Leslie, Earl of Leven (21,000) the Northern Association under Sydenham Poyntz (10,000) and the (disbanded elements) of the Western Association under Edward Massie (approximately 8,000), plus a number of smaller bodies of troops spread nationwide. Charles Firth, in his exhaustive work on Cromwell's Army, estimates that there were at least 60,000 or 70,000 soldiers, excluding the Scots, earning Parliament's 'shilling'.¹³ Gradually, however, over the next couple of years, these forces would be incorporated into the ranks of the New Model Army.

In theory at least, the New Model Army was a national force not constrained by regional affiliation or county directives. This was absolutely crucial to enable the Committee of Both Kingdoms to plan strategically and fight a national campaign. However, in the first few months of 1645, the Self-denying Ordinance had not yet been fully passed into law and the armies of Essex,

¹⁰ *When Cromwell threw accusations (in Parliament, using Parliamentary process) at the Earl of Manchester, the House of Lords responded by investigating Cromwell's actions in the wars to date. That they did so with Parliamentary approval was unlawful.*

¹¹ *Calendar of State Papers Domestic (CSPD): Charles I, 23 volumes, (London, HMSO, 1888), dated 31 December 1644.*

¹² *Ibid*, dated 9 January 1645.

¹³ *Firth, C. H., Cromwell's Army: a history of the English soldier during the Civil Wars, the Commonwealth and the Protectorate (London, 1902) p. 34.*



Reenactors from the English Civil War Society parade as New Model Army soldiers in the grounds of Kelmarsh Hall, south of the Naseby battlefield. By kind permission of Simon Marsh

Manchester and Waller still existed. This created all sorts of problems for recruitment of the new force. Firth calculated that by March 1645 the available foot soldiers from Waller's, Essex's and Manchester's armies came to a mere 3,500 and that an additional 8,500 had to be recruited to fill the gap.¹⁴ Ian Gentles, in his work on the New Model Army is less pessimistic, suggesting that the new army's infantry stood at over 7,000, but he concedes that another 7,000 foot and 1,000 dragoons still needed to be raised.¹⁵ This lack of immediate numbers made impressment and county quotas prerequisite; something that was entirely contrary to the aim and *modus operandi* of the new force. There was still a significant shortfall of 3,000 to 4,000 men when the army deployed for the first time in May 1645. More crucially, perhaps, the impressment significantly reduced the mobility and morale of the new force, for many men deserted and returned home.

The new army was to have twelve regiments of infantry, eleven regiments of cavalry and a regiment of dragoons.

Each infantry regiment of 1,200 men had ten companies (of irregular size); the cavalry regiments six troops of 100 men and the dragoon regiment of 1,000 men divided into ten troops. Attached to every regiment were the key staff, including a provost-marshal, a surgeon, a clerk and a chaplain. The infantry had, in addition, a drum-major and a quartermaster. Each troop, or company, had its own standard as well as musicians; with drummers and trumpeters also acting as messengers in addition to their musical role. The amount of artillery was not specified and there was a simple explanation for this. Artillery at this time, and indeed up to 1855, was under the auspices of the Board of Ordnance and the direction of the Master General of Ordnance. However, Parliament would, undoubtedly, have directed the Board to provide both guns and trained gunners to its armies and the New Model in particular. According to the New Model's lieutenant-general of the ordnance, Lieutenant General Thomas Hammond, the artillery train consisted of four demi-culverins, four long sakers and twenty ordinary sakers. The accuracy of this is unclear as the train was

¹⁴ Firth, *op. cit.* p. 35.

¹⁵ Gentles, I., *The New Model Army in England, Ireland and Scotland, 1645-1653* (Oxford, 1992) p. 32.

supplied with two demi-culverin and eight sakers in April 1645, with another saker and three drakes being subsequently sent up to Windsor for the army.¹⁶

Fairfax, was required to produce a list of officers (from colonel to captain) to serve in the infantry, dragoons and cavalry. Steered no doubt by Cromwell, Fairfax was prepared to break apart regiments and pick those officers he saw as the most militarily capable. As early as 1643 Cromwell had written to the Parliamentarian politician Sir William Spring making it clear that he would 'rather have a plain russet coated Captain that knows what he fights for, and loves what he knows, than which you call a *Gentleman* and is nothing else'.¹⁷ It is no surprise that experienced military commanders considered ability and obedience as far more important officer qualities over social standing in the selection process.

The House of Commons debated the names at great length, but ultimately accepted the vast majority of Fairfax's proposals. The Lords, however, removed, relegated or reassigned as many as a third of his suggestions.¹⁸ Patronage and preferment had played a pivotal role in officer selection and the Lords were not about to sweep aside deep-seated historical precedence and regimental practice. Most of the proposed changes may well have been politically motivated but they were dressed up as preserving the seniority of the individual or the integrity of regiments. Religious considerations were also taken into account, although independency was viewed very differently to fundamentalism. Mark Kishlansky concluded that colonels Rainsborough and Okey, Major Richard Cromwell and captains Bush and Rainsborough were all excluded because of their extreme religious beliefs.¹⁹ All Parliamentarian officers at the time, and especially those selected for the new army, were expected to take the Solemn League and Covenant, but it was widely accepted that they could not be expected to adhere to a church that was not yet established.²⁰

Notwithstanding the Lords' exclusions, the merging of officers from three armies meant that the selectors were spoilt for choice. Once merged, a number of officers became surplus to requirements and were discharged. Such a policy was not without drawbacks. Samuel Luke,



Pictured is Cromwell's Monument on the Naseby Battlefield. Photo is published by kind permission of Martin Marix Evans

one of the officers discharged from Essex's army, recalled with a degree of bitterness perhaps, that in the new army 'many officers were hard to tell from the ordinary soldiers'.²¹ A number of sergeants and corporals, who were short of the mark, were also discharged or persuaded to take a demotion and serve as common soldiers. The deliberate exclusion and/or resignation of many Scottish officers, was significant too, marking the start of a diminished role for Scotland in English (Parliamentarian) military affairs.

The enormous task of outfitting the new army began as soon as the mechanism to fund it was in place. In February 1645 a new monthly assessment was levied (replacing the old 'excise') on the seventeen counties under Parliament's control.²² This totalled just over

¹⁶ *National Archives SP28/145 f.60r – Artillery Train for New Model Army; The nomenclature of artillery at this time was complicated. These guns were all field guns; Demi-culverins fired a ball of about 9 lbs; the sakers and drakes a ball of just over 5 lbs.*

¹⁷ Carlyle, T., *Oliver Cromwell's Letters and Speeches, two volumes*, (London, 1907) dated September 1643, vol. I, p. 147.

¹⁸ *Gentles, op. cit. pp. 36-37.*

¹⁹ Kishlansky, M. A., *The Rise of the New Model Army* (Cambridge University Press, 1979) p. 43.

²⁰ Kishlansky, *Ibid.*, p. 40. *The Solemn League and Covenant was a military league and a religious covenant which became a prerequisite for holding any command or (any) office under Parliament.*

²¹ Rogers, H. C. B., *Battles and Generals of the Civil wars 1642-1651* (London, 1968) p. 208.

²² *The system was, as ever, fraught with problems and money shortages were commonplace and normally resulted in arrears of pay.*

£50,000, with pay accounting for the lion's share and the balance of about £8,000 to be spent on arms, ammunition and supplies. Men were expected to feed and clothe themselves out of their pay. Dress was standardised and led to the creation of the British Army's distinctive redcoat, which was to be their unmistakable hallmark for the next two hundred and fifty years. Pay ranged from eight pence for a foot soldier, one shilling and sixpence for a dragoon and two shillings for a cavalry trooper, to thirty shillings a day for a colonel.²³

ONLY TAKES ONE ITCHY TRIGGER - THE NEW MODEL ARMY AS A FIGHTING FORCE

The approach of the new campaigning season and the Royalist opening salvos, forced Parliament to cut short their debate and allow the New Model Army to cut its teeth and get on with the job in hand. By the Spring of 1645, the Committee of Both Kingdoms had three strategic objectives: The relief of Taunton, the renewal of the siege of Chester and the defence against a possible Royalist attack in the Eastern counties. The Committee decided to dispatch the New Model Army to the southwest. Recruiting was far from complete and Joshua Sprigge, the chaplain to Fairfax's new army noted rather dryly, that the officers 'were better Christians than soldiers, and wiser in faith than fighting'.²⁴ That may be so but many of the newly appointed officers were seen behaving badly in London, instead of reporting for duty at Windsor. Furthermore, many of the regiments were in a state of mutiny disinclined to accept Fairfax's authority over them. The army's baptism, therefore, was not tidy.

The Scots were allocated the task of assisting William Brereton besiege Chester but with James Graham's (the Marquis of Montrose) extraordinary Royalist successes in Scotland the previous year, they were disinclined to move south. William Brereton was left on his own against Chester and the Committee of Both Kingdoms, concerned that the King's army now had free rein in the centre of the country, ordered Fairfax to split the new army. He was to leave 5,000 horse and foot to continue towards Taunton, while he was to proceed to Oxford with the balance. The Committee concluded that such a move would dissuade the King from attacking the Eastern counties (and the rump of the Eastern Association army left there) for fear

of losing his capital. It would also provide badly needed time to enable the new army to fill its ranks. It was a reasonable plan, and might have worked, had it not been for the King's indecision about his own strategy and Prince Rupert's counsel. Rupert, conscious of the new army's teething pains, had dismissed it as a cohesive fighting force. Days later Rupert arrived, unopposed, at the gates of Leicester and, after a fierce fight, captured the key Parliamentary city.

Devoid of alternatives, the untried army was sent north to counter Rupert's force and the two armies met on 14 June just north of the Northamptonshire village of Naseby. Fairfax's army numbered about 13,500 while that of the King about a third less at 10,000.²⁵ It was, to use a well-worn military phrase, 'a close-run thing'. The New Model won a muddled but decisive victory, which marked a watershed in the war. It was not only a turning point in the military outcome of the first English Civil War, but a defining moment in the command and control of Parliament's armies. In the run up to Naseby, the Committee of Both Kingdoms at the centre, had continued to demonstrate the familiar ineptitude and indecisiveness that had plagued military planning and execution in 1644. To be fair, they had been somewhat constrained by the intransigence of the Scottish military and political commanders. By contrast, Fairfax's Council of War, a form of strategic level command and control headquarters that deployed on the ground with the army, had proved more adroit. In the aftermath of the battle it was, not surprisingly perhaps, given greater powers and a degree of autonomy. A number of MPs, concerned at such direct and devolved military control of such a large armed body, introduced a Common's motion in an attempt to restore the prevailing authority of the Committee of Both Kingdoms. But lacking support, the motion was easily blocked.²⁶ Fairfax now had far greater control over operational decision-making for the New Model Army and an increased influence over Parliament's strategic military policy. The Council of War took on a more permanent character.

Fairfax marched back towards Somerset to 'mop-up' the West Country. He defeated the last major Royalist army under George Goring at Langport in July. It was the last

²³ *Gentles, op. cit. p. 47.*

²⁴ *Sprigge, J., Anglia Rediviva; England's recovery being the history of the motions, actions, and successes of the army under the immediate conduct of his excellency, Sir Thomas Fairfax, KT, Captain-General of all the Parliament's forces in England (London, 1647 – this edition Oxford, 1854) p. 46.*

²⁵ *The numbers on both sides at Naseby are contentious and have tended to be overstated. I am grateful to Martin Marix Evans who drew my attention to an article by David Blackmore, Counting the New Model Army (English Civil War Times No. 58, Partizan Press, 2003). Martin sums up the problems with, and possible solutions for, the numbers in his books Naseby, English Civil War (co-written) and Triumph of the New Model Army.*

²⁶ *Gentles, op. cit. p. 61.*

large-pitched engagement of the war but a number of Royalist garrisons and fortifications remained. It soon became clear that if the war was to be brought to a swift conclusion, the New Model Army would need to be broken-down into a number of smaller detachments in order to capture these many dispersed strongholds. This division, while militarily expedient, served to reduce the effectiveness of the Council of War and the old problem of precedence of command resurfaced. Even before the end of 1645, there were growing concerns about New Model Army's role in the nation once the fighting was over. It was described by some as an 'independent army', with a reputation for religious radicalism.²⁷ Not the best precursor to a lasting and peaceful settlement.



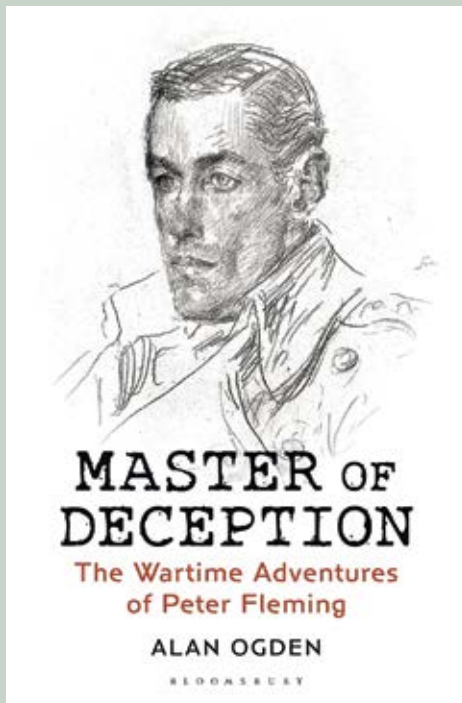
English Civil War Society re-enactors parade south of the Naseby battlefield in the grounds of Kelmarsh Hall. Photo: published by kind permission of Simon Marsh

²⁷ *Gentles, op. cit. p. 140.*

MASTER OF DECEPTION

Alan Ogden

Review by *Major David Hoey QDG*



Published by Bloomsbury Academic,
22 August 219,
Hdbk, 352 pp,
£16.99, ISBN-13: 978-1788315098

Deception plans from the Second World War are well-imprinted on the public imagination, with schemes such as Operation MINCEMEAT, the washing ashore of a dead body with fake invasion plans, or FUSAG, the fake army group waiting to strike across the Channel to the Pas de Calais. A large nod must go to Ben Macintyre for his excellent series of engaging and accessible books on MINCEMEAT and double agents. However, just as Slim's 'Forgotten Men' of the Fourteenth Army fought an overlooked war, so there was a large deception effort in the Eastern Theatre as well, supporting not only the Fourteenth but the whole theatre. The main character and driving force behind this was one Peter Fleming, known to us today as the brother of James Bond creator Ian Fleming.

The godfather of British deception was, of course, Dudley Clarke, about whom one of the best-known things is that in 1941 he was arrested in Madrid dressed as a woman, in circumstances that have never been fully explained. But what he would have wanted to be better known for are the facts about deception - an area that many a combat commander considers himself a practitioner, but in reality, don't have the time, resources, understanding and creativity to pursue properly. Clarke made a distinction between Psychological Warfare, directed at the morale of the vast body of the enemy rank and file and careless of the professional opinion of the chain of command, and Deception, aimed very much at the professional interpretation of the enemy commander to make them choose the wrong or a favourable course of action. Deception, therefore, demands a knowledge of the opposition personalities and a painstaking creation of the particular picture required to produce the desired effect.

With the extensive penetration of the Nazi command, in Europe this was often a case of sending material that would reinforce the OKW's or Hitler's assumptions, confident that their efficient but undiscerning intelligence system would pick it up and pass it back. In the East, it was a rather more difficult task, with a huge cultural divide to bridge. The Japanese were liable to consider different things important and often commanders completely disregarded intelligence reports once a course of action had been decided upon. This meant that finely targeted deception operations were unlikely to have any impact,

and the main objective became pinning down as many Japanese troops on the mainland as possible, to aid the American advance across the Pacific towards Japan herself. These troops were kept broadly spread by a series of measures to confuse them as to the direction of thrust when Slim advanced back into Burma to turn defeat into victory. Another successful line of effort was to reinforce the Japanese paranoia about spies, making them believe they were riddled with them and consuming a great deal of their effort and focus.

The other consideration that made deception tough was the nature of the coalition. The various nations had differing strategic aims and to a large extent the Americans under General MacArthur refused to have anything to do with British deception, despite a great deal of activity at staff level. This meant that the British under Mountbatten could rarely define their strategy clearly enough for Fleming's team to properly support. It became a running joke that whatever feint or distraction the deception staff worked up would in time become the actual attack. To navigate effectively through these difficult political waters required as much delicacy, tact and imagination as the deception operations themselves, and Fleming, heading operations, was greatly assisted when Ronald Wingate arrived as his superior and took the internal political pressure off him.

Most of these operations took the form of 'knapsack ruses', where juicy intelligence is manoeuvred into the enemy's hands without arousing suspicion (MINCEMEAT being the classic example). With the Japanese soldiery liable to fail to pass these on up the chain, Fleming turned to corruption as his cover. Aiming high, he set up a market of top-secret intelligence for sale: red herrings so big the operation was named Purple Whales. False minutes of strategic meetings were sold to Japanese diplomats or spies, deliciously making a great deal of money as well as feeding them duff information. This required direct approval from senior levels of command, with Wavell closely involved and occasionally Churchill himself, two men in particular who had the flair and imagination to support such measures.

Fleming himself was just the character for this sort of work and, in this book, Ogden paints a great portrait of him. Handsome, dashing, highly literate and well-travelled, he was by far the more accomplished and better acknowledged Fleming brother until Ian's later publishing success. Married to actress Celia Johnson and a published novelist himself, he had also taken part in a madcap expedition into the Amazon in the 1930s, recounted in his book *Brazilian Adventure*. He had also travelled extensively

in China and central Asia before the war, giving him greater experience than most of oriental cultures. With such a background, although he re-joined the Grenadier Guards where he had been a subaltern, he was plucked out for more esoteric employment. If the latter half of his war was mainly office-bound in Delhi, the first half was as full of ripping yarns.

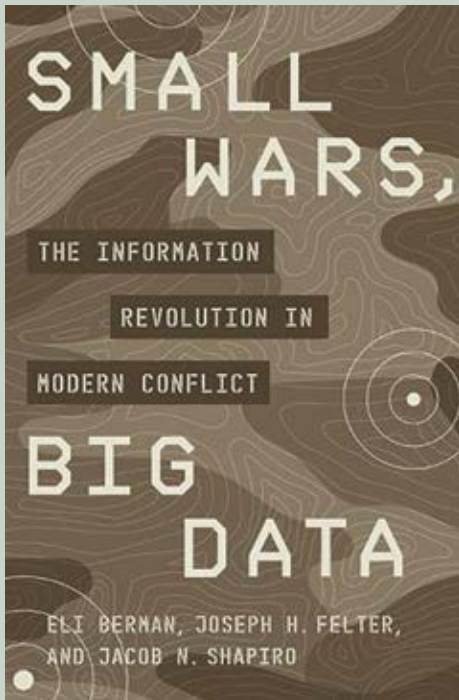
During the phony war he was part of the ill-fated British force that landed in Norway and then worked with Mike Calvert to lay the foundations for a resistance movement in Kent and Sussex should the Germans invade. Equipping his team with bows and arrows tipped with a poison from the Amazon was a typical Fleming touch. Later, he spent a short but dangerous time in Greece, attempting to slow the German advance with booby-traps and mysterious train movement. Back in London, he festered running the Street Fighting Wing of the London District School of Tactics in Battersea, and when a summons from Wavell came at the same time as a prosecution for speeding along Queenstown Road, he headed out to Java for what would be the start of three years away. This spirit of adventure occasionally found an outlet amongst his staff work: he wangled his way into Calvert's HQ for the second Chindit expedition, surviving an emergency glider landing and extraction through the jungle to reinsert, despite consternation that someone on the ULTRA list was exposing themselves so far forward. At the end of the war, although there were many paths open to him, he retired from exotic excitement for the pleasures of the hunt and shoot as a country squire on his estate near Henley.

This is only the latest of Alan Ogden's books about adventure and intelligence in the Second World War, complementing nicely his well-regarded work on the SOE. It is a meticulously researched and massively authoritative volume, as much a book on deception as a biography, with enough colour to keep the pace up in between the original pieces of staff work quoted in full. This book will no doubt be an important secondary source for students but is by no means too dry for the casual reader. Pleasingly, it ends with an honest evaluation of Fleming's work, given the aforementioned challenges of practising deception in the Far East. Drawing on Allied and Japanese sources, Ogden comes to the sympathetic conclusion that, difficult though it always is to precisely ascertain the effectiveness of deception, his work contributed in a major way to the strategic laydown of the Japanese and therefore can be credited with assisting not just the British in Burma but the whole Allied war effort in the Pacific. No wonder he could retire satisfied to his horses and children on the outbreak of peace.

SMALL WARS, BIG DATA: THE INFORMATION REVOLUTION IN MODERN CONFLICT

Eli Berman, Joseph H Felter, Jacob Shapiro,
Vestel McIntyre

Review by *WO1 James Heatherington*



Princeton University Press,
June 2018, Hdbk, pp 408, £24.00,
ISBN-13: 978-0691177076

This book combines various academic studies the authors have been involved in over the last 15 years with the aim of using large datasets from many conflicts, but with a focus on Afghanistan, Iraq and the Philippines, to determine ‘what works’ in counter-insurgency. The authors include an American former Special Forces’ Colonel (currently a high-ranking diplomat), an American Navy veteran (currently Professor of Politics at Princeton) and an Israeli veteran (currently Professor of Economics at University of California, San Diego).

The book describes a scenario in which a father notices two young men planting a bomb near his house. It uses this simple scenario to explore the key aspect of counter-insurgency warfare at the local level: does he inform the security forces or not? The book then explores six propositions related to this scenario. These focus on what increases the number of tip-offs to the security forces and what reduces or increases the levels of violence.

That the number of tip-offs the security forces receive is the key determinant of local success will surprise no-one with experience of counter-insurgency: Kitson’s classic *Bunch of Five* said much the same in 1977. The detailed modelling is welcome however, covering, for example, the cost-benefit of mobile network coverage and the utility of human against signals’ intelligence. An excellent extended discussion of the economics of tip-offs throughout the text is persuasive - a simple intervention that often generates disproportionate gains.

The book then concentrates on the effectiveness of governmental resource allocation in reducing violence and increasing intelligence. Troop numbers are a positive but their effectiveness can be multiplied by combining skilful troops with local knowledge; using intelligence-led operations (measurably more effective); and leveraging small and controlled local service provision. Making this support conditional on local co-operation is key.

The importance of not causing civilian casualties is examined, with the authors stressing how the statistics support Generals McCrystal and Carter's advocacy of 'courageous restraint'. This has particular importance since security forces, especially foreigners, were 'punished' more than insurgents for causing civilian casualties. The effectiveness of payments to relatives in dampening the consequences of this was noted.

The book's real shock is its destruction of the basis of large-scale governmental intervention. Such projects were typically useless and at worst actively counter-productive. The theory that economic development *during a conflict* increases security is debunked. Local understanding of responsibility for successful projects was often very different from reality (the Taliban were adept at this and falsely attributing civilian casualties to coalition attacks). The idea that poor, disenfranchised young males make up the majority of fighters does not withstand scrutiny. The discussion of how insurgent organizations recruit and pay their fighters is informative: it is insensitive to risk and reward as usually understood and full-time professional fighters are few. These factors render 'employment' strategies useless for counter-insurgency purposes.

The book's aim is to show what works in 'winning the village', not the war. It succeeds admirably and is a must-read for those interested in the subject. Although well-written and engaging, it leaves the mathematics in, so it is not always an easy read. The authors plead for more data to be released for wider data-driven research on militarily-useful subjects. Given the insights the rigorous data-driven analysis has delivered here - the sooner the better for proceeding - based on the science, as much as the art, of war.

SAS ITALIAN JOB: THE SECRET MISSION TO STORM A FORBIDDEN NAZI FORTRESS

Damien Lewis

Review by *John Peaty*



Quercus 2018, HB & DJ,
398 pages, £20,
ISBN: 978 1 78747 513 7

Damien Lewis has made a name for himself by recounting tales of daring performed by Britain's Special Forces. His latest effort tells the incredible, but true, story of Op TOMBOLA that took place in Italy in March 1945.

The Allied advance had stalled in appalling winter weather amid the fearsome mountainous defences of the Gothic Line. Two men were parachuted in with the task of penetrating deep behind enemy lines and destroying an enemy HQ at Albinea.

At the eleventh-hour, the mission commanders radioed for David 'The Mad Piper' Kirkpatrick to be flown in, resplendent in his tartan kilt. They wanted this fearless warrior to lead the assault, piping Highland Laddie as he went - so giving an unmistakable British signature to the attack and forestalling Nazi reprisals against the local population.

As the column of raiders formed up, there was shocking news. High command radioed through an order to stand down, having assessed the chances of success at little more than zero. But in defiance of this order, the attack went in. The enemy HQ was destroyed by a mixed force comprising SAS, SOE, Italian partisans and escaped Russian POWs, all led by a kilted piper.

The story of Op TOMBOLA has been told before, including by key participants Roy Farran (*Winged Dagger* and *Operation Tombola*) and Michael Lees (*Special Operations Executed*). The Op has also been covered in several secondary accounts, including *Secret War in Italy* by William Fowler.

Thus, readers who have an interest in SF may be aware of the mission. Lewis has produced a more understated account than he usually does. Not necessarily to the book's loss, he concentrates less on stirring action and more on giving a balanced account of the characters and careers of Farran, Lees and Kirkpatrick (three very controversial men). Laying out the background and introducing the leading players, the book is quite slow to get going and it is well over halfway through before Lewis turns to the Albinea raid. The desire of Lewis to detail the consequences of the raid (especially the mistreatment of Lees by his own side) is commendable.

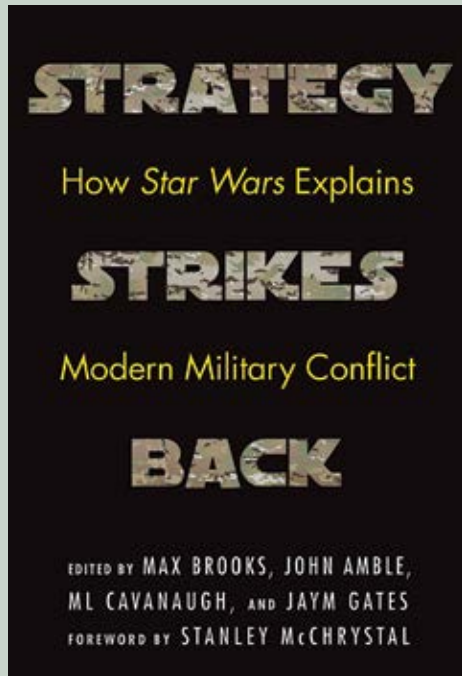
Op TOMBOLA was a fine feat of arms and succeeded in destroying the target. However, Lewis somewhat exaggerates both the difficulty and the importance of the target. Contrary to what Lewis writes, the target was a villa not a fortress and it was a Corps and not an Army HQ.

Credit is due to Lewis for a more restrained account than we are used to from him and for championing the cause of Lees (whose character was traduced and career ended after the raid). Lewis has made use of the documents in the National Archives and has interviewed relatives of the participants. However, the Farran and Lees accounts of Op TOMBOLA remain the best.

STRATEGY STRIKES BACK

Edited by Max Brooks, John Amble, M L Cavanaugh,
Jaym Gates, Stanley McChrystal

Review by *Lieutenant Mark Whitfield, QOY*



Published by Potomac Books,
May 2018, Hdbk,
pp 280, £20,
ISBN-13: 978-1640120334

At first glance, a book that seeks to draw real world lessons from a fictitious conflict may seem like little more than intellectual click bait. However, there is a growing body of this type of work appearing on journal sites such as Angry Staff Officer and West Point's Modern Warfare Institute so it would seem to be something that will be with us for some time. This type of material may seem to be feeding the inner geek and there is a risk that some of the discussions become bogged down in esoteric details of the fantasy worlds they look at, but in this case the writers (and editors) have kept on the right side of the line.

Strategy Strikes Back is a compilation of articles covering a range of topics from counter-insurgency operations to the targeting of civilians. The writers use aspects of the conflicts in the Star Wars universe to discuss contemporary issues; for example the chapter on Princess Leia considers the role of the character through the original trilogy and the more recent films, comparing her development with the changes in the role of women in the armed forces. There is always the risk that the writers will stretch the analogies too far but the works in the collection avoid doing this and it never feels forced.

The book isn't composed entirely of detailed analysis of strategic issues, there are a couple of chapters of what could be termed 'Fan fiction'. Whilst an account of the beginning of a religiously inspired insurgency by the Ewoks is entertaining and has some analytical value, the story of a droid in the aftermath of the battle of Hoth didn't really fit that well with tone of the rest of the book.

Perhaps one of the best examples of what the book is aiming to do and what it does well is the chapter on pre-emptive/preventative strikes, using Han Solo's shooting of another character as an example. The book walks through a scene in *Star Wars A New Hope*, discussing whether the actions of Solo amount to a pre-emptive or a preventative strike against his foe before drawing comparisons from conflicts over the last 200 years. The use of the example of an intensely personal conflict allows the author to explain the concepts of pre-emptive and preventative strikes in international conflicts in an extremely relatable way. It is interesting that the author uses the example of the 2003 conflict in Iraq as an example of a preventative strike rather than a pre-emptive one. It would have been interesting to see the essay extended to consider the legal and ethical ramifications of the difference rather than focussing on a cost/benefit analysis.

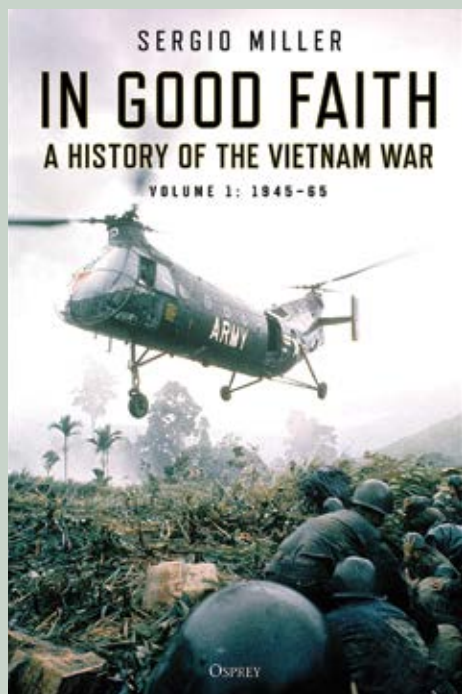
The book began as a result of conversations between American and South Korean officers in a joint HQ where it became apparent that despite vast cultural differences *Star Wars* gave them common ground. In many ways the book offers the opportunity to engage with some complex ideas and issues in a way which is accessible to those without an academic background. That said, whilst the *Star Wars* franchise might offer a common language to those of us who are of a certain age, it is not necessarily for those of a more recent vintage.

Overall the book is an accessible and enjoyable read which takes a novel approach to opening up the discussion on contemporary military issues. The examples used will resonate well with a broad range of people and the concept of using fictional conflicts to facilitate discussion of contemporary issues is one that has the potential to engage a broader audience than is normally the case.

IN GOOD FAITH: A HISTORY OF THE VIETNAM WAR, VOLUME 1: 1945-65

Sergio Miller

Review by *John P Harris, RMA Sandhurst*



Published by Osprey
Publishing, 2020,
Hdbk, £20,
ISBN978-1-4728-9

The quantity of literature on what historians formally term the Second Indochina War, conventionally dated 1959-1975, is truly vast and, in the absence of any sort of introduction, it is not clear what contribution Sergio Miller proposes to make. For the purpose of this review it will be presumed that he ultimately intends an overall survey of the war (though in how many volumes it is not clear) and that he addresses the general reader.

Miller has done serious research, some of it in primary sources, though these seem to have been accessed largely online. Unlike some historians writing for a popular readership, he employs endnotes guiding the reader to the material on which he draws. Miller writes clearly and forcefully. The photographs are copious and well chosen. Yet there are problems. Miller must compete against other general surveys of the war including Max Hastings' recent massive, very well informed, well-written popular history, which covers the conflict in a single volume. It takes two sides to make a war and Miller's treatment of the Communist side of this one is weaker than necessary.

Merle Pribbenow's translation of the official history of the People's Army of Vietnam, published by the University Press of Kansas, is missing from the bibliography, and Miller has clearly not consulted the immense mass of other Hanoi histories that Pribbenow has translated but which remain unpublished in the English language.

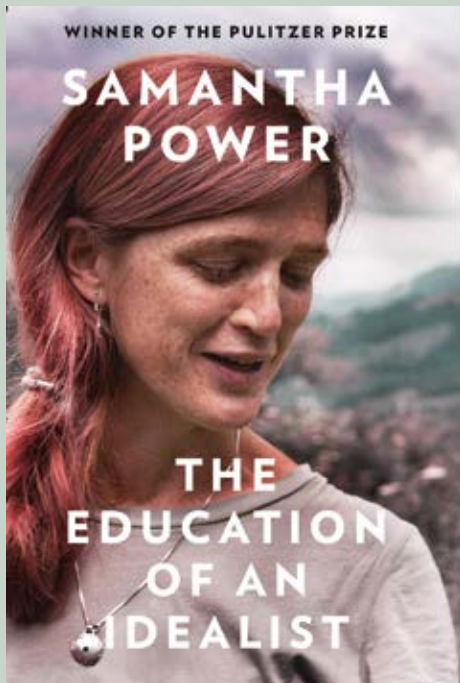
Though there is a passing reference to them in a single endnote, Pierre Asselin's history of Hanoi's path to the war and Lien-Hang Nguyen's monograph on Hanoi's direction of it are also missing from the bibliography and do not appear to have been significantly used. The same is true of several other major monographs on this period of the struggle. Remarkably little has been written on the military history of the first third of this war: the development and application of armed force by the two sides from 1959 to the middle of 1965. Yet, despite his own military background, Miller does not even attempt to remedy this deficiency. Even the one well-known firefight of that period, at Ap Bac in January 1963, is scarcely adumbrated here.

Instead, Miller focuses on the process by which the United States became increasingly drawn into the war. Americans have been obsessed with this for decades. It is, perhaps, the most investigated topic of the whole conflict (though some of the classic works do not appear to have been consulted here). Miller's indication that American involvement was a gross blunder and that this should have become obvious before 1965 is already well-established academic orthodoxy in the United States. Presumably, the intention is to convey this message well beyond the groves of academe and to other parts of the English-speaking world.

THE EDUCATION OF AN IDEALIST

Samantha Power

Review by *Lieutenant Adam Kearns*



Published by William Collins,
12 September 2019, Hdbk,
pp 592, £14.99,
ISBN-13: 978-0008274900

When American politician and former Vice-President of the United States Joe Biden said ‘we must rekindle the fire of idealism in our society’, he can only have had Samantha Power as a model in mind. A Pulitzer-prize war correspondent, Harvard academic, Obama campaign advisor, Director for Multilateral Affairs on the National Security Council, and US Ambassador to the UN, the common thread along her career has been a fervent belief in the moral imperative for the United States and her Allies to prevent wrongdoing overseas.

In her new book, *The Education of an Idealist*, a part-political memoir, part-autobiography, Power recounts her path to becoming the youngest ever US Ambassador to the UN and a key Obama insider. As a 23-year-old Yale graduate she travelled to Bosnia to cover the Yugoslav wars, living in Sarajevo for three years as a reporter for *The Boston Globe* and *The Economist*, among others. It was in witnessing Serbian war crimes and locating the mass graves of Bosnian Muslims that she fostered a burning desire to influence rather than record events. As a result, she returned to the United States and wrote the Pulitzer-prize winning *A Problem from Hell: America and the Age of Genocide* whilst studying a Juris Doctor (J.D.) at Harvard Law School.

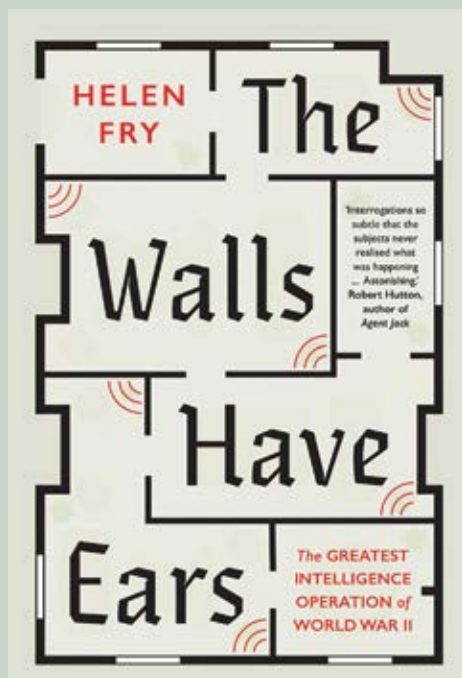
Toward the end of her studies at Harvard, Power was approached by a freshman Senator Obama for advice on his foreign policy platform. This led her into the White House where she became the conscience for US foreign policymaking during two Presidential terms. Her book recounts the tumultuous global events challenging Obama’s time in office, which propelled the President towards a strategic doctrine of pragmatic realism that was predicated around avoiding the pitfalls of complex interventions overseas. Whilst highlighting the often-forgotten successes that Obama had, such as creating a coalition to respond to the Ebola crisis in West Africa and pushing numerous countries hostile to LGBT rights towards a just resolution, most important is Power’s account of the August 2013 Syrian chemical attacks previously described as the ‘red line’.

What her account reveals about Assad's attack highlights the importance of liberal coalitions employing a swift response towards grave human rights violations. Obama initially ordered the Pentagon to strike targets across Syria within 24 hours of the chemical attack. Expecting support from NATO allies, the President was dismayed when British MPs voted against military action in Syria and he subsequently pushed the decision to Congress where he knew it would fail. As this was going on, Power was advocating a no-fly zone across Syria and the organisation of an intervention force. Meanwhile, in the UN General Assembly she challenged members to act. Her account makes the compelling argument that during a time of increasing global instability and the decline of democracy and human rights in parts of the world, Western countries collectively remain dependent upon to demonstrate a moral conscience, reinforced with the will to employ military force. Whilst *The Education of an Idealist* is an excellent book for its honesty, candour and insight into the past decade's foreign affairs, beyond all else it reminds us that on Syria, the Atlantic alliance failed with dramatic consequences.

THE WALLS HAVE EARS: THE GREATEST INTELLIGENCE OPERATION OF WORLD WAR II

Helen Fry

Review by *Major Adam Coffey*



Published by Yale University Press, 1st Edition, (August 2019), Hdbk, pp 320, £13.99, ISBN-13: 978-0300238600

The 1974 publication of *The Ultra Secret* spilt the beans on one of the most important intelligence gathering operations of World War 2. The book, which focused on the cracking of the Enigma Code at Bletchley Park, caused significant interest and has subsequently been well-documented by historians and Hollywood alike but, what is less well known, is some of the incredibly ingenious and thoughtful operations of the war which also contributed to the development of acquiring high level German intelligence.

Using recently released historical records, Helen Fry, an author who has published several books focused on the more secretive aspects of World War 2, has written this book on one such operation. Fry's narrative focuses on the bugging of cells and accommodation used by German PoWs imprisoned in the UK. The brainchild of a soldier-spy, Thomas Joseph Kendrick, returned to England prior to the outbreak of World War 2 but, understanding that war was inevitable set about forming his team and building the infrastructure and processes which would allow the conversations of the first PoWs in the UK to be recorded and assessed in 1940. Described as a 'pragmatist whose sole aim was to find clever ways of getting his prisoners to spill the beans', Kendrick set about this task and over the course of the war demonstrated significant successes, which would help support decision-making and inform both policy and strategy for the Allies.

The Walls Have Ears is broken down into numerous chapters covering three key themes; the methods and practicalities of gathering information, the German Generals captured and other key intelligence leads that were developed. It is worth noting that whilst *The Walls Have Ears* appears to cover the majority of the key headlines from this particular operation, none are covered in-depth and, whilst it could be expected that further historical analysis might provide this level of detail, the reader is left with the impression that there is much more to uncover within some of these fascinating tales.

Whilst the listening and recording of conversations was not a new method of collecting intelligence, that it was used in such a wide-ranging programme which focused on encouraging the PoWs to inadvertently tell their secrets through a structured process was. Fry outlines some of the more practical approaches used, such as planting themes in interrogations hoping that the PoWs would discuss it with their fellow PoWs later, or the use of 'pigeon stalls' - actors dressed as German's to try and lead conversations down useful directions. Fry outlines that one of the key challenges, however, was the extreme technicalities of language used along with military slang. This was only overcome by using German native speakers who had fled the rise of the Nazi party in the late 30s and 40s. These individuals, many of whom were Jewish and desperate to support the Allies, were crucial in interpreting the many hours of recorded conversations.

Much of this book is dedicated to the elaborate and extensive efforts that were made to interrogate and question the German Generals captured from theatres across the world. Noting that a different approach would be needed, Kendrick made the decision to house German Generals in an old stately home in Trent Park, London, allowing them to live together and convene at will. Significant efforts were made for them to feel relaxed, including pub lunches and trips to London, all with the aim of sparking conversations that could be recorded. Kendrick used a variety of tricks to spark discussion and cause discontent whilst also playing on the physiological profiles of some of the Generals. Falsifying medallic recognition - General Ramcke died believing that Hitler had awarded him the Knights cross with diamonds for his leadership in the defence of Brest - along with playing off the anti and pro-Nazi Generals, all resulted in significant intelligence being gathered as different vectors were explored to encourage conversation.

Frustratingly, Fry does not elaborate on the physiological assessment of many of her case studies. Whilst character references from intelligence reports are sometimes mentioned, the reader is never left with what feels like a complete picture from assessment to specific lines of intelligence-gathering with certain Generals.

Whilst the information gathered was useful for confirming and corroborating other intelligence, such as which

units had been where, or when certain U-boats had been sunk, arguably the most significant result of the taped conversations is the insights it offered into the German psyche, both military and civilian. Whilst it confirmed the idea that not all German fighting personnel could be classed as true Nazi supporters, it did confirm the complicated relationship that Nazi Germany, in its totality, had with the Jewish race, whilst also implicating many leaders, and by default many German civilians, that the realities of the final solution were well known, both across the armed services and civilians. It is worth noting that whilst the evidence gathered by Kendrick was not used in the Nuremberg trials due to intelligence sensitivities, it was used to guide investigations in post-war Germany.

Whilst much of the information provided by the Generals provided useful insights, it was rare that actionable intelligence was produced. However, one such case is the gossip of the Generals surrounding the production and development of the special weapons programme, Hitler's vengeance weapons. Whilst Fry explains that some of this was actionable, such as the subsequent bomber raid on the German special weapons facility at Peenemünde in 1943, she doesn't offer much on how these insights fed into what was, at the time, a significant threat and concern for both the British population and its leaders. It would have been interesting to understand how these insights, much of which was well-informed gossip, contributed to the wider intelligence picture and decision-making.

For those interested in the history of World War 2 this book on intelligence-gathering will undoubtedly be fascinating, however, for those who know the war well enough to understand some of the operational and strategic linkages they will likely be left frustrated by the lack of 'so what' in Fry's analysis. Whilst it is unclear if this depth of analysis is due to the absence of information - much of the files surrounding this operation are still classified - hopefully this book will act as a catalyst to explore these events in more detail, in much the same way that Bletchley Park and the code breakers' story has captured the imagination of so many over the past 4 decades.

PUTIN'S PEOPLE: HOW THE KGB TOOK BACK RUSSIA AND THEN TURNED ON THE WEST

Catherine Belton

Review by *Major Robert Crean*



Published by William Collins,
April 2020, Hdbk,
pp 640, £17.99,
ISBN-13: 978-0007578795

Putin's rise to power can easily be described as meteoric. Having worked as an advisor to the Mayor of St Petersburg, when Anatoly Sobchak lost his mayoral seat in 1996, Putin was not out of work for long. Within a month he had been made Deputy Chief of the Kremlin's influential Presidential Property Management Department (a huge step up) and, less than a year later, he had become President Yeltsin's Deputy Chief of Staff. In 1998, just 16 months after this, Putin was Head of the KGB's successor organisation (the FSB) and, continuing his upward trajectory, in August 1999 he was made Prime Minister, prior to becoming acting President as the Millennium rang in.

How was this possible? Belton (the Moscow correspondent for the *Financial Times*, 2007- 2013) sees this as part of a bigger picture, with the KGB trying to reassert their influence, first within Russia, and later on the world stage. Through painstaking research, Belton shows how the Siloviki (hard men from the security services) orchestrated Putin's rise and how he was able to quickly use his connections to cement power and bring the multi-billionaire oligarchs to heel. The extent to which Putin was manipulated by General Patrushev is debatable, but the way in which the FSB and former KGB operatives aided Putin's actions, tied them all to the presidency, making it incredibly difficult for him to step down from power. Theoretically, Putin's departure must occur in 2024, meaning Russian politics have now entered a turbulent period with significant implications for the West.

Belton presents Putin as initially wanting to integrate Russia on the world stage, with membership of the G8 seen as an historic success and the celebrity status of oligarchs such as Abramovitch being lauded; but when President Bush withdrew from the Anti-Ballistic Missile Treaty, Putin and his advisors felt betrayed and a Cold War narrative became re-established (made worse by

NATO's eastern march). Partly because of this, Belton shows how the Kremlin has used updated KGB tactics to fund far-left and far-right organisations throughout Europe, and an entire chapter is devoted to Russian influence in the election of President Trump.

In reading *Putin's People*, one is struck by parallels with some of history's great dictators, and Belton articulately explains how initial backers (men such as the Kremlin's Banker, Pugachev, or Yeltsin's Chief of Staff, Yumashev) thought they could control him, only to be later horrified by the way in which he took control of the press and mechanisms of state, such as the judiciary and regional governors. Additionally, and as with other dictators, Belton shows how Putin used the populist understanding of an external enemy threatening the core values of a unique civilisation to justify actions in Georgia, South Ossetia and Ukraine; and one is left with the understanding that this is a genuinely held belief which is colouring all of Russia's foreign interactions.

An authoritative book, *Putin's People* is superb. It must be acknowledged that at times it can become bogged down in detail so that both the number of different actors and tendency to jump around chronologically can cause confusion, but this is a fascinating and enjoyable read. Described as both the, 'most remarkable account so far of Putin's rise' (*the Guardian*) and the, 'most important book on modern Russia' (*the Times*) *Putin's People* should be essential reading for all British Army Officers.

FOR THE RECORD

David Cameron

Review by *Dr Al Robinson, Army Historical Branch Assistant Head Analysis*



William Collins, 2019, Hdbk,
pp 732, £25 - £14,
ISBN 978-0-00-823928-2

Rarely does a politician forgo an opportunity to influence and explain. David Cameron compiled a contemporaneous record so that he had the material to provide a second helping of influencing and explaining in his memoirs *For the Record*. He did this by recording his monthly conversations he had with a journalist Danny Finkelstein. The memoirs remind me of Blair's in that they give an insight into the what, why, and how of politics. They are easy to read with flashes of humour, self-awareness, and political gossip.

Inevitably, Brexit is the lens through which Cameron is viewed and he wrote anticipating that critical gaze. The first sentences of the book reads; 'It is three years since the referendum on Britain's membership of the European Union. Not a day has passed that I haven't thought about my decision to hold that vote, and the consequences of doing so.' (p.xii) It is inevitably the topic that other reviewers have given most attention.

For Army and MOD readers however, *For the Record* is worth reading for the insights it provides into the politics of conflicts in Afghanistan, Libya, and the 2013 non-intervention in Syria. Similarly, the functioning of the National Security Council, and Cameron's relationship with military officers such as General David Richards are also instructive.

The legacy operation that Cameron inherited was Afghanistan and he was the third of five Prime Ministers to have set the strategic direction for that campaign. During his watch the switch from counter-insurgency operations to a near exclusive focus on training the Afghan security forces took place. When Cameron assessed the campaign he wrote:

So, for all the blood spilt and treasure spent, was Britain's involvement in the Afghan war worth it? Historians say it's too early to say. It is incredibly depressing whenever the country slips back. Sangin is back in Taliban hands. Their flag flies over Musa Qala. Opium fields still stretch across Helmand. These are painful things to write....

The prevailing views are that this war was either doomed to fail or that it should have been pushed harder. I believe there is third category where you do the right thing and keep doing it. (p.171)

The 'keep doing it' impulse explains the 1000 UK troops still training the Afghan Army and security forces. The decision to keep training was one taken by a Prime Minister's sensing that history was judging.

Arguably, a more revealing operation was Libya in that Cameron engaged with the issue on his terms rather than continuing an operation such as Afghanistan. As Libya lurched into civil war and Gaddafi declared his intention to destroy the 'dirt and scum' of the rebel movement, Cameron characterised it as a race between Gaddafi's forces trying to reach Benghazi and the efforts of some European and Arab states to coordinate a political and military response to stop them. The initial set of airstrikes on 20 March 2011 destroyed the mobile heavy units of the Libyan Army and forced them to turn back from Benghazi. The National Security Council (Libya) was the coordinating mechanism for aligning the military, political, diplomatic, and economic efforts. Cameron was 'exasperated that too many parts of the government and military machines seemed more concerned about a future Libya war inquiry than about the war itself.' (p.283). At that time, I was working in Military Strategic Plans. If that was what the Prime Minister wanted, it was a message that was getting lost in the system. We were trying to offer more robust plans to defang rather than just contain the Libyan Armed Forces. Linking political intent and military activity was harder than it should have been. Too many layers?

The most significant political event with implications for the (non) use of the Armed Forces was the parliamentary vote on Syria in 2013. Oddly, the use of chemical weapons by Assad was not the trigger for airstrikes whereas the conventional attacks by Gaddafi were. The government had just lost the vote on Syria and as Cameron considered afterwards:

We were militarily, legally and morally entitled to respond. But democratically we were not. The rebels, and Miliband, were channelling public opinion. People were told 'legal authorisation to act militarily', but all they saw was dodgy dossiers, WMD and the bungled Iraq campaign. (p.465)

The way Syria then played out, including repeated use of chemical weapons is hardly an advert for non-intervention. When airstrikes were used in April 2018 they did nothing to change the course of the war. The wider application of the Syria vote is that it solidifies the precedent that there should be parliamentary authorisation of military action. It is a precedent only likely to be reversed in exceptional circumstances and one that makes timely, and therefore effective, military intervention less likely.

Both Cameron and General David Richards were aware of the robust relationship between Churchill and Alanbrooke. No doubt that shared historical awareness helped business, and which Conservative politician would not wish to think they were following Churchill or CDS think they were following Alanbrooke? True or not, the comparison flattered. Richards did not overstep the line in the way Dannatt did during the Labour government, so Cameron tolerated leaks and the slightly patronising staff college maxims. As he wrote, 'if you deal with a swashbuckler, you've got to be prepared to get swashed from time to time.' (p.173). It was cuts to the Armed Forces budget that most prompted Richards to come out swashing and the result was that a worse outcome was avoided. The political calculation Cameron and the NSC made in 2010 was that the 'tanking economy' was a greater threat to national security than a 'temporary gap in your aircraft carrier capability.' Cameron also blocked Richards' proposal to refocus the Armed Forces on land operations. He favoured retaining balanced capabilities and expeditionary reach. The cost was smaller Armed Forces. (pp.176-178)

The Army's utility as an instrument of national power requires a capacity to understand politics generally and the politics of military interventions in Whitehall and Westminster. If the Army feels misunderstood by politicians, then the Army has the most to gain by finding better ways to communicate with our political leaders. Reading their memoirs is a starting point but I suggest more political education and experience is needed in the Armed Forces. Perhaps there could be something like the mirror image of Armed Forces Parliamentary Scheme. If it is worth ensuring some MPs and other politicians understand the Armed Forces, surely, it is equally worthwhile ensuring some soldiers and officers understand the UK's political system so that they can operate more effectively alongside it and respond better to the political input into military strategy.

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.

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