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SUMMER 2023 / ISSUE #183



HOW WILL WE FIGHT?



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THE ARMY NEEDS TO BE READY 'TO FIGHT TONIGHT'

In the first issue of the reinvigorated *British Army Review*, published this spring, the Chief of the General Staff, in his opening remarks, offered us a few thoughts to concentrate our minds. In addition, he urged us all to engage fully in the professional discussion that must be a constant and vibrant part of the life of any serious career soldier. I am therefore delighted to see that so much of this issue of *The British Army Review* has been written by serving officers with direct involvement in its theme, as it explores how we, the British Army, intend to fight, now, in the face of real and present threats.

War in Ukraine is still raging, with little evidence of an early end being in sight, thus, regardless of the wider demands of Global Britain, a war in Europe has our focused attention. The Army is doing excellent work on how we might expect to fight in the future (Project Wavell and Future Soldier spring to mind), but the intensity and proximity of this war have reminded us (and perhaps we should not have needed reminding!) that the Army needs to be ready, at all times and to coin a phrase, to 'fight tonight' with what it has got. Operation Mobilise has given us our orders. Work in the Field Army over the last six months (including How We Fight 2026 and Project Lewes) has sought to ensure that we are clear on how we will meet that demand.

The Chief of Staff of the Field Army, Major General Colin Weir, opens this issue with an exploration of the detail of how we intend to fight now and in the immediate future. His is a pragmatic and clear explanation of how we will seek to meet the challenges that may face us – so I will not get ahead of things and repeat, in advance, the meat of his discussion. It is, however, worth offering a few words of context. The How We Fight 2026 work sets the Army a series of stretch targets ('stretch' but achievable) that should maximise the people-driven and tech-driven evolutions of our extant combat potential. In short, it is predominantly about harnessing existing technology, and



"We need to get much better at fighting dispersed, lowering our signatures in the field, fighting at distance, reducing logistic drag, and understanding how to act aggressively and lethally while preserving our own force."

in-service and near-in-service capabilities, to enhance our lethality and survivability. National strategy, including the *Integrated Review* and the recently 'refreshed' *Integrated Review*, state that we should be a 'reference member' of NATO: we, in the Army, need to be very clear about how we intend to meet this demanding national ambition.

We need to get much cleverer with our command and control – using technology to reduce headquarters sizes, especially those that operate forward, and offering true and enabled tactical and operational freedom of action and manoeuvre. We need to get much better at fighting dispersed, lowering our signatures in

the field, fighting at distance, reducing logistic drag, and understanding how to act aggressively and lethally while preserving our own force. And, despite a long history in this respect, and years of recent experience, we need to be much better at operating with, leveraging off, and contributing to operations with friends and allies including closer, routine integration of the Allied Rapid Reaction Corps.

In short, How We Fight 2026 explains how Operation Mobilise is to be translated into current combat effectiveness. The central theme of this issue of *The British Army Review* explores this in all of its aspects. I urge you to read and engage with this publication and to engage with the Field Army, cogitating, challenging, testing and, as a body – as a whole Army – seeking ways in which we can be ready to fight and win. – Lieutenant General Sir Ralph Wooddisse, Commander Field Army





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FROM THE EDITOR

Tempus fugit... but you don't necessarily need to be having fun for it to do so – as those tasked with taxing their grey matter in an attempt to answer the How We Fight 2026 exam question will undoubtedly testify.

A three-year window is as narrow as it is panoramic when it comes to taking a view on the optimum shape of the British Army in the almost here and now. No matter the strength of the Service's championed 'can-do' attitude, agile thinking, strategic innovation, and lessons learnt from unfolding conflicts are constrained by the realities of implementing organisational change and associated procurement programmes. Knowing what is required to win a fight is a world away from being equipped and ready to deliver a military victory and

– with a bloody war on our doorstep in Europe – we can ill-afford to again be given nicknames such as 'The Borrowers' and 'The Flintstones' by our close allies.

Conversely, while time is tight to get it right, modern history also tells us that an awful lot can change in 36 months and that planning assumptions are just that – educated conjecture. Rewind as far as the Army is attempting to fast forward, for example, and 'lockdowns' had only just entered mainstream British lexicon. Indeed, in 2020, the UK's Armed Forces had a different Commander-in-Chief, no American president had ever been indicted and Russia's ambitions for Ukraine appeared – to most – to be limited to the Crimea Peninsula. Efforts to forecast

the future are not, however, futile. Pragmatic 'prophesying' has long been a mainstay of the conceptual component of military leadership and as this issue of *The British Army Review* demonstrates, there is cause for optimism as the Service enters a new chapter. First and foremost, the articles that follow highlight the work already underway to ensure there is both jam today and combat effectiveness tomorrow. The results of long-standing procurement endeavours are being realised and recapitalisation projects are delivering in-demand capabilities. Secondly, and perhaps more comforting, are the carefully considered words of our contributors. Crystal balls have not replaced cognitive problem solving and there is no Nostradamus-style guesswork to be found on the pages of this edition. – **Andrew Simms**



NO ONE SAID IT WOULD BE EASY... HOW WE WILL FIGHT IN 2026

AUTHOR



Major General Colin Weir is the Chief of Staff of the Field Army and previously served as General Officer Commanding 1st (United Kingdom) Division.

"Everything is very simple in war, but the simplest thing is difficult. These difficulties accumulate and produce a friction which no man can imagine exactly who has not seen war."¹

ON 22nd January 1952, General Sir Gerald Templer was appointed as British High Commissioner in Malaya, charged with addressing the worsening communist-inspired Malayan Emergency. He brought energy, fresh thinking and a whole of government, whole-nation, and transformational approach to the challenge. In mid-February 1952, he gathered the British advisers to the federated states of Malaya in King's House, his residence in Kuala Lumpur,

where they had dinner and probing discussions.

After dinner Templer took the four BAs to one end of the drawing room and asked us what was wrong with the Government machine and what remedies we could suggest. Though unprepared we each volunteered our opinion. None of us scored many marks. He then told us his priorities. I, for one, returned to Seremban

¹Von Clausewitz, *On War (1832-4)* Book 1, Chapter 7, Tr J.J. Graham.

²Sheppard, Tan Sri Dato Mubin, *Taman Budiman: The Memoirs of an Unorthodox Civil Servant, Heineman (Kuala Lumpur, 1979)*, quoted in Cloake, John, *Templer, Tiger of Malaya, Harrap (London 1985)* p 213.

the next morning feeling like an electric torch which has just been filled with new batteries.²

THE TRANSPORTATION PLAN

In preparation for D-Day on 6th June 1944, General Eisenhower's Supreme Headquarters Allied Expeditionary Force planned and executed the Transportation Plan. Coupled with wider operational-level deception, 'Transportation' sought to achieve the physical isolation of the Normandy battlefield, to deny the Germans the ability to reinforce Rommel's formations that were ranged against the invasion beaches. The Allies had already largely achieved air superiority over France. As a result, they were able to maintain intelligence, surveillance, target acquisition, and reconnaissance advantage through conventional air reconnaissance and the employment of unconventional and dynamic sensors such as the Resistance networks that had been cultivated in society as a whole, and in the French railway and telecommunications industries in particular. Beginning on 9th March 1944, Transportation saw some 29,000 Royal Air Force and United States Army Air Forces sorties drop more than 75,000 tons of high explosive on French and Belgian rail centres, road junctions, bridges, tunnels, rail lines and Wehrmacht concentrations. It was a determined, well-targeted, and hugely well-resourced deep operation that significantly constrained the German ability to reinforce the Normandy battlefield. This devastation from the air was coupled with Resistance sabotage of railways, telecoms, and infrastructure, along with direct attacks on German forces attempting to reinforce Normandy. It was effective.

A fair example of the German difficulties were those undergone by 2nd SS Panzer Division [Das Reich], which started from Toulouse in the far south of France on the evening of 6th June.

Some wheeled vehicles got on the road that day. The tanks which would have worn out their tracks before reaching Normandy had they followed, were assembled at Montauban to load onto rail flat cars, but had to wait four days for trains. The marshalling yard was then heavily bombed, imposing a further delay. When the first trains reached the Loire on June 11th having travelled on the main line through Limoges and Chateauroux, they found only one bridge in use, a single track span at Port Boulet, near Saumur. After it was destroyed on June 14th, traffic had to be diverted to another at Tours-la-Riche, which had been so weakened by bombing that it could not take the weight of the locomotive.

The cars had therefore to be uncoupled and pushed over singly and the train reassembled with a new locomotive on the far side. Not until June 23rd did the last of the division's rail

"How We Fight 2026 acknowledges that we need to be more effective at deep battle, more ferocious and lethal when the close battle is joined, and more adept at ensuring that we shield those elements of our fighting system that need to be protected."

elements reach the battlefield. Having been seventeen days on a journey of 450 miles. In normal times it would have taken five.³

While Transportation was effective, it was certainly not 'clean'. Rather it was bloody and fraught with risk, even at the strategic level; Churchill was highly agitated that the killing and wounding of tens of thousands of French citizens might compromise the unity of the Western powers. At the very least he felt that the active support of the French population could be withheld come the invasion. This pressure on the enemy deep also had less predictable second order effects, which have dark contemporary echoes in places like Bucha. On their fractured, interrupted, interdicted summer 1944 march to Normandy the Das Reich Division unleashed their frustration. On 9th June, one of their regiments swept into the doomed village of Oradour-sur-Glane, murdered all but six of its 649 inhabitants and burned the bodies and the village to rubble and dust. Its ruins stand today as a memorial to the victims, and as a grim reminder that our strategic, operational and tactical plans invariably have unintended consequences.

Transportation was a huge logistical, targeting and strike effort. It was surely necessary, and the evidence for its effectiveness is plentiful, indeed one can only speculate as to how the Battle of Normandy would have concluded without Supreme Headquarters Allied Expeditionary Force's determination to resource the deep battle in this way. However, it did not succeed in making the close battle of Normandy anti-climactic. As Normandy ground on, even the employment of strategic bombers en masse to augment corps and divisional deep fires in an attempt to clear the way for armoured manoeuvre, did not make the close fight anything less than what we

³*Six Armies in Normandy, John Keegan, Pimlico 1992, pp155-6.*

⁴*Normandy '44, James Holland, Bantam Press, 2019, pp535-6*

know it to be: confused; terrifying; exhausting; debilitating; damaging to mind, body and spirit; and supremely demanding on supply chains. Some 209,000 Allied soldiers died or were wounded in the Battle of Normandy, and the Germans lost around 300,000 killed, wounded and captured. Approximately 15-20,000 French civilians were killed, mostly by Allied bombs.⁴ The timeless truths of the realities of war – in the deep, close or rear – cannot be 'whiteboarded' or cybered away.

HOW WE WILL FIGHT IN 2026

How We Fight 2026 places this recognition of the unchanging nature of war as the ultimate physical contest at its heart. But it recognises the ever-changing character of war. It acknowledges that we need to be more effective at deep battle, more ferocious and lethal when the close battle is joined, and more adept at ensuring that we shield those elements of our fighting system that need to be protected. How We Fight 2026 is the Field Army's conceptual response to the Chief of the General Staff's challenge to mobilise to counter the threats of today. It is a sober and grounded articulation of how we can optimise the capability that we have, or that we know we are likely to have over the next few years. It is how we become as good at fighting as we can be, as quickly as possible, with the resources that we have to hand. How We Fight 2026, and the supporting Project Lewes, must make us more demanding, both of the Army and of wider Defence, to help the fighting Army to be harder, more lethal, faster to the punch, and better able to take a punch. It is also a stretch target that will demand hard work, hard choices, and further evolutionary change to our structures. The concept is built on hard truths.

There has been an unspoken assumption, perhaps since the fall of the Berlin Wall that war has always been at least a decade away. It is a hard truth that that is evidently now not the case, and we have much work to do to get more battle-ready. Having been directed by the Chief of the General Staff to mobilise, we are now regenerating the sort of combat power that we will need to prevail against a peer enemy, actively rebuilding our combat lethality, sustainability and mass. However, we know that we carry risk against our combat potential that may not be mitigated before we are called to battle, and our potential enemy will drive that timeline, not us. Therefore, in basic terms, we need to get better at fighting and as quickly as possible. Accordingly, How We Fight 2026 strikes a balance between high ambition, speed of delivery and credibility. The latter is important, as anything other than a sober and grounded aiming point would

see us lose traction with allies and undermine our contribution to deterrence. We cannot build our recovery around the delivery of niche technological capabilities, with uncertain procurement schedules, which in any case are unlikely to have sufficient quantity or effect to replace proven conventional and crewed combat mass any time soon. How We Fight 2026 is therefore being built on capabilities that we have today or that we can realistically envisage operating in the next two to three years. While new data-centric technologies are at the heart of the new approach, in the 2026 timeframe automated and uncrewed systems are unlikely to appear in sufficient numbers to fundamentally transform our approach to battle; there is no easy tech solution.

The second hard truth is that we will be contested in every domain, and in deep, close and rear. Targeting is key to the How We Fight 2026 approach, but we should be in no doubt that the enemy will not allow us to acquire targets with impunity; he will fight a vigorous counter-fires, counter-special operations forces and counter-intelligence, surveillance and reconnaissance battle, contesting across the domains to deny us decision dominance, and to secure his ability to strike into our deep. The release of a weapon by one of a pair of Su-27s interacting with an RAF RC-135 Rivet Joint operating over the Black Sea on 29th September⁵ last year was described by the Russian MoD as a ‘technical failure’, and that may have been the case. However, the intercept and downing of a US MQ-9 Reaper over the Black Sea by two RFAF Su-27 on 14th March⁶ this year was clearly a much more deliberate act, openly celebrated by Russia with the awarding of medals to the aircrew. Both aircraft were operating legally, on pre-planned flight paths, and in international airspace. However, these incidents are a useful reminder that we must assume that in the future, when we need to prosecute the deep battle, we will need to fight to secure the necessary targeting information.

We should also be careful not to assume that even when we secure that targeting information to enable decision advantage⁷ that the prosecution of the deep will in itself be ‘clean’ and nor should we assume that it will make the close battle ‘anti-climactic’. That deep battle will be attritional. We will not have infinite quantities sensors to find, or precision weapons to prosecute, depth targets, and our most likely enemy has a remarkable and proven combat endurance; it is likely a sound assumption that he will be able to generate more combat echelons than we have high-end, long-range weaponry. So, at some stage, inevitably, the close battle will be joined.



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“In the 2026 timeframe automated and uncrewed systems are unlikely to appear in sufficient numbers to fundamentally transform our approach to battle; there is no easy tech solution.”

The third hard truth is that the close battle has as much potential to be decisive as it ever had. Therefore, we do not have the luxury of taking risk with our close combat expertise, while we seek to enhance our ability to attack the enemy through his depth. Our close battle skills remain fundamental, and as we return to a set of divisional and brigade structures that are increasingly all arms, we have set the conditions for the restoration of combat expertise across the breadth of the Field Army. The next step is to connect the existing islands of unit and formation level combined arms manoeuvre excellence into an irresistible whole. This requires time, space and resource to allow for hard, and even repetitive, training on command post exercises and in the field, all built on the fundamentals of the manoeuvrist approach. In combination this gives us the qualitative advantage on the field of battle and offsets our relative lack of mass. It also maintains our status as a reference Army with whom others want to ally themselves, to

⁵[bbc.co.uk/news/uk-63327999](https://www.bbc.co.uk/news/uk-63327999) accessed 28 Mar 23

⁶[bbc.co.uk/news/world-us-canada-64972002](https://www.bbc.co.uk/news/world-us-canada-64972002) accessed 28 Mar 23

⁷Land Warfare Centre working definition. *Decision advantage gives leaders time to predict what is coming. It is a culture of ruthless process efficiency, the aim of which is to get information to the right decision-maker by the shortest and fastest route. It places live data at the centre of the decision-support process rather than the traditional people/product model. It focuses human decision-making solely to the points of relevance. A single, common operating picture is accessed through a central portal; always current, multi-domain and all-source. Speed is king; it is generated by maximising machine to machine communication to eliminate voice traffic and FMV as far as possible. It dramatically shortens kill chains now, with utility beyond targeting into other functions, such as manoeuvre, battlespace management and sustainment.*

⁸*Men Against Fire*, SLA Marshall, Morrow 1950, p18

⁹Marshall, p19

partner with, to learn from, and, importantly, not to have to fight against. If the fundamental nature of war is not in question, then the age-old requirement to nurture the moral component of fighting power remains central to any land operating concept.

The fourth truth is that we now need the Army Reserve in the sort of fundamental way that has probably not been the case since the Cold War. Today, in places like Field Army Troops and 77 Brigade, Army Reserve personnel are providing an essential contribution to the intelligence, information manoeuvre and wider specialist support to our Ukrainian partners. To be clear, this is not just an augmentation of a Regular effort; without Army Reserve personnel these functions would simply not get done, or at the very least would be done to a much less high standard. At a more fundamental level, it is not unreasonable to agree with S.L.A. Marshall who wrote in *Men Against Fire* in 1946 that there is “not the slightest possibility that the issues between great nations could be settled by limited forces in a thunderclap of action along their frontiers”.⁸ Countless episodes from history, and the Russo-Ukraine war of today, point to the reality that exquisite weaponry, elite formations, and Regular forces are expended first and sometimes quickly.

*Yesterday’s lessons underscore the moral for today. Once the total context between national societies is predicated, it becomes impossible to write off the ultimate clash between the masses of men who fight on foot. They are the body of the national defense. If foresight has not already assured their prompt and efficient mobilization, the emergency will compel it.*⁹

Accordingly, above all else, we need an Army Reserve that knows that its primary

function is directly aligned to the purpose of the British Army as a whole, which is to 'protect the nation by being ready to fight and win wars on land'. So, we need to focus the resource allocated to the Field Army Reserve to facilitate hard, rewarding, combat-orientated training. In addition, we must close with the detailed work required to further refine the Army Reserve contribution to the NATO tiers of readiness under the force-driving NATO Force Model. Beyond that, the Army Reserve will underwrite the provision of subsequent combat echelons, drawing on the lessons of Operation Interflex. Without the Army Reserve, any notion of maintaining the Army's combat endurance beyond the first 'thunderclap' is fanciful.

THE CHALLENGE

When the Chief of the General Staff directed the Army to mobilise last spring, both the Army HQ and the Field Army wrestled with how to bring substance to that intent. We are frequently – and perhaps rightly – criticised for rushing directly to structural solutions in the face of these sorts of challenges. And our instinct last spring and summer was to do just that. However, as we absorbed the lessons from Ukraine, the Field Army identified that the start point for 'mobilisation' was not structural change, but rather a change in the concept of how we would fight, to reinforce our strengths and mitigate our weaknesses. The concept had to be grounded, based only on capabilities that are in our hands today, or that are in reasonable touching distance. As for further structural change, it was clear that even before How We Fight 2026 emerged that some of our structures could be more efficient and effective, and there is scope for further structural

"As we absorbed the lessons from Ukraine, the Field Army identified that the start point for 'mobilisation' was not structural change, but rather a change in the concept of how we would fight, to reinforce our strengths and mitigate our weaknesses. The concept had to be grounded, based only on capabilities that are in our hands today, or that are in reasonable touching distance."

optimisation perhaps delivered at pace.

There is much detailed work ongoing to bring substance to the concept, detailed elsewhere in the pages of this edition of *The British Army Review*. The key tenets of the concept – the big ideas – all derive from the hard realities explored above.

First, is that we need to establish a 'deep effects systems architecture'. This will leverage the extant land intelligence, surveillance, target acquisition, and reconnaissance programme to create a network into which we will seek to connect national, cross-domain, and Army intelligence, surveillance, and reconnaissance assets to achieve multi-billion data point input; intelligence fusion and analysis facilities with maximum automation; and robust targeting prioritisation processes. This system is the key facilitator for our efficient prosecution of the deep battle, it will drive the targeting of lethal fires and information effect in support of the corps and divisional commander, and

joint partners. To the network, we will add the effectors. Joint and integral deep strike assets (recapitalised M270 plus Precision Strike Missile, along with attack aviation) will be complemented by proven information manoeuvre capabilities. This combination of the architecture and the effectors will achieve a **high tempo find-understand-predict-prioritise-strike deep battle** capability. Its purpose is to isolate the battlespace, degrade the enemy, contribute to airspace and electromagnetic spectrum denial and facilitate freedom of manoeuvre for Army ground and air manoeuvre forces and other components. It must be particularly efficient in weapon-to-target matching to mitigate the limitations on the availability of munitions.

The second key innovation in the concept is to harness our UK-based command and control network to maximum effect. The Land Operations Command has evolved rapidly over the past two years and it now sits at the core of a web of multiple organisations that gather and analyse data (such as the Land Intelligence Fusion Centre or the G6/CEMA Group), conduct targeting (such as the Land Special Operations Cell), and deliver effect (such as 77 Brigade). How We Fight 2026 will tighten connectivity between this community of rear-based command and control capabilities and develop the mechanisms to do much more of the data-processing that hitherto would have been done by large headquarters much further forward in the battlespace. More processing of data, more planning, and more targeting will be conducted by this UK-based network in direct support of commanders forward, with data moving forward and back through the deep effects systems architecture.



If we get this right, and we maximise rear-based data processing, we will, by default, be able to achieve the third thing, which is the minimisation of our command and control footprint forward, and, in doing so, increase our agility and survivability. The era of formation headquarters working out of immobile tent cities that take months to build is surely over. Those canvas metropolises, that we have seen expand in size and sophistication over the years, are an anachronism; they are too easy to find and are prime targets for destruction at the start of hostilities or, indeed, denial before then; the enemy's precision guided munitions, or a sprinkling of Novichok, demand a different solution of us. So, How We Fight 2026 sees us emphasise smaller forward headquarters, 'stripped command posts' hiding and dispersing in the physical terrain and in the electromagnetic spectrum, offsetting the lack of staff mass forward, by reverse franchising the data processing to the rear.

Under this data architecture, and supported by a leaner, faster, approach to command and control, we will seek to enhance the lethality of our combat elements and to sustain them in battle. In the close fight, we must improve our lethality. We will scale up existing and tested dismantled situational awareness capabilities to achieve dispersal, infiltration, concentration and target hand off. Where the close battle is fought, integrated close fires (Archer and Light Gun), deception and electronic warfare and signals intelligence will facilitate tactical ground and air manoeuvre. Battlegroups must become 'Porcupine'. Light Electronic Warfare Teams, Aquila, Puma and a suite of small uncrewed aerial systems at brigade, battlegroup, company and platoon levels will

"Fire and fire potential is decisive. We must now generate greater concentrations of recently proven weapons in which we can have huge confidence, particularly Javelin and NLAW."

be employed to find and deceive. Fire, though, will remain pre-eminent.

"So it is a curious thing that even in professional circles there is a constant obscuring of the main idea that fundamentally fire wins wars and that every other aspect of operation is important only in the measure that it contributes this grand object."¹⁰

Fire and fire potential is decisive. We must now generate greater concentrations of recently proven weapons in which we can have huge confidence, particularly Javelin and NLAW [Next-generation Light Anti-tank Weapon], augmented with one way attack uncrewed air systems. And we also need to recognise that fire will only be maintained if we recognise the non-negotiable requirement to keep that fire sustained. Logistics represent a significant vulnerability. As with our headquarters, we must minimise our logistics footprint recognising that in all futures its signature will remain significant. So the same approach to command and control will apply: minimising, dispersing and hiding our sustainment will

¹⁰Marshall, pp66-7

be key. We have a particular challenge to overcome when we need to reaggregate to ensure that fire is maintained; we need to overcome the challenges of logistics capacity, lift and command and control.

NEW BATTERIES

In 2026, we will fight with the Army we have, not necessarily the Army we would like to have. The concept does not shy away from the likely realities of a war in 2026; those realities are being played out in stark colours in the media today. Rather we need to tackle those realities head on. How We Fight 2026 points to how we can best optimise that which we have in our armoury to maximise our likelihood of winning. It will not be easy, it will be fraught with friction, and it will demand hard choices. The path to 2026 is set out by Project Lewes which draws the strands of work together, develops the How We Fight 2026 capability over time through a series of signature exercise out to 2026, and sets our demand signal for support to the Army headquarters. Our role, as soldiers of the Field Army, is to understand what we are trying to achieve, and our part in Lewes, and then to be active in getting behind the approach. We need to think hard, to innovate, and to be demanding. We have effected rapid change from the line of march before and we must be as ruthlessly efficient in effecting change as we were during the campaign in Afghanistan; war is no longer a decade away.

We do not have time for rumination; uncover your bias for action.





EFFECTING CHANGE FROM THE LINE OF MARCH: THE PATHWAY TO 2026

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THE return of full spectrum conflict to our continent is an abrasive ‘scratch’ of a record stylus across the vinyl of a soporific soundtrack. We should be alarmed. But whereas our generation, one inured to operational continuity through the consecutive ‘decisive summers’ of 21st century counterinsurgency, could be forgiven the impulse to reflect, recuperate and plan to recast ourselves through bold conceptual visions and capabilities sat on the near horizon, our adversaries have been making other plans. And while immediate change may only be a matter of careful iteration, we need to be iterating now.

INTRODUCTION: WHY MCNAIR?

In common with a preceding contribution, this article’s recourse to the half-familiar precedence of the Second World War is not in appreciation of tactical artistry, but one



U.S. Army Signal Corps (Ft. Gordon, GA), circa 1942, Public domain

of direct challenge: to move beyond analyses of tactics and technology toward engagement with the systemic factors inherent to the Field Army’s immediate effectiveness. In this case, it is a return to the successes and periodic failures of

one of America’s most overlooked wartime leaders – General Lesley McNair (inset below left). Once described by General Marshall as “the brains of the Army” in recognition of the intellectual capacity he demonstrated in his career, it was McNair’s particular influence on training, doctrine and equipment development as the US prepared its army for the challenges of the Normandy campaign that is of such enduring significance. But while historical corollaries are in themselves unique to their time (McNair contributed to the growth of the US Army from a strength of little over 100,000 to more than eight million by the end of the war)¹, the contexts against which McNair was required to transform the scale, structures and readiness of the US Army are hugely prescient to the requirements of the Field Army in response to Op Mobilise. In the early 1940s, intractable personnel and capability resource challenges required an approach to force development grounded in pragmatism: “McNair had to construct a doctrine and training regime based on what he had and not what he hoped he might receive at some point.”²

¹ Calhoun, M. T. *General Lesley J. McNair: Unsung Architect of the US Army*. 2015. University Press of Kansas, Lawrence. p 1

² Lamb, C. J. *Leadership and Operational Art in World War II: The Case for General Lesley J. McNair* 2017. *JFQ* 84. p 124. [Authors’ italicisation]

Stark scene: On 31st March 2022 the Ukrainian City of Bucha, Kyiv region, was liberated from Russian occupiers. For 28 days, people lived without electricity, water, heat and communication, cooking food in their yards on firewood. This photo was taken immediately after the liberation of the city.

Image courtesy of Reuters and Alex Kent (CC BY 2.0)



“Ukraine now teaches us that there are more constants than accelerants in 21st century warfare: the visceral nature of war endures. And though some of the accelerants have the power to be very significant – and we must pace them – we must continue to emphasise the stark continuities of peer-on-peer warfare.”

But how does the scholarly excavation of an individual, objectively fascinating but hitherto best known to UK audiences as the highest-ranking US fatality of the Second World War, inform our response to 21st century ‘constant competition’ and bring focus to the interim force development model we need to support How We Fight 2026? While it is easy to overstate the parallels of history, time lost in the institutional recuperation from two decades of counterinsurgency warfare will not effectively prepare us for the dramatic acceleration of the strategic threat. Left unchecked, it presents no less risk of functional inertia than the interwar years of neutrality imposed upon the US Army:

With a tiny regular army, no reserve, and an unevenly trained National Guard, America’s generals faced the challenge of preparing to fight complex, mechanised combined arms warfare while leading an army made up almost entirely of raw recruits, using far more advanced equipment than anything used in the previous war.³

Conversely, the experience of high intensity warfare in Syria, Yemen, Nagorno-Karabakh and most obviously Ukraine has provided the forces of our modern-day competitors – who in areas, are no less clever and talented than our own – opportunity to learn the harder lessons of combat, while innovating: adapting commercially available technology into their tactics, techniques and procedures for decisive effect. Moreover, with warfare remaining technology’s ultimate accelerant, we can observe with some irony that the asymmetries of counterinsurgency are now inverted: because our adversaries have had sustained access and tactical engagement with equipment that our soldiers currently do not. And given current patterns of human development and technological change sit somewhere between the exponential and the hyperbolic, we must accept that loss of momentum today would be utterly unrecoverable on the day of battle.

So like McNair, we must build from the ground up. Because the opportunities afforded by the

recapitalisation of ‘hollowed out’ structures are far from immediate: “the criticism of ‘it needs to happen now’ is these things don’t ‘happen now,’” the Secretary of State recently explained, “there’s no magic wand, there’s no factories whirring away where you just press buttons and they come.”⁴ In contrast, McNair had a quite different challenge: influencing Roosevelt and the political leadership of the US to recognise (at all) the severity of the impending war and the scale of transformation that the Army required:

At the time of the Munich crisis, [Roosevelt] had mused that ‘pounding away at Germany from the air’ would crack the morale of the German people. ‘This kind of war...would cost less money, would mean comparatively

³Calhoun, M.T. 2015. p.4

⁴Sky News. British Army Has ‘Fallen Behind’ and ‘needs investment’ – Defence Secretary Ben Wallace. 30 January 2023. [news.sky.com/story/british-army-has-fallen-behind-and-needs-investment-defence-secretary-ben-wallace-tells-sky-news-12799230](https://www.sky.com/story/british-army-has-fallen-behind-and-needs-investment-defence-secretary-ben-wallace-tells-sky-news-12799230). Accessed 20 Apr 23.

few casualties, and would be more likely to succeed than a traditional war by land and sea'...He argued that if America had 5,000 planes that summer and had the capacity to build 10,000 more each year, 'Hitler would not have dared to take the stand he did.' With the exception of the exultant AAC commander, General H.H. 'Hap' Arnold, this belief in the strategic bomber's assumed war-winning potential greatly disturbed most of Roosevelt's advisors, who preferred a balanced force.⁵

But mercifully, we are not at war. At least, not yet. And change we have made recently toward the introduction of genuinely adversarial training beyond Mission 0; coupled with the nascent ability to measure the impact of different training interventions; is increasingly providing the opportunity to recover a deficit comparable to the one faced by McNair. Learning from his experience, we must now ensure that our first battles evoke Operation Cobra more than the disaster at Kasserine. To do this, we must equip ourselves with a training and force development engine to support the imperative presented by How We Fight 2026; recovering the growing gap between what the Field Army needs; of that what it has, and that which it is missing. We see this system as comprising five broad components.

⁵Calhoun, M. T. 2015. p.209

⁶Most notably, in a speech recorded on 1 December 1942: "Our soldiers must have fighting spirit. If you call that hating our enemies, then we must hate with every fibre of our being. We must lust for battle; our object in life must be to kill; we must scheme and plan night and day to kill...Since killing is the object of our efforts, the sooner we get in the killing mood, the better and more skilful we shall be when the real test comes. The struggle is for survival: kill or be killed." cf. Lamb, C.J. 2017.p.125

⁷Palmer, R.R. Wiley, B.I. and Keast, W.R. *history.army.mil/html/books/002/2-2/index.html* - U.S. Army Center of Military History 1948 (1991) p.448 (Accessed 15 Apr 23).

⁸Ibid p.448-449

"We must equip ourselves with a training and force development engine to support the imperative presented by How We Fight 2026; recovering the growing gap between what the Field Army needs; of that what it has, and that which it is missing."

1. THE CENTRALITY OF LESSONS

Against an adversary whose capacity to learn lessons derives little from the calculus of battlefield casualties, we must counterpose the irrefutable logic of one of McNair's more quotable interventions: "soldiers learn quickly and well in battle – no doubt about that" he would explain, "but the method is costly to both you and the nation." Yet despite McNair's furious work ethic and sometimes irascible manner⁶ he is otherwise remembered by his immediate staff as deeply personable with an innate gift for pedagogy:

Training... steadily improved in 1943 and 1944 in spite of continued personnel problems and shortages of equipment. Of the many factors contributing to this improvement... was the inclusion in the training program of lessons learned from American experience in combat theatres. Moreover, participants returning from theatres were sometimes brought to the War College for personal interviews...[and] lessons disseminated to subordinate commanders by means of letters and conferences.⁷

Indeed, Ukraine now teaches us that there are more constants than accelerants in 21st century warfare: the visceral nature of war endures. And though some of the accelerants have the power to be very significant – and we must

pace them – we must continue to emphasise the stark continuities of peer-on-peer warfare.

2. A PACING THREAT

The US Army's first encounter with a numerically inferior German force at Kasserine Pass in February 1943 ended in decisive failure. In sustaining casualties that surpassed 3,000 killed or wounded, US losses were threefold those of Rommel: contributing to the battle's prevailing historical appreciation as one of America's most chastening military defeats. But for McNair, the debacle served only to intensify his drive for battle inoculation and hardened realism in training. Emerging from our years in Iraq and Afghanistan, we too must sustain a firm resolve on the requirement to train against the real pacing threat, and not our last adversary. Never again would we wish to deploy unprepared for the realities of our opponent: on the same page that the US remembers Kasserine, let us now record those callow years in Iraq, informed more by the spectres of South Armagh than by Hezbollah.

[An] important factor which improved the preparation of divisions in 1943 was the infusion of greater realism into the training program...[courses should] "resemble the battlefield rather than the gymnasium" and provide training in such tactical problems as attacking fortified areas, combat in cities, and infiltration.⁸

And so we created Task Force Hannibal, building space within our collective training for a genuinely adversarial contest across a highly metricised training environment. Hannibal now leads the development of the British Army's professionalised opposing force capability, designed to test exercising troops in combat ready and mission ready training events. It delivers a threat-driven, free-thinking, appropriate, relevant opposing force and adversary, capable of defeating



Free-thinking 'foe': Task Force Hannibal has sharpened the edge of collective training events, such as Exercise Wessex Storm.



blue forces across the spectrum of collective training. But empirical, data-driven training must nonetheless elicit an emotional response, it must be visceral: sufficiently resonating with the training audience to effect behavioural change.

COMPONENT THREE: THE COMBINED ARMS BATTLE

Through the establishment of the Combined Arms Manoeuvre Centre, the Land Warfare Centre is now effectively poised to drive excellence in the constituent parts of the combined arms battle. Our agenda is to combine more regularly, and at ever lower level. We recognise that to best support the vision of How We Fight 2026, we need to reform the delivery of trade training and battle craft syllabus: allowing our units to then realise the benefits of our increasingly sophisticated collective training. Moreover, it is recognised that across the Field Army, battle craft syllabus requires far greater stability, and should be delivered on the richest possible training architecture: with central coordination to allow for rapid transfer of learning and new technology. And fundamentally, it must be delivered in a combined arms manoeuvre

environment to a combat ready standard; enabling more units to arrive for Land Warfare Centre-enabled collective training sufficiently prepared to pass Mission 0 at the earliest opportunity. Only then do we create the necessary headroom to move toward adversarial optimisation: our surrogate for war and the arena where there is greatest individual and organisational learning.

As the Land Warfare Centre continues to develop its future training system, one that seeks to generate maximum efficiencies at a time of acute scarcity through initiatives such as Combined Warrior⁹ and the creation of overlaps between individual and collective competency, we must also improve productivity by consolidating training outputs and better enabling adaptation and recapitalisation through more centralised control. Central to this will be the support of technology through enhanced functional relationships with commercial partners and

⁹A new framework for integrating Combined Arms Subsequent Trade Training courses based at the Infantry Battle School: to be piloted in 2023.

learning from experience: maintaining the critical ability to ‘train as we would fight’ and retaining competitive advantage. Recent developments through the framework of Project Lewes’ lines of operation focused on achieving ‘decision advantage’ will also require the acceleration of current work capturing lessons of the current conflict and fusing them through the Army’s Futures and Information Directorates as well as Field Army formations: an enterprise approach to lessons exploitation; informing decisions with information drawn from sources beyond the land domain.

COMPONENT FOUR: EXPERIMENTATION AND OPTIMISATION

The Land Warfare Centre will continue to protect and invest in our ability to experiment safely, innovate constantly, and field quickly. McNair’s well-documented misgivings regarding the effectiveness of US materiel are instructive. He knew, for instance, that the US manufactured 37mm antitank weapon was significantly underpowered against the German Panzer IV but devoid of any influence over the Army Ordnance Department, or



“Metrification has driven new honesty on our collective performance and the individual humility we all require to enable change.”

personal or professional lives – the human response to change is laden with emotion. Because as much as our experiences chart the course of our successes and failures, they also interpret the present and shape our expectations for what follows: we define the future in the language of our past. But we must now change the way we change – seizing our agency at every level to drive change from bottom up, being entrepreneurial, adapting and iterating: an aggressive focus on bridging from ‘home bank’ (the ‘what we have now’) toward the emerging vision of the ‘far bank’ – Project Wavell.

Inherent to this approach is the clear requirement to accept the strategic realities of our current position. We are a compact and busy army, with small fleets getting smaller: our scale now dictates that training opportunities must be more proximal.

Realism in divisional training was further promoted by the conversion of the California-Arizona Manoeuvre Area to a model theatre of operations. This arrangement permitted divisions, after they completed regularly scheduled manoeuvres, to devote 13 weeks to ‘post-graduate’ training under a play of influences bearing the closest possible resemblance to combat conditions.¹¹

So this logic is nothing new, and like McNair we need a training system embedded in the homeland, delivered in UK and that can – in extremis – be upscaled rapidly. It must use every bit of the UK defence training estate and our global hubs as productively and sustainably as possible: all while retaining a dynamic ability to deploy high quality training support anywhere in the world.

This will place a new burden on our ability to generate, curate and interpret data. It will, without doubt, contribute to a culture of wider metrification which we may at first find deeply uncomfortable. We recognise that every aspect of our working environment is becoming subject to this trend toward metrification: from the in-barrack culture of our units through the Climate Assessment; to our comparative training performance through MIMIR [exercise management software]. Painful it may well be, but this metrification has driven new honesty on our collective performance and the individual humility we all require to enable change.

EPILOGUE: “THE TROOPS SURE LIKE TO SEE YOU UP FRONT”¹²

Meaningful change ‘from the bottom up’ will elude us unless driven by leadership at every level. The tragedy of McNair’s death, caused by direct hit from a 100-pound bomb dropped by a US Army Air Force P-47, lies not in that he need not have been alongside his troops in a forward foxhole, but that he felt strongly that he should. Transformation must be led. For our part, the interim proposition of How We Fight 2026 as a pathway to Wavell will only be realised through decisions we take today. So while concepts such as ‘decision advantage’ may – for now – seem ethereal, we must immediately recognise the profound implications for the future of operational level command and change the preparation we provide to tactical leaders. It will, for instance, almost certainly require the redesign of both Command Post Battle Craft Syllabus and some aspects of professional military education to better equip headquarters staff with the techniques and tolerances required for accelerated change. But this cannot be the limit of our ambition given the immediacy of the challenge: commanders on the forward echelon require new heuristics; focused instincts, impulses, and behaviours; by, with and through a grounded and inherently pragmatic operating approach. Accordingly, we will continue to iterate our system of professional military education such that it prepares our officers to fight, while capitalising on the cultural gains of the ‘empowerment’ initiative to further develop the Field Army.

And there are clear grounds for optimism in our culture. Op Mobilise gives us a clear, unambiguous purpose. We continue to produce good leaders, and our training and educational model is supportive and increasingly sophisticated. Once we have a stable training cadence and progress in the flow of resource and equipment, the conditions will be set for the improvement in our competency and capability with an appropriate mix of support and holding to account. We see this already in our best resourced areas and detect emerging confidence elsewhere.

¹⁰Lamb, C.F. 2017. p 124.

¹¹Palmer, R.R. Wiley, B.I. and Keast, W.R. 1948 (1991) p.450

¹²Last words spoken (by an unidentified individual) to McNair on 25 July 1944. Calhoun, M.T. 2015 p.322.

ability to set resource priorities, made fielding new weapon systems hugely challenging: but it was something he had to live with.¹⁰ But against an adversary equally capable of learning and adaptation, we must also be mindful of a ‘concentricity’ of our lessons ‘loops’. In a recent contribution to the *This Means War* podcast, Dr Jack Watling explained: “Until you have experimented and tested a new capability, you don’t know how best to employ it... there is a tension here: making sure you experiment sufficiently so that you know how to employ something at scale without enabling our adversary to adapt at a time you’re trying to innovate... so much that it doesn’t give you the competitive advantage you hoped.”

A sober and grounded pragmatism to our fielding programme is therefore critical to the integrity of the How We Fight 2026 proposition: specifically, the requirement to balance tested and untested capability.

COMPONENT FIVE: THE REALITY OF CHANGE

Irrespective of the context – be it in our



AUTHOR

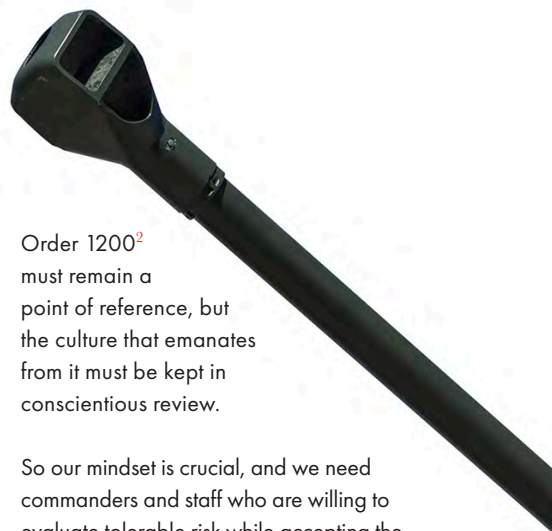
Colonel Toby Till is Commander of the Experimentation and Trials Group.

ENHANCING BATTLEGROUP LETHALITY FOR 2026

Incoming: Forming an interim replacement for the 32 AS90s the UK gifted to the Armed Forces of Ukraine, the British Army is set to receive 14 Archer 6 x 6 artillery systems as part of an agreement struck with Sweden. Designed and built by BAE Systems Bofors, the fully automated, self-propelled 155mm howitzer gun is designed for rapid deployment, with a firing range of 50km.

UNDER Project Lewes, the Experimentation and Trials Group was tasked to identify how the Field Army might advance the lethality of our battlegroups by 2026. Many may assume that a battlegroup lethality¹ line of effort is the simplest to resolve and equally as many will likely, based upon their experience, believe the solution to be intuitive. This paper therefore seeks to actively promote discussion: invites response and seeks to encourage an intellectually enterprising approach to the issue.

From the outset, it would be disingenuous to over-emphasise potential financial or commercial issues as the greatest hurdles to advancing battlegroup lethality. We should instead critically reflect on our own risk appetite and associated safety regulators: challenging where a fixation on *blameworthiness* could inhibit progress and timely experimentation. There is clearly no comparable context provided by a war of existential significance, but there will be pertinent lessons to derive from the contrast between our own ability to advance battlegroup lethality with that of our Ukrainian partners. The legal framework outlined in Army Command Standing



Order 1200² must remain a point of reference, but the culture that emanates from it must be kept in conscientious review.

So our mindset is crucial, and we need commanders and staff who are willing to evaluate tolerable risk while accepting the reality of being held to account for failure. As has been noted previously by Director Land Warfare, this will require a profound cultural change: but one that can absolutely catalyse our speed of delivery. This approach must also be necessarily Whole Force, encompassing the Defence Infrastructure Organisation, Defence Safety Authority and Military Aviation Authority; who must all play a key role in ensuring this journey delivers the progress required to keep us 'at pace'. This may also mean that policy and current regulatory frameworks will need to be changed, something which may be achievable

¹OED - 'The capacity to cause death or serious harm or damage'.

²Derived from the Health and Safety at Work Act 1974.



given the level of senior engagement across the Field Army and Army Headquarters.

CHALLENGE OF HOW WE FIGHT 2026

Through the compelling vision presented in How we Fight 2026, Commander Field Army makes clear the imperative that battlegroup lethality must not just be seen uniquely through the prism of battlegroup fires, but through the broader ability to find, understand, decide and strike with multiple layered capabilities; all whilst concurrently sustaining and surviving. It emphasised the need to:

Find and understand. A suite of small unmanned aircraft systems at battlegroup, company group and platoon levels will be employed to find and deceive, and by 2026 we must be capable of some form of kinetic small unmanned aircraft system effect.

Fight. Integrated close fires (self-propelled artillery, light guns and mortars), deception and electronic warfare and signals intelligence will facilitate tactical ground and air manoeuvre. We will scale up existing and tested Android tactical assault kit-enabled dismounted situational awareness capabilities to achieve dispersal, infiltration, concentration and target hand off.

Battlegroups must be 'Porcupine': using layered

³Preliminary Lessons in Conventional Warfighting from Russia's Invasion of Ukraine: February–July 2022 Mykhaylo Zabrodskiy, Jack Watling, Oleksandr V Danylyuk and Nick Reynolds Jul 22 and Achieving Lethal Effects by Small Unmanned Aerial Vehicles: Opportunities and Limitations Dr Jack Watling, The British Army Must Extend the Range of its Precision Strike Capability by Jack Senogles Mar 2020 and Leveraging Loitering Munitions by Maj Brennan Deveraux US Army.

⁴Argentina has committed to purchase Israeli Uvision Hero-120 and Hero-30 Loitering Munitions.

⁵A Ukrainian soldier in the urban assault carries at least 10-15 HE grenades.

"Our mindset is crucial... we need commanders and staff who are willing to evaluate tolerable risk while accepting the reality of being held to account for failure."

intelligence, surveillance and reconnaissance with access to the deep effects systems architecture, they can see further (and so disperse and survive better); with integral and/or available enhanced strike capabilities they can hit further and harder. Enabling to the lowest possible level (company grouping, platoon grouping) will demand the robust application of mission command, and the evolution of new tactics.

Survive. Battlegroups will survive by minimising signature, moving often and leveraging available technology such as ground sensors, radar and counter-unmanned aircraft system.

The change of approach signified by How we Fight 2026 now provides the opportunity to address the well documented concerns of the Army's critical friends³ that we have lost ground over the last two decades and failed to modernise in key areas. These commentators contend that if left unchecked, we run the risk of being out sensed, out ranged and out gunned on the surface and near surface by a competent adversarial peer.

In determining a 'Benchmark 10', the Experimentation and Trials Group conducted a capability 'gap analysis'. Despite observing their employment in recent conflicts such as the Yemen, Nagorno-Karabakh, in Iraq, Syria and most recently in the war in Ukraine, our engagement with capabilities such as tactical loitering munitions lacks maturity: especially noting that even Argentina has recently invested in this area.⁴ Elsewhere, and though fully anticipated, support to our Ukrainian partners has also pressurised our close support artillery capability, an issue even more pressing given the limited mobility of our light guns. Our light battalions need greater range, night vision and an 'overwatch' capability to replace the withdrawn Striker Swingfire Combat Vehicle Reconnaissance (Tracked).

We may also need to countenance interventions in current capability acquisition, because to effectively realise the 'Porcupine' analogy, our new mechanised infantry vehicle may require greater firepower than is currently anticipated on the funded programme. We may also require better counter mobility demolitions to blow tunnels; a direct fire gun of sufficient enough effect to destroy enemy occupied buildings/infrastructure and the remote ground sensors to find, and dominate, the sub-surface battlespace. We need to make incremental steps now, rather than trying to build a 'gold-plated' kill chain solution from a standing start. Many of these improvements are common to all battlegroups be they armoured or light. Some will be attached to a battlegroup, but most should be integral All Arms capabilities with adjusted tactics, techniques and procedures as we learn from Ukraine and focus on the lowest tactical level.⁵ Alongside a more agile approach to procurement, we must not be resilient to structural change that will deliver our outputs more efficiently and effectively; agile force design is a critical component of our future work.





Better connected: How we Fight 2026 will see the scale up of existing and tested Android tactical assault kit-enabled dismounted situational awareness capabilities.

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THE 'BENCHMARK 10'

In order to gauge our progress on the pathway to optimised lethality at battlegroup level, the Experimentation and Trials Group has benchmarked ten capabilities (or attributes) for enhancement, conducting an analysis of the cross-Defence lines of development requirements of each, and other associated dependencies:

1. **Enhancing range.** A threefold increase in lethal range: achieving battlegroups that fight into a brigade space and brigades that fight into the divisional space.
2. **Recasting battlefield geometry.** A full re-evaluation of tactical calculus including assumptions such as the historical frontages of units and formations.
3. **Enhanced move, hide and survive.** In both physical and electronic environments.
4. **Enhancing surface lethality.** From section to battlegroup, with an emphasis on loitering munitions but also direct and indirect fires.
5. **Enhancing near surface lethality.** Sensing and defeating enemy unmanned aircraft systems; including a counter-unmanned aircraft system remote weapon station on the Boxer mechanised infantry vehicle and dismounted equivalents.
6. **Enhanced sensor array.** From section to battlegroup including small unmanned aircraft systems, electronic warfare and remote ground sensors.

7. **Enhanced battlegroup counter mobility.** Incorporating assault pioneers and explosive barriers.

8. **Enhanced brigade (+) counter mobility.** Incorporation of air delivered mines and breaching; including new tactics, techniques and procedures, structures and ethos.

9. **Enhancing light gun mobility** by using alternative existing platforms or readily available commercial/military off-the-shelf solutions.

10. **Enhanced communications and information systems.** Better integration of the battlegroup with effective sensor, decide, effector kill chains: development of Bowman and the Army-wide fielding of dismounted situational awareness.

THE CRITICAL PATHWAY

From these ten enhancement benchmarks, the Experimentation and Trials Group proposes six lines of operation in which to try and advance battlegroup lethality. Some elements of battlegroup lethality are being developed under the direction to improve capability in the '4+1(+1)⁶', but the capacity of Defence Equipment & Support and our commercial partners to deliver change at the speed we require will be a challenge. As a minimum the Experimentation and Trials Group need to demonstrate to senior leaders, with evidence, the advantages that advancing battlegroup lethality can bring to survivability and

⁶EW, UAS, Air Defence, Long range fires + logistics (+CIS).

tempo. This can then inform future balance of investment decisions for the next *Integrated Review*, whilst making incremental changes to some of the Field Army now in line with the Army's priorities. The six lines of operation are:

Loitering munitions. The main effort must be focused on rapidly procuring loitering munitions. Loitering munitions, from section to battlegroup, are already included in both the Directorate Futures Army Warfighting Experiment (Blunt and Dislocate) proposal in 2023 and the Future Force Development Human Machine Teaming project. There is therefore a route to experiment in 2023 and then to exploit in 2024-25. The aim is to test fire with industry in the summer of 2023.

Indirect fire. The gaps in our indirect fire capability must be addressed. The initial focus must be on the interim 155mm solution; the Royal Artillery Trials and Development Unit will support the rapid trialling of this new capability, whilst the Deep Recce Strike will provide the experimentation troops. This may logically evolve as a divisional asset that sits in the Deep Recce Strike Brigade Combat Team, but the assumption must be that fighting battlegroups will be guaranteed indirect fire support. The Royal Artillery Trials and Development Unit must also lead on enhancing the mobility of the light gun by proving that Jackal, in service with 7 Para Royal Horse Artillery and 29 Commando Regiment, can pull a light gun and ensure the safety case is updated. A recoilless 105mm mounted on a Supacat Coyote and Brimstone Wolfram will also be tested in experimentation and new mortar platoon tactics, techniques and procedures are already being developed by 2nd Battalion, Royal Yorkshire Regiment.

Vehicle lethality must be improved. The Directorate Futures Human Machine Teaming Project includes light, medium and heavy unmanned ground vehicles which will provide direct fires lethality for light forces up to 30mm calibre. A remote weapon station enhancement to Boxer is also under consideration which may also include a counter-unmanned air systems capability.

Near surface. Our vulnerability to near surface threats must be addressed. Project 6 is a Directorate Futures Joint Effects-funded initiative to rapidly deliver both dismounted (Q4 23/24) and vehicle mounted (24/25) counter-unmanned air systems capability. The Experimentation and Trials Group will also exploit near surface detection and electronic warfare capabilities, in small numbers, to test and demonstrate their utility

on Exercise Wessex Storm 1/23. We need to think of electronic warfare like electronic countermeasure, it is not a divisional asset that soldiers rarely see at battlegroup level or below; electronic warfare and counter-unmanned air systems must be all arms capabilities. Electronic warfare and signals intelligence will remain the domain of specialists due to capacity in the short term, but I sense the need to grow this down to battlegroup level in the future.

Dismounted close combat lethality.

Increasing dismounted close combat lethality in the round will be explored from surveillance target acquisition to weapons and breaching demolitions. The initial focus will be on enhancing anti-tank lethality with light Javelin Command Launch Unit and Carl Gustaf⁷ as well as a new 60mm mortar, support weapon sights and a new 7.62mm light machine gun.

Integration. This is an overarching line of operation to ensure all of the above is networked and fused at battlegroup level through the dismounted situational awareness or similar capabilities. Multiple full motion video feeds should be avoided; data sent as an automated kill chain message to the operations officer who is then able to provide artificial intelligence-enabled target proposals is the aiming mark. This also needs a highly mobile infrastructure at company and battlegroup level, i.e. something that can work on the move and be fully operable within three minutes of halting. Critically this must integrate with higher echelons and with multi-national partners.

MEETING THE CHALLENGE

Low level trials and experimentation on battlegroup lethality will continue exploiting opportunities with other front line commands and allies. 2nd Battalion, Royal Yorkshire Regiment have already deployed a platoon (+) to the US on the Army Expeditionary Warfighter Experiment at the US Ground Manoeuvre Centre of Excellence in Fort Benning. Their focus has hitherto been on small unmanned air systems, including loitering munitions and counter-unmanned air systems, but this will now be developed into an ongoing opportunity to learn from a key ally and develop our tactics, techniques and procedures. In April 2023, a 2nd Battalion, Royal Yorkshire Regiment Experimental Company Group also deployed under the 1 Royal Irish

“We must rediscover our appetite to conduct battlespace management at pace while carefully calibrating activity where there is genuine risk to life. If we are to trust our future leaders to be more lethal, we need to inculcate this trust at the start of their training.”

Battlegroup to trial, experiment and test remote and autonomous systems equipment, structures and tactics, techniques and procedures; all enabled by a new tactical experimental network. The capabilities were then highlighted at the Project Lewes launch event on 11th May to a select group of influential VIPs.

And even though How we Fight 2026 and Project Lewes are Field Army initiatives, the Experimentation and Trials Group will also utilise Project Wavell and the Future Land Operating Concept to guide their outputs and will exploit the Directorate Futures Army Warfighting Experiment. Moreover, they will deliver a series of experiments from summer through to Christmas this year focused on a range of lethality capabilities including loitering munitions from section upwards. We will also be examining how these capabilities can be integrated at battlegroup level, and how the structures and tactics, techniques and procedures might or should change: this will be the specific focus of the Experimentation and Trials Group live exercise in September/October 2023, while also testing an interim robotics and autonomous systems enabled battlegroup in a series of novel locations. Another key aiming mark is the US-led Project Convergence Capstone in March 2024,

during which we will seek the opportunity to integrate a more lethal UK battlegroup alongside our strategic ally, engaging elements from across the Army and Defence to enhance the sensor, decider, effectors kill chain; focusing also on the passage of data across multi domain and multi-national networks. Live exercises will return from 2024 onwards with a greater focus on armoured lethality and again to seek to exploit the Army Warfighting Experiment in 2024. Throughout all this, and where opportunities arise, the Experimentation and Trial Group will habitually seek to deploy elements of this new battlegroup lethality on overseas training exercises to the land hubs or on operations.

At the moment, we do not anticipate money being the primary limiting factor; instead, it may be process, commercial capacity, and our appetite for risk. We will work to get better at exploiting the nine months of trials, and openly engage with industry on the annual Army Warfighting Experiment in order to enable the procurement of other small capabilities and seek to deploy them on operations precipitously. We must also change the current unmanned air systems/remotely-piloted air systems categorisation and ensure that flying beyond visual line of sight is a routine all arms activity, not just a Royal Artillery specialisation. The Infantry Trials and Development Unit is already working with the Military Aviation Authority and Field Army Surveillance Group to seek a change to current policy. We must also identify a UK training estate for routine trials, thus avoiding having to fly to the US or Israel to conduct experimentation: then accelerate the opportunities for our people to get ‘hands on’.

Finally, while vehemently protecting our license to operate, we must not fall back on taking the least risk, missing opportunities to hone our lethality. We must rediscover our appetite to conduct battlespace management at pace⁸ while carefully calibrating activity where there is genuine risk to life. If we are to trust our future leaders to be more lethal, we need to inculcate this trust at the start of their training. After all, the greatest risk is being less lethal in the war to come where, if recent events in Ukraine are an indicator, the close fight will not be unclimactic and we should be doing everything we can to make it easier to win for our people.



⁷A 84 mm recoilless rifle.

⁸In a 10min window in a 1km square around a PB we used to regularly integrate; DH UAS, Avn, 81mm mortar, 105 Lt Gun, CAS Strafing runs and an ISTAR balloon.



BUILDING THE BRITISH ARMY'S FIRST RECCE-STRIKE COMPLEX

AUTHOR

Brigadier Neil Budd assumed command of the 1st Deep Recce Strike (DRS) Brigade Combat Team on 1st July 2022. He has predominantly served with 1st Regiment Royal Horse Artillery where he was commanding officer.



EVEN before the war in Ukraine, it was recognised that the British Army needs to fight at greater range. With the growing prevalence of long-range fires and omnipresent intelligence, surveillance, target acquisition, and reconnaissance systems, armies that can converge effects in the deep are able to fight with an increased stand-off and preserve combat power in the close. This can secure a decisive advantage.

Future Soldier sets out the Army's response, with a renewed emphasis on deep and the formation of 1st Deep Recce Strike Brigade Combat Team (1 DRS BCT) to "combine recce and long-range precision strike".¹ In the wake of the war in Ukraine, Op Mobilise has reinforced this with the '4+1' investment priorities. Alongside air defence, these see investment prioritised in the deep battle through long-range fires, uncrewed air systems and cyber and electromagnetic activities, as well as the associated ammunition stockpiles.

1 DRS BCT uniquely combines recce, surveillance and target acquisition and long-range fires, which, in the context of pivoting to the deep, means it has the potential to change the way the British Army fights.

The premise for DRS in *Future Soldier* is clear and aligns with views that armies must invest in the deep to win. Its realisation has removed the formation boundary between sensors, deciders and effectors thereby allowing us to build the British Army's first recce-strike complex which can deliver multi-domain integration for 3 (UK) Division by design and give the Army an asymmetric advantage.

Since the DRS' formation on 1st July 2022, with events in Ukraine and capability concerns as catalysts, the concept has been reassessed from first principles. This article will set out the component parts of the DRS

¹*Future Soldier – Transforming the British Army* dated March 2021.



and how it delivers the British Army's first multi-domain recce-strike complex. It will explain how the DRS fights. How, exploiting networked command and control and mission command, the DRS builds a system of systems that will find, understand and strike the enemy at a greater tempo to win the counter-recce and counter-fires fights – giving the close a decisive advantage. It will unpack the DRS's wider utility, demonstrating its role across Defence's Integrated Operating Concept² and will set out how 1 DRS BCT is contributing to operate tasks already. It will explain how the DRS can contribute to deterrence by holding key adversary capabilities at risk; adversary capabilities it can then strike if deterrence fails, as the land contribution to the multi-domain counter-anti-access and area denial battle.³ The article will finish by explaining how innovation and a programme of exercises is addressing the key challenges to deliver the DRS as a fight tonight capability – initially focused on the proximate threat in Europe, but with the

“1st Deep Recce Strike Brigade Combat Team uniquely combines recce, surveillance and target acquisition and long-range fires, which, in the context of pivoting to the deep, means it has the potential to change the way the British Army fights.”

ability to flex the concept globally. This will illustrate that DRS is as much a concept as it is a brigade combat team and its logic can be replicated across the Army.

WHAT MAKES UP THE DRS

Future Soldier defined the DRS through the inputs of Ajax and long-range fires, but considered against its outputs, its constituent parts are much more than that. Where before there was one divisional recce battlegroup, there are now three DRS battlegroups. DRS battlegroups because they integrate surveillance and target acquisition and fires capabilities by design. Two are based on armoured cavalry regiments – The Royal Lancers, who have converted from Combat Vehicle Reconnaissance (Tracked) to Warrior to sustain the armoured cavalry regiment capability until Ajax arrives, and the Household Cavalry Regiment who have started the conversion to Ajax, with the first troop of vehicles in Bulford now.⁴ The third is light cavalry, formed around 1st The Queen's Dragoon Guards in the High Mobility Truck Variant⁵ and drawing on their formation recce experience from Op Newcombe.⁶ Together, the three battlegroups can blend recce-by-fire with recce-by-stealth. They can be postured

²Dated March 2022

³Anti-Access and Area Denial (A2AD)... will be used by an adversary to prevent or limit entry and manoeuvre within an operational area. A2AD will force the commander to transition from movement... to manoeuvre... A deep penetration as part of land manoeuvre or joint theatre entry will require activity across multiple domains ... to overcome enemy A2AD. JDN 1/17, Joint Theatre Entry, Chapter 3.

⁴Current planning target is to deploy a combined arms troop on Ex Iron Titan in September 2023.

⁵The current nomenclature for the Supacat 'Jackal' vehicle bought as an Op HERRICK UOR.

⁶Deployed as the Long Range Reconnaissance Group in support of UN operations in Mali.

⁷Mobile Fires Platform, the project name for the British Army's next 155mm self-propelled gun.

⁸The M270 Multiple Launch Rocket Systems held by the British Army will be rebuilt and updated in the USA to both extend their lifespan and to permit a wider array of modern ammunition types to be fired.

with mutual support to permeate the divisional depth and deliver persistent ground mounted reconnaissance that is integrated by design with surveillance and target acquisition and fires capabilities. 5 Regiment Royal Artillery is the final organic part of the surveillance, target acquisition and reconnaissance complex. It has been restructured and now delivers surveillance and target acquisition tactical groups into the DRS battlegroups that are cohered with surveillance, target acquisition and reconnaissance tactical groups from 32 Regiment Royal Artillery that support the close brigade combat teams. 5 Regiment Royal Artillery's batteries are now multi capability, delivering radar (MAMBA), sound ranging (ASP) and mobile surveillance sections (lightweight counter-mortar radar, lightweight surveillance and target acquisition radar) integrated across the divisional battlespace. 5 RA is also growing 4/73 Battery, delivering long-range stay behind observation posts.

Integrated within the surveillance, target acquisition and reconnaissance elements are the organic strike capabilities. 1 Regiment Royal Horse Artillery (1 RHA) and 19 Regiment Royal Artillery (19 RA) deliver the 155mm close support artillery. In the wake of gifting of AS90 to Ukraine, Archer 6 x 6 will provide an interim 155mm capability ahead of the Mobile Fires Platform⁷ programme coming into service. Mobile Fires Platform will ensure the DRS BCT can be massed and flexibly employed across the battlespace, typically in support of the close brigade combat teams but advances in munitions and range will allow it to be massed for effect in the deep too. 3 Regiment Royal Horse Artillery (3 RHA) and 26 Regiment Royal Artillery (26 RA) deliver the multiple launch rocket system general support artillery. From 2026 multiple launch rocket system re-capitalisation⁸ will deliver launchers with extended range able to fire area and point rockets, including the Precision Strike Missile.

Sustaining 1 DRS BCT in the anticipated battlefield geometry of a large-scale combat operation will be a challenge, but solutions are readily available. 6 Battalion REME is the regular unit onto which supply, transport and medical capabilities will be task-organised. In the divisional context, 6 REME will lead the deployment of the BCT's brigade support group – though it will require significant reinforcement from RLC specialists. The DRS brigade support area will likely be positioned forward of the divisional support area near the forward edge of the divisional rear or towards the rear of a manoeuvre BCT's battlespace. The brigade support group will face the challenge

of having to sustain DRS reconnaissance battlegroups operating at significant reach in the divisional deep, alongside close support, surveillance and target acquisition and deep fires batteries spread across the deep, close and rear.

Units will not be sustained according to a single standardised model. Some DRS elements operating towards the rear might be sustained directly from the divisional support area; other elements might be sustained from the brigade support area; some might even be sustained using another formation's brigade support area as a lily-pad. In many circumstances, the brigade support group may deploy a 'combat service support team' forward to further reduce the loop distance between forward elements and the brigade support group. Such combat service support teams are likely to be kept 'on wheels' and based on a transport sub-unit's headquarters, with task-organised elements of medical, equipment support and supply. A further challenge will be the broad range of platform types and ammunition requirements to be supported. DRS combat service support planners and practitioners are using novel solutions that see DRS battlegroups and fires sub-units being sustained by the A1 from a different DRS unit. For example, this might see 1 RHA's ammunition control point stocked with both 155mm Class V and 40mm, to support both the artillery batteries and armoured cavalry squadrons operating.

The BCT is also reinforced by Army Reserve units. Already the Royal Yeomanry is providing a light cavalry squadron able to support the Queen's Dragoon Guards and individual augmentees across the Household Cavalry Regiment and Royal Lancers as dismounts for anti-tank, counter-unmanned air systems and clearance tasks. 104 Regiment Royal Artillery is now providing individual augmentees to 1 RHA and 19 RA, while 101 Regiment Royal Artillery is growing its capability and can deliver the first of two batteries of multiple launch rocket system to reinforce 3 RHA and 26 RA.

Alongside the organic capabilities, the DRS headquarters is designed to integrate air and aviation. This is achieved through the DRS's resourcing, training and delivery of a joint air ground integration centre and an air cell for 3 (UK) Division, and a tactical group in support of the 1st Aviation BCT. These same DRS functions also enable the integration of remotely piloted aircraft systems, both Puma from 32 Regiment Royal Artillery and Watchkeeper from 47 Regiment Royal Artillery. This allows the closing of the sensor-shooter loop, with the

“Deep Recce Strike capitalises on the British Army’s culture of mission command which, even when executed poorly, still offers decisive advantage over the centralised Russian approach.”

DRS planning function delivering the coherent layering of the divisional surveillance and target acquisition plan. Finally, in addition to providing command and control to a recce and fires, 1 DRS BCT provides headquarters staff cells to enable the divisional headquarters to integrate and converge effects – including specialist capabilities ranging from electronic warfare and signals intelligence through to information activities and outreach, special capabilities and national assets that the Divisional Information Manoeuvre Group provide a plug and socket for. In this capacity, Commander 1 DRS BCT acts as the divisional commander's chief of multi-domain fires and intelligence, surveillance, target acquisition, and reconnaissance; a role that includes chairing the multi-domain operations planning team in the division's G5 plans and G35 refine functions. Drawing this all together the DRS delivers the Army's first multi-domain recce-strike complex.

HOW THE DRS FIGHTS

The integration of fires and intelligence, surveillance, target acquisition, and reconnaissance is not new. What is new is that with the advent of the DRS there is no longer a formation boundary between sensor, decider and effector. This is what makes the DRS the Army's first recce-strike complex and enables it to generate far greater agility and tempo. Moreover, while Russia has a recce-strike complex, the DRS has two key advantages. First, the fact it harnesses integration by design for organic and non-organic fires and intelligence, surveillance, target acquisition, and reconnaissance. The elements of the Russian recce-strike complex are bounded within a hierarchical structure and so it lacks the flexibility to adjust and flex. Secondly, DRS capitalises on the British Army's culture of mission command which, even when executed poorly, still offers decisive advantage over the centralised Russian approach. Bring all this together and the DRS can build a system-of-systems that can converge effect with greater agility, generating tempo faster than the enemy to get inside their observe, orient, decide, act⁹ loop. This means the DRS offers a new indirect way of fighting.

⁹John Boyd's theory on decision making: the observe, orient, decide, act (OODA) loop.

The purpose of the DRS is, therefore, to find, understand and strike the enemy across the division's depth in order to defeat sufficient enemy combat power to give the close a decisive advantage. This will be delivered through the establishment of the division's multi-domain surveillance and target acquisition plan and the coordinated delivery of multi-domain fires. The understand function is not replicating divisional G2 [intelligence and security], it is focused on enabling the prioritised targeting of the enemy's kill chain so that the DRS takes an asymmetric manoeuvrist approach to defeat an enemy that it is expected to 'out gun and out range' us.

To achieve its purpose the DRS has five core functions. First, to provide the kernel of staff within HQ 3 (UK) Division to integrate organic and non-organic fires and intelligence, surveillance, target acquisition, and reconnaissance. Second, to fight and win the counter-recce and counter-fires battles, through the ruthless prioritisation of targets and matching of assets. Third, the manoeuvre of fires and intelligence, surveillance, target acquisition, and reconnaissance assets and coherence of the recce-strike complex to maximise survivability and lethality. Fourth, support the close and the rear, both through the resourcing of fires and intelligence, surveillance, target acquisition, and reconnaissance, and by synchronisation across the deep, close and rear to converge effect. And lastly, to orchestrate the handover of targets, maximising effect so that the enemy has no respite or freedom of action.

Fighting with the DRS is then governed by five principles. First, it is commanded at the highest and controlled at the lowest appropriate level, which ensures coherence while generating tempo. Second, it operates as a system-of-systems, which maximises the ability to close the sensor-shooter loop against directed priorities. This is underpinned by the third, agile and adaptable command and control that enables the system to repeatedly reconfigure to concentrate effect across time and space. Fourth, it is intelligence led, to enable the recce-strike complex to hunt and attack the enemy's kill chain. Which links to the final principle of fighting dispersed and concentrating effect. Dispersal is required for survivability, because all elements of the DRS will be on the enemy's high priority target list and will be in the battle 24/7. The previous four principles then enable the convergence of effects at a tempo that defeats the enemy's observe, orient, decide, act loop.

COMMAND AND CONTROL

In order to realise its potential as a recce-strike



Upwards trajectory: The Puma unmanned aerial system can provide correction-of-fires data and is now in service with 32 Regiment Royal Artillery © Soldier Magazine, Crown copyright

complex, the DRS' centre of gravity is its ability to operate as an integrated system-of-systems. Achieving the necessary integration of these systems requires a networked command and concept, which the BCT has now adopted. This is flat and fast, all informed, with points of presence across the whole of the divisional battlespace and can be quickly disaggregated and re-aggregated. This not only enables 'any-sensor-most-appropriate-effector', but it also enables agile command and control. It is agile because the DRS can repeatedly reform surveillance, target acquisition and reconnaissance and strike packages to converge effect. This does not require the repeated issuing of orders, because following the principle of command at the highest control at the lowest appropriate level, command is enabled through orders that set out intent, permissions and coordination measures.¹⁰ These balance the force while enabling cohered subordinate freedom of action to generate tempo through prioritised concentration of effect.

The agile command and control is enabled through just four principal nets, making the flow of information simple and efficient. First, the surveillance, target acquisition and reconnaissance net has every sensor feeding in information. Its all-informed nature means the handover of targets between the deep and the close occurs organically. Concurrently the information is fed upwards to inform divisional G2 or trigger the rapid allocation of assets as priority targets and enemy intentions are identified. The strike net flows the other way

and enables allocations and the massing of fires assets. This means all fires assets can be converged on a single high priority target or on multiple targets, and then rapidly reallocated to other targets as the battle unfolds. The command net enables the dissemination of orders that set the framework to cohere the actions and effects of the recce-strike complex. While the admin net manages movement control, sustainment and medical activity to then hold the complex together in the fight.

This agile networked command and control enables effective and efficient command and control, despite the span of command and the complexity of the battlespace and operating environment. This is underpinned by the points of presence across the divisional battlespace. Within the divisional main is a small DRS main command post, which ensures the integration of the DRS G35 detachment, with fires, recce, surveillance and target acquisition and battlespace management specialists, within the division's G35 piston. It also assists in the delivery and integration of the multi-domain operations planning team, chaired by Commander DRS, which integrates the temporal and geographic deep battle with the multi-domain effects required in the division's close and rear; all nested with the corps fight. Finally, DRS main is central in

¹⁰These include: allocations of assets, unmasking policies, bypass policies, Find-to-Strike Find-to-Understand ratios.

¹¹Its two shifts could be split into independently moving Control 1 and Control 2 nodes, increasing survivability and mobility on the battlefield.

planning the complex sustainment required to deploy a dispersed and perpetually moving recce-strike complex.

DRS forward sits with divisional current operations (G3), fusing the execution functions of fires and intelligence, surveillance, target acquisition to fight the recce-strike complex. This includes the Joint Air Ground Integration Centre, a familiar concept to most. The DRS leads in the delivery of this cell, which acts as the general officer commanding's personal 'fire support team' for the finding and striking of high payoff targets in the divisional deep battlespace. Control of the division's deep battle is broader than just the Joint Air Ground Integration Centre. DRS forward also leads on the management and control of the wider divisional deep battlespace on behalf of the general officer commanding. Including dynamic battlespace management, the dynamic integration of other effects and formations in the deep (such as 1 Aviation BCT deep strike) and the provision of hasty target clearance boards.

DRS control is the controlling headquarters for units under 1 DRS BCT command. While it could be attached to divisional main, it is routinely remote to improve dispersion and survivability – if reinforced with a Falcon node or Falcon early entry capability, it can be remotised entirely.¹¹ It is pivotal in balancing the recce-strike complex, both through control of the surveillance, target acquisition and reconnaissance and strike asset movement to retain mutual support and through managing the sustainment to keep the units in the fight.

DRS control has the capacity to integrate multinational liaison cells too.

Apart from the three principal DRS command nodes, joint fires cells and tactical groups generate points of presence throughout the divisional battlespace to underpin the networked agile command and control. This is exemplified within the DRS, with the three DRS battlegroups now having dedicated affiliations with artillery and surveillance and target acquisition tactical groups. This is a step change for the divisional recce battlegroup, with these units having integral joint fires cells, tactical air control parties, fire support teams, surveillance and target acquisition tactical parties and mobile surveillance sections (including lightweight counter-mortar radar, lightweight multi-mode radar, and man-portable surveillance and target acquisition radar). This removes historic delays resulting from the requirement to hand-off target engagements to the Joint Air Ground Integration Centre for execution; now these battlegroups can use the effects guidance matrix (produced by the multi-domain operations planning team) to order and coordinate strikes directly from general support reinforcing multiple launch rocket system fires and/or allocated air and aviation. This model exploiting joint fires cells and tactical groups continues to be replicated within the close BCTs too.

HOW DRS OPERATES

DRS's ability to repeatedly reform surveillance, target acquisition and reconnaissance and strike packages to converge effect is equally applicable for operate tasks, allowing it to flex seamlessly from the tactical to the operational, potentially with strategic effect – this is especially true when long-range rockets that can strike far beyond the divisional front boundary enter the UK inventory this decade. Consequently, while the DRS' primary purpose is warfighting, its utility is much broader and spans the whole of the Integrated Operating Concept.

As with all elements in the Army, the DRS can generate force elements to support 'protect' tasks globally. Be that general duties or specialist capabilities, for military aid to the civil authority or in support of the wider force. For all operate tasks the DRS can generate variable surveillance, target acquisition and reconnaissance and strike packages from a 'vertical slice' of the BCT as scalable recce-strikes complexes. These can deploy today on engage tasks, exercising with allies to reassure and develop interoperability. For example, interoperability work with America's 2nd Cavalry Regiment is focused on the handover of corps targets, while 4/73 Battery develops a relationship with the Polish Territorial Defence Force to maximise the observation post screen,



Multinational fires: A mortar platoon from B Company, Scots Guards trains alongside Estonian colleagues as part of Op Cabrit.

Corporal Paul Squires, UK MOD © Crown copyright 2023

and the multiple launch rocket system on Op Cabrit is helping to develop Estonian divisional fires. These surveillance, target acquisition and reconnaissance/strike packages can be a platform for land special operations. They could also conduct land special operations, where powerful DRS intelligence, surveillance, target acquisition, and reconnaissance capabilities and signature equipment, like the multiple launch rocket system, could be used to 'spike to understand' the adversary in concert with other Army and national intelligence, surveillance and reconnaissance assets.

In 'constrain', elevating to support the operational level as required and supported by strategic messaging, a 'vertical slice' of 1 DRS BCT can offer a recce-strike complex that holds adversary capability at risk. With escalation, the DRS can then integrate with NATO Fires Command and the 2nd Multi-Domain Task Force¹² or the Allied Rapid Reaction Corps to deliver the land contribution to the multi-domain counter-anti-access and area denial battle, drawing on its long-range fires and its ability to integrate by design. At the point of warfighting, 1 DRS BCT can return to the division to bring the full multi-domain orchestra to bear, having provided an initial command post onto which the divisional headquarters can be built. Work to date has been focused through an Operation Intort lens because this represents the proximate threat, but the logic is applicable globally. In this respect 1 DRS is as much a concept as a BCT.

INNOVATION AND CHALLENGES

It is important to recognise that while the

¹²The US Army's force for delivering theatre multidomain effects and fires in Europe.

concept for how 1 DRS BCT will fight and the concept of operations for its support to operate have developed quickly, there remain a set of challenges. These cannot be ignored if the DRS is to be credible in the eyes of our soldiers, allies and enemies. Indeed, they have provided the catalyst for much of the rapid development, noting that with a revanchist Russia and NATO's New Force Model in 2024, there is an imperative to deliver 1 DRS BCT as a credible capability now – DRS is not an experimentation force for the second epoch. As with the rest of the Army, the DRS is going through a period of transition, but, as described above, the equipment programme for the DRS is good news with equipment arriving now. The critical issues, resulting from the structure of the DRS, are command with no signals regiment, and the feasibility of no regular logistic or medical units.

Command is being resolved in two respects. First, capacity and infrastructure have been resolved by using the capacity and capability of 3 RHA, 26 RA and 5 RA, which are designed to bolt together with the DRS headquarters either alone or within the division. Second is range, noting DRS is operating across the entirety of divisional battlespace, which means distances that exceed high-capacity data radio. Without a coherent communication network across the DRS the agile command and control for the recce-strike complex cannot be delivered. This has been resolved with Bowman now proven and accredited over an encrypted satellite link, giving the DRS a secure beyond-line-of-sight Bowman mesh network until Zodiac delivers. The issues of medical and logistic support for formation recce and artillery were an issue before *Future Soldier* and the formation of the DRS. There remains a requirement for the division to resource lift for artillery ammunition and to determine how formation recce are to be both sustained and supported medically in the deep. The formation of DRS has provided a focus to readdress these issues as well as a new opportunity, because the same network that builds the recce-strike complex can now be harnessed to deliver combat service support. One organisation's A1 can be another's A2, the regimental aid posts can be networked, the brigade support group can be dispersed, and sustainment of artillery ammunition will be done in conjunction with 101 Operational Sustainment Brigade – back to the future in terms of artillery sustainment in major combat operations. The three DRS battlegroups now afford the ability to protect rearward lines of communication, but fresh analysis of distance, demand, duration and destination have highlighted that simple changes to policies, such as combat medical



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qualifications, or equipment, such as water purification bottles, will disproportionately change the four Ds and mitigate key issues too.

There are other opportunities for innovation too, such as artificial intelligence within the target prioritisation and allocation system. Currently this is managed through an Excel spreadsheet. As a start point, the conversion of the spreadsheet algorithms into artificial intelligence algorithms would be catalytic to generating tempo across the recce-strike complex, not simply in target matching but also in predicting resupply, addressing data overload for signallers, and enabling manoeuvre of sensors and shooters – in turn generating tempo and increasing our lethality and survivability.

THE DEVELOPMENT JOURNEY

Russia's invasion of Ukraine has shown that Russia still poses a significant threat, given its eye-watering mass of long-range fires, electromagnetic warfare and intelligence, surveillance, target acquisition, and reconnaissance assets. This justifies the continued need for conventional deterrence and has provided a threat-based focus for DRS development work. That said, Russian failures appear to demonstrate that disadvantages in mass can be mitigated by advantages in the moral and conceptual components of fighting power, which has caused us to examine the threat in a more nuanced way. How you fight often matters more than what you fight with and so, to a degree, ways matter more than means – an opportunity to be exploited.

The development of the DRS has focused

on this opportunity. First, Exercise Cerberus 2022¹³ tested and validated the initial concept. Since then, building on the lessons of Cerberus and focused on the threat, the concept has been developed through a series of capability-based tabletop exercises and systems command post exercises, such as Exercise Iron Dragon. These have all sought to exploit the enemy's weaknesses while mitigating our own. In parallel, reflecting the DRS' centre of gravity is its ability to operate as an integrated system-of-systems, there has been an emphasis on the intellectual development of the team, from gunner and trooper through to BCT commander, so that everyone understands and can maximise the impact of their part of the system in concert with rest of the DRS machine.

With Warfighter 2023-4 having validated the DRS concept and its command and control system, the focus is now on the physical to demonstrate the concept is viable practically. First, through Exercise Iron Titan in September 2023, which will deploy a physical 'vertical slice' against a scenario that will ratify the DRS' utility across the Integrated Operating Concept up to warfighting. Second, by the continued development of 'vertical slices' for ongoing operate tasks. This will see the DRS continue to deliver its outputs on Op Cabrit and Op Elgin, but with more intelligent force generation that will generate the 'vertical slices' as well as cohere surges of specific capabilities forward to be integrated into a range of NATO exercises. This will allow 1

¹³ Training level G exercise for BCT headquarters with 3 Division Headquarters exercising as a secondary training audience.

DRS BCT to build and not spend readiness forward.

CONCLUSION

The removal of the formation boundary between sensor-decider-effector means the DRS is delivering the Army's first multidomain recce-strike complex, an opportunity that must be exploited. As a system it is exploiting greater ranges and integrating capabilities from multiple domains to converge effect against the enemy with superior tempo and in ever greater depth. Although its operational command structures currently lack combat service support depth, the logic of its sustainment has been developed sufficiently that these deficiencies could be task-organised on the line of departure.

With a funded recapitalisation programme, including Ajax (pictured above), the multiple launch rocket system and Mobile Fires Platform, the BCT's equipment programme is starting to deliver a credible force now, rather than in the next epoch. It is an integral part of the Army's warfighting division, but the agility of its structures and command and control mean it can offer a standalone capability to support operational or strategic level headquarters – either sovereign, US or NATO – for operate tasks or the initial phases of the counter-anti-access/area denial battle. 1 DRS BCT is a fight tonight capability, with broad utility and offers a credible capability for NATO's New Force Model. More than this, 1 DRS BCT represents a new indirect way of fighting, exploiting greater range and multi-domain integration to give the Army a significant advantage. It can change the way the British Army fights.



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SUPPORTING ROLE: HOW TO SUSTAIN A FORCE IN 2026



AUTHOR

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HOW We Fight 2026¹ sets the aspiration for how the Field Army will fight within the Op Mobilise² time frame, which in turn drives change in how we support the future force. Given the proximity to 2026, much of the capability and structures will look and feel as they do today, and therefore it is the way in which they are utilised that will offer the most notable change.

Whilst some modern technology *could* be integrated through rapid procurement or acceleration of our current support programmes, the most fundamental shift must be through our mindset and approach to how we support warfighting. This article will examine the lessons identified from current conflicts as well as those aspects of the wider UK support domain that are affecting the Field Army's ability to support the How We Fight 2026

force, before highlighting the approach the Field Army is taking to address these challenges. It will draw on several Field Army-led activities³ that took place in 2022/23 that analysed the support challenge and propose four lines of effort as a framework from which to mitigate our support vulnerabilities, primarily through adjustments to policy, doctrine, experimentation, and rapid procurement of current technologies as part of Project Lewes.⁴ The recommendations to address the support vulnerabilities are bounded in reality and cognisant of the limited levers to change over the next three years.

¹How we will Fight in 26, dated 11 Dec 22.

²Op Mobilise – CGS' challenge to mobilise to counter the threats of today.

³Field Army Estimate, Sustainment TTX, Land HSS TTX, Support Summit, AADP Sprint, 17th FACG, Support CONEMP.

Further details can be found in the *Support to How we Fight 2026* concept of employment⁵ due to be published shortly.

PART 1 – FRAMING THE PROBLEM

The invasion of Ukraine by Russia has focused UK Defence and NATO on fighting ‘the war’ on the European continent. An era of campaigning, culminating with Op Entirety⁶, refocused investment away from sustainment and resilience and prioritised an efficiency focus. This has significantly altered the wider sustainment risk picture when comparing today’s force to the Cold War. The following sections aim to aggregate the situation and lessons identified from the current conflict to articulate the sustainment environment through the five doctrinal Ds.⁷

DISTANCE

Support to warfighting in East Europe is more than 2,000 kilometres from the home base. Our ability to deliver a strategic base outload is hindered by access, basing and overflight issues across five countries as it could restrict the flow of personnel, materiel, and equipment. Whilst this can be offset using multiple points of embarkation and disembarkation and utilising a mix of military and contracted air, road, rail, and sea assets to facilitate both the forward and reverse support chain, disinvesting in the capacity and resources to deliver this makes it a significant challenge to overcome. To credibly deter the adversary much of the force needs to already be in place, including contingent operating stocks, as this will increase readiness and facilitate a rapid strategic base outload. The British Army has severely reduced its European footprint post the Cold War and has lost the intimate understanding of the capabilities of our allies and the NATO support network to assist us.

DESTINATION

For the support enterprise, we must consider everything forward of the home base. Over

“There are shortfalls in organic military load carrying vehicles for both bulk items and liquid distribution commensurate with a delta of trained REME, medical and RLC personnel.”

the era of campaigning, we have become accustomed to considering only the close battlespace. Our understanding of the threats and opportunities across the line of communication and how we can both enable and protect it is essential in our success. This scale of support to warfighting is challenging enough when uncontested but becomes even more so against a peer enemy using both conventional and irregular warfare.

The adversary⁸ would seek to deny lines of communication, exploit lapses in operational security and reduce the ability to communicate, the force would have extremely limited freedom of manoeuvre and freedom of action. Support by the host nation is not guaranteed as they face significant pressure to support their own forces as well as the civilian population. This is likely to result in limited access to medical facilities, power, and industrial resources. If one assumes the UK will be an ally within a NATO construct or an alliance such as the Joint Expeditionary Force or a US-led coalition, our freedom of manoeuvre could be inhibited as the continent and battlespace become more congested, contested and with fierce competition for resources. There is some mitigation to competition through existing NATO partnerships such as the Joint Operational Fuel System, Multinational Ammunition Warehousing and various interoperability working groups provided they receive further investment. Our ability to influence and shape the NATO support enterprise must be improved.

DEMAND

Ukraine has demonstrated that support

⁴*Project Leves – Route card to delivery of the HWF26 outcome.*

⁵*Due to be published in late spring at Official-Sensitive.*

⁶*Reshaped the British Army to deliver counter insurgency operations in Afghanistan.*

⁷*Distance, Destination, Demand, Duration and Dependency.*

⁸*Putin and Russia.*

⁹*Army Advanced Delivery Programme Sprint, dated 19 Jan 23.*

(logistics, equipment support, medical and personnel) is both a critical capability and a critical vulnerability, with consumption being higher and over a protracted period than current assumptions and funding has enabled. Minimising the footprint forward will reduce the threat to sustainment force elements to a degree but must be weighed against the need to rapidly support the combat elements.

In general terms industry is configured to deliver a ‘just in time’ supply chain and an efficiency over resilience mindset. There is a need to reconsider the value and cost of resilience and ensure, in materiel terms, the force can be deployed and sustained at the speed of relevance. Furthermore, our procurement is often lengthy and bureaucratic, and our principal delivery agent (Defence Equipment & Support) faces a paucity of trained workforce that hinders procurement, maintenance and management of our equipment and commodities.

Recent analysis⁹ shows that the current structures are not optimised to meet the demand of our commitment to the NATO New Force Model. There are shortfalls in organic military load carrying vehicles for both bulk items and liquid distribution commensurate with a delta of trained REME, medical and RLC personnel. These findings were echoed in the 2022 Field Army Estimate which identified the same gaps in addition to the requirement for more rail, air dispatch, austere port capability, medical evacuation, and hospital capability as well as the contingent operational stock required to sustain this force. Whilst these capability shortfalls gaps are stark, it was widely accepted that any solution requires a far greater consideration of the whole force approach, where depth and capacity can be sourced from wider industry and allied support.

DURATION

Forward basing of combat supplies ensures



quicker access during the initial phase of the operation but risks being destroyed as events in Ukraine have shown that the adversary focuses on supply areas as a priority target. As the operation matures and the supply chain is established logistic information systems need to be hosted on multiple, flexible communication channels to avoid being targeted whilst ensuring robust connectivity to enable intelligent and rapid sustainment to the force for the duration. Given the size and scale of the deployed support entity, it is difficult to protect with a paucity of dedicated force protection and air defence and so minimising, dispersing, and hiding ourselves amongst the wider noise and clutter of our environment will be key. We must also exercise reversionary techniques and use of camouflage, concealment, deception and dispersion to survive.

Previous assumptions based on 30 days of supply are flawed. There is a need to predict usage based on current lessons being learnt and developing our own tactics, techniques and procedures is essential in delivering the resilience required to deliver a credible deterrence. Planning with industry to understand likely lead times for critical stocks should be the baseline to understand what stock levels we would wish rather than an arbitrary number. This is mirrored across the support enterprise, in particular the medical sphere. High casualty rates are anticipated with indication that there is a point in warfighting that requires a reverse of triage priorities and decision making (focus on getting T3 [non-urgent] casualties back in the fight ahead of T1/T2 [requires immediate lifesaving intervention/emergency, could become life threatening]).

DEPENDENCY

The support architecture needs to match the modernising composite force. Deep find/

strike is an example of a growing and essential capability, support must reflect how the Deep Recce Strike Brigade Combat Team will fight. This reinforces the need for a digitally enabled recognised picture across the support enterprise and a robust command and control system that allows the rapid task organisation of support forces.

NATO, Joint Expeditionary Force, allies, host nation and industry are key dependencies that require further understanding of their capabilities before further engagement and cooperation. It is through these dependencies that mitigation to some of our support vulnerabilities can be realised.

Bilateral agreements, utilising the NATO Support Procurement Agency and forward basing contractors are required to complement our efforts to support the force.

We must address our mindset and approach to warfighting. We are still conditioned by decades of fighting wars where we can dictate the risk we are willing to take. Years of campaigning have constrained our thinking and altered our risk balance approach to focus on risk to life over risk to mission. Our sustainment warfighting doctrine remains broadly applicable, but we must invest in reviewing it against the modern context to harness the technological advancements that underpin any proposed efficiencies in

operating. We have forgotten how to support a force that is facing a capable adversary and no longer understand the realities of sustaining a force in a war against a peer with the capabilities to inflict considerable damage with scale and times of their choosing. Changing our mindset is a whole of force issue and one we must attend to quickly and across the support enterprise.

PART 2 – THE SOLUTION

Whilst this paper has articulated a stark current operating environment, there is already much in train to address these challenges. Broadly the 'raw ingredients' required to support the force exist or are already being articulated and funded. However, there remains a key risk that these capabilities are currently not optimised, contracted, assured, or enabled to meet the full requirement as we lack the coherence to operate the capabilities seamlessly across the enterprise. These risks are not solely for the Field Army to manage or treat; this is Defence support activity with the Chief of Defence Logistics and Support retaining close oversight of the pan-Defence support challenge. From a Field Army perspective, we have grouped our support capability challenges into four lines of effort to allow us to develop solutions and ensure coherence with Defence capability improvements as well as maximising opportunities provided by the Defence exercise programme. The four lines of effort are contingent operational stock, the workforce, capability, and command and control.

1. Contingent operational stock

Contingent operational stock is key to ensuring a credible deterrence and to enable us to hold a force that can rapidly operate across the spectrum of conflict. Importantly, the configuration of our contingent operational



stock is fit for purpose; it is held by Standard Stock Module which supports 150 personnel per module and can be built and packed according to the size, scale, duration, and readiness of the deploying force. This allows the contents to be reviewed and updated to ensure the most efficient use of the limited supply chain bandwidth. However, contingent operational stock will need to be triaged to ensure 'true' combat supplies are prioritised and pushed forward.

Our current priority is centred on addressing the depth of our contingent operational stock holdings to meet the larger forces held at higher readiness levels. As a vital component of our warfighting capability the amount of contingent operational stock we currently hold needs to increase; this will take time, money, investment in our personnel and significant support by the global defence industry base. There is funding available now to treat some shortfalls and a plan in place to meet the contingent operational stock requirements of a warfighting division over the coming years, provided industry can deliver. Concurrently we need to pursue and test effective interoperability of contingent operational stock with our NATO allies and partners.

More broadly, contingent operational stock needs to be stored and managed with the ability to outload at pace. The Logistics Commodities and Services Transformation contract was designed to deliver transformation of the supply chain and was (and still is) focused on delivering efficiencies to Defence. This has included the closure of Defence storage facilities to make efficiencies. Work is underway to explore how we can amend the contract to gear it towards supporting divisional warfighting. Furthermore, the current Team Leidos Logistic Information Systems that would enable the outload is not 'match fit' and will need to be better integrated into the wider Defence Information Systems Architecture to enable them to operate at the speed of relevance. Forward basing contingent operational stock across dispersed sites in Europe will enable strategic base outload; holding contingent operational stock in the NFS¹⁰ by 2026 is feasible and should be supported.

2. Workforce

There is a need to address the shortfall to the support workforce, and to the readiness and utility of the Reserves. This critical gap can be answered using a whole force approach with work currently underway to quantify the issue and reshape the workforce agility accordingly.

¹⁰NFS - NATO forward Holding Site, Sennelager.



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“The Army’s mindset must be conditioned to an environment akin to that witnessed in Ukraine rather than remembering other recent, more permissive, deployments. This will require resilience across the line of communication by generating greater capacity with the current workforce – specifically addressing the paucity of drivers, joint support enablers, medical personnel, and Reserves.”

We must look to our industrial partners to assist in helping us meet the capacity challenge and preserving the regular workforce for the areas where the additional military skills are essential in meeting the mission sets. The British Army has relied on industry partners to assist in supporting all recent operations and campaigns and the next war will be no different.

With much of the emphasis on the soldier to upskill, this requires a ruthless prioritisation of training requirements, acceptance of risk and a rewrite of courses and requirements to optimise the training capacity and time available. The Army’s mindset must be conditioned to an environment akin to that witnessed in Ukraine rather than remembering other recent, more permissive, deployments. This will require resilience across the line of communication by generating greater capacity with the current workforce – specifically addressing the paucity of drivers, joint support enablers, medical personnel, and Reserves. Given the lengthy indicators and warnings, the timely integration of Reserve personnel is possible but must be confirmed with testing of the readiness mechanism.

We need to understand how to integrate and sustain the Army within a coalition, exercise dispersion and re-learn how to operate in a contested environment. Our personnel must

understand and rehearse routine employment of rail, air despatch, and operate from austere ports – these are all considerations for the Defence exercise series and as part of Project Lewes. From a medical perspective, the workforce requires configuration and must include potential growth from Field Army, Defence Medical Services and Army Reserves to mobilise at scale and pace to deliver medical operational capability across the operational patient care pathway.

3. Capability fit for purpose and ready

Building on our extant Sustainment Doctrine¹¹ we can develop the themes, however, the application of these and the capabilities to meet the challenges of warfighting must be the focus to capture our capability developments. Issues such as insufficient logistic lift to support the force can be mitigated by reducing distance (maximum use of forward basing), reducing demand through a lighter footprint, greater resilience, and by leveraging more industrial support and Joint Expeditionary Force/NATO interoperability. Lift can be increased through routine contracting of commercial lift, routine use of rail, drone, and air despatch. Field Army is looking to align with Strategic Command to develop the Defence

¹¹DN 20/01 Sustainment.

land rail capability through tactical generation of capabilities. The doctrine of Theatre Supply requires further development to meet this contemporary threat.

Maximising the use of resilience in the Babcock Service Provision and Transformation Contract will provide contracted maintenance capacity on the far bank. UK industry's support for the Ukrainian Armed Forces and those capabilities we have granted in kind have provided a valuable insight into the potential development of our relationship with industry and the capabilities they can offer in an expeditionary nature. The insufficient medical operational capability and capacity across the operational patient care pathway requires immediate attention and should focus on the scale of force, casualty numbers and operating distance. Consideration must then be given to capacity, modularity, and readiness for divisional warfighting through design of a capable medical supply chain, and a medical 'extraction' plan that includes use of reverse logistic lift (coaches and rail). This should not be done in isolation, but with our NATO allies and partners to ensure there is a NATO led integrated medical plan.

All these capabilities must be underpinned by a digital backbone. The need to rapidly assimilate data will be critical in the successful sustainment of the force. There is a role for artificial intelligence here which must be harnessed quickly. With such a wide and diverse sustainment battlespace with limited secure communications, we must harness the ability to securely package data to maintain a single recognised picture and support the decision makers across the enterprise.

4. Command and control fit for purpose

The ability to conduct command and control in a contested environment against a peer enemy is critical. Units must not look or sound like a headquarters else they will be targeted by the adversary within a matter of minutes. This can be done by exercising the exploitation of the electro magnetic spectrum to host logistic information systems and communicate through multiple, flexible communication channels like that experienced in Ukraine. Exercising in occupying buildings of opportunity rather than traditional tentage should be the norm. Our formations and units should integrate more with Joint Expeditionary Force and NATO partners, exercising with Standing Joint Force Logistics Component, joint logistics support groups and test the ability to communicate. We must be comfortable with scrutiny from a cyber 'red team' routinely on exercise and practice reversionary mode. There is a critical role for artificial intelligence to assist in this.



“Data must be at the centre of our thinking, both in ensuring we can support decision making across a dispersed and contested battlespace but also how we protect data to ensure we maintain an accurate sustainment picture. Artificial intelligence can simplify this process and we must look to harness this capability quickly.”

All our major exercises should exercise mass casualty and mortuary affairs utilising remote diagnostic technology where practical. Use of logistic information systems interoperability to exploit data and common operating picture across equipment support and logistics should be exploited further, technology and reach-back should be fully leveraged to minimise the forward command and control footprint. Joint and multi-national considerations must be given for strategic evacuation effort through higher multi-national headquarters to manage patient care pathway through multi-national medical assets. Use of a commercial off-the-shelf patient tracking system capable of meeting the intensity of demand should be tested and potentially implemented.

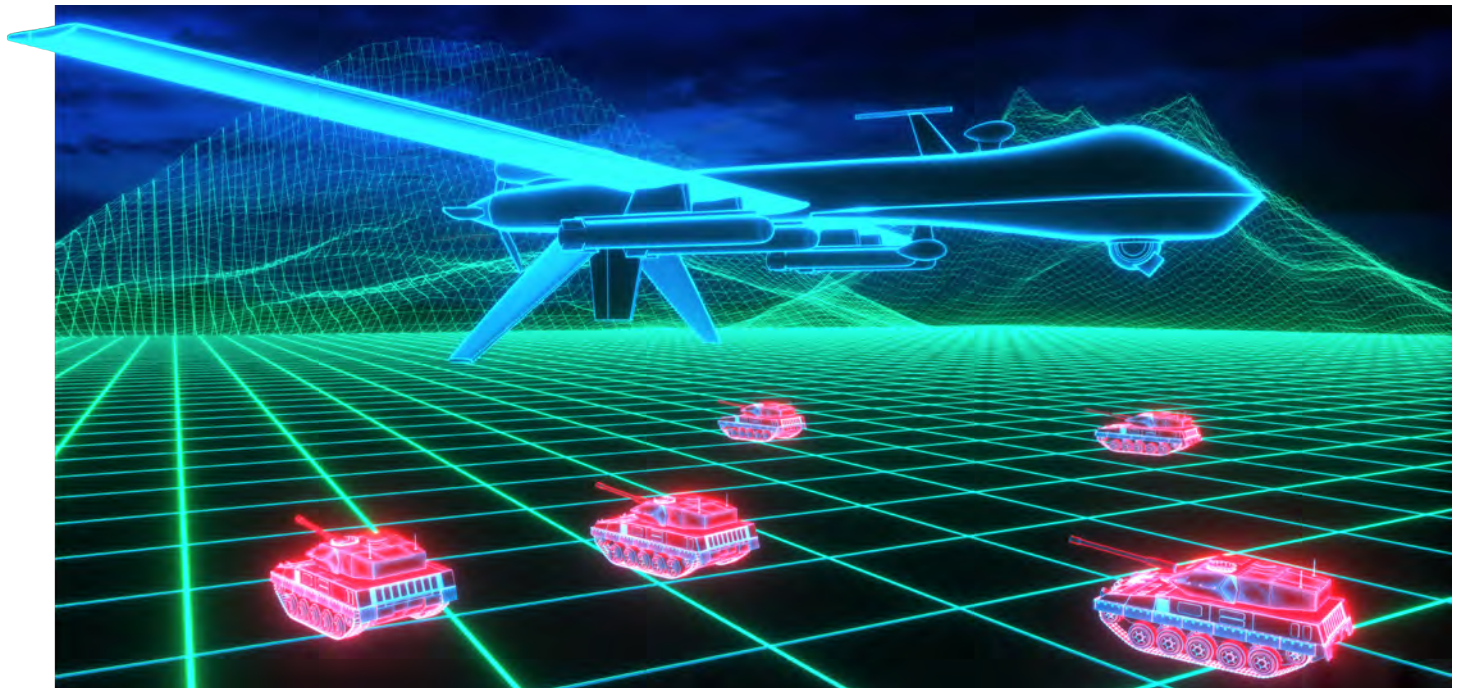
SUMMARY

This article draws on our current warfighting support doctrine and reviews it against the support enterprise's understanding of modern warfighting baselined against the lessons learnt from Ukraine and our requirement to support the force being offered to NATO now. The majority of these 'known knowns' are perennial issues that have featured in many of the major operations conducted over the last 30 years. This is associated with the nature of war being a constant, while the character of war morphs, as witnessed in Ukraine, meaning we must adapt to a more data and technologically centric battlespace.

It is widely accepted that the support area of operations will be contested and kinetic

from the home base and across the entire line of communication, and so accelerated adaptation of our mindset and capability for warfighting is essential to enable the force to operate effectively. Data must be at the centre of our thinking, both in ensuring we can support decision making across a dispersed and contested battlespace but also how we protect data to ensure we maintain an accurate sustainment picture. Artificial intelligence can simplify this process and we must look to harness this capability quickly. Dispersion must be captured in our force design rather than simply be an operating concept, no longer can we rely on simple tactics, techniques and procedures. We must now engage with industry to unlock the power of our industrial partners to stock the force with what we need based on their ability to generate rather than arbitrary figures. Our capacity and resilience to deliver the requirement can only be considered through a whole force concept, which must encompass our industrial partners and allies to understand the efficiencies and capacity that can be achieved.

Whilst these recommendations can be prioritised, it is crucial that all of the recommendations are realised as soon as possible, it cannot be a shopping list with only the top three resourced. This is about privileging support and ensuring our workforce, funding and thinking are set, backed by industry, and integrated with our allies and partners and a whole of government approach, to ensure credible and effective support to the force.



DELIVERING EFFECTIVE COMMAND AND CONTROL OF DATA CENTRIC WARFARE



AUTHOR

Colonel Nat Haden is the Commander of the Field Army Understand Group.

IT IS not a controversial statement to say there is currently a large disparity between the agile command and control network required by the Army to operate and fight in the way envisioned by *How We Fight 2026*, and the reality faced by Army personnel deploying into the field now in the Allied Rapid Reaction Corps (ARRC) headquarters or a divisional/brigade headquarters. The lessons emerging from Ukraine are stark – the life expectancy of large, immobile headquarters that act as electronic beacons on a battlefield saturated with enemy sensors and precision weapons can be measured in hours. Moreover, irrespective of the survivability, manoeuvring and processing data across the battlefield from sensor to decider to effector at the speed and volume required to enable the headquarters to fight effectively against a peer adversary is a significant challenge given the Army's current information and communication systems.

The gulf between where we are now and where we want to be will only get bigger if we fail to address it. The technology available both to us and potential adversaries will continue to advance, exacerbating the challenges that we will face from the increasing speed and reach of information warfare, the impact of disruptive

technology including artificial intelligence and machine learning, and the removal of sanctuary for headquarters at all levels both at home and deployed.

For all the reasons articulated above, the criticality for the Army of modernising our command and control systems and data architecture is clear. The obvious question that falls from this statement is what are we planning to do about it? This is one of the main lines of effort of Project Lewes and the roadmap to get from where we are now to where we need to be is being developed. The aim of this article is to outline the approach we are undertaking, but equally as importantly, to outline the challenges that we face and the broad principles that the Field Army will need to adopt as it seeks to address this significant challenge.

Firstly, as we look at how we are going to address this challenge it is important to recognise that an awareness of this problem and the necessity to do something about it is not new. This is something that Defence has been wrestling with for a long time. To illustrate this, the following is a description of the Network Enabled Capability Concept taken from an *MOD Future Capabilities Factsheet* produced in 2004:

Network Enabled Capability (NEC) aims to improve our ability to fight and win by letting us share and exploit information more efficiently and effectively within the British Armed Forces and with our coalition partners. NEC is intended to bring together sensors, decision-makers and weapon systems, along with the support capabilities. It will ensure that information gets to where it is needed, so that it can enable the Armed Forces to execute synchronised attacks with:

- *Decisiveness – NEC will ensure that those who need the information have it and that they are able to make better informed decisions.*
- *Speed – NEC will reduce the time elapsed from a sensor detecting a target to the delivery of an attack.*
- *Accuracy – better informed decisions and the use of precision weapons reducing the risk of weapons missing their targets.*

Given the similarity between the language above and the How We Fight concept produced 18 years later, two questions immediately come to the fore. Firstly, why are we so far behind where we need to be? This is a valid question to which there is no simple answer and for reasons of brevity is out of the scope of this article. The second question is, if progress so far has been slow, how are we confident that we can make substantial progress by 2026? The short answer to this question is because over the coming years a number of Army and Defence change programmes will start to deliver the capabilities we need to get at this issue – for example Project Zodiac, which will deliver a significant proportion of the sensor to shooter required to support the deep effects envisioned by the How We Fight 2026 plan will start to deliver capability to the Army from 2025.

The latter part of this article will outline the approach that the Field Army is taking to optimise the delivery of the programmes. However, first it is necessary to outline why, in a world where we routinely use technology in our private lives that is vastly more advanced than the technology we are using in a military context, it is such a difficult challenge to address.

The term ‘data centric warfare’ is often used to describe the technological advances that the Army seeks to make, but the term can be nebulous and therefore is unhelpful in establishing a common baseline of understanding. Consequently, as we work through the problem there is a requirement to frame it more simplistically. To enable the functionality it needs, the Army needs to develop its existing capability in two areas – data management (acquisition, storage and

“Replicating the volume, complexity, and variety of real-world data to support exercises is not currently possible within our budgetary or technical constraints.”

processing), and data manoeuvre (speed and volume) across its fixed and deployed networks.

THE CHALLENGES WITH DATA MANAGEMENT

To deliver the functionality required to enable the 2026 vision there are three broad areas of focus: access to the data required, storage of the data and the ability to process it effectively. These requirements are not new and processes are already in place to perform all these functions, but they cannot process or manoeuvre data in enough volume or quickly enough to give the Army the decisive edge it needs on the modern battlefield.

Moving data from an external source onto an Army system presents a number of issues. To use it legally the origin must be fully understood. Most strategic intelligence will require declassification before it can be moved onto Army systems and commercial data may come at a significant cost. Data from external providers (allies or commercial) may also come with usage caveats that mean we will need to refer back to them if we subsequently want to reconfigure our processes or increase access to our networks such as adding another partner to a coalition network. Processes exist to manage these issues, but in their current form they can act as a series of bottlenecks that inhibit the speed of the system as a whole. This is equally applicable to the majority of the Army’s organic sensors, which still require a human to physically input the data they collect onto our tactical or operational networks.

In order to manage bulk data at speed, information processing needs to be progressively automated. This requires a data storage capability and a database management system so it can be accessed effectively by applications capable of fusing and manipulating data inputs to give the Army the outputs that it requires. Generally, the commercial sector is way ahead of the military one in this area but buying in commercial applications or expertise is expensive. Developing and retaining the in-house expertise required to develop the applications we require provides a more cost-effective solution but is more difficult to achieve and the retention of expertise is challenging.

Building one database in a fixed location which is accessed remotely is the most efficient way to develop a big data fusion capability, but risks users being cut off completely if the communication links with it are severed and is therefore a single point of failure. Building a series of instantiations of the database across the fixed and deployed force gives greater redundancy but is more costly and much harder to keep updated to ensure one version of the truth.

Replicating the volume, complexity, and variety of real-world data to support exercises is not currently possible within our budgetary or technical constraints, which means that it is extremely difficult to exercise the data fusion capability that the Army seeks to develop in a simulated environment. It is possible to replicate the outputs that the data fusion capability will produce, so manoeuvring data can be exercised effectively, but realistically the core of the data fusion engine can only be developed against real world data sets.

THE CHALLENGES WITH DATA MANOEUVRE

In conjunction with the establishment of the processes and procedures required to obtain and process the data it is also critical that we develop our ability to manoeuvre it around the battlefield effectively. This also represents a complex challenge. In order to operate effectively the deployable headquarters will need to operate across fixed infrastructure and deployable systems. Currently moving data between fixed and deployable infrastructure is a challenge. Current gateways between these systems act as bottlenecks and data capacity reduces significantly nearer the tactical edge, further limiting the speed and volume of data transmission. Breaking these down is not just about upgrading equipment, the requirement to maintain the individual integrity of connected systems at different levels of classification is also a significant factor. This challenge is further compounded when the information held on the systems is also at different levels of classification.

The fixed information systems that support our standing headquarters are owned by Defence Digital. The Army has the ability to import applications on to them to support Army activity at official sensitive and secret but are reliant on Defence Digital for any major evolutions in the systems that we currently use. The impact of changes the Army wishes to make on the wider Defence user community must also be considered in each instance.

ORGANISATIONAL CHALLENGES

In addition to the technical challenges, there

are a number of organisational challenges the Army will need to address if it is to deliver the capability it needs; this is a complex challenge. Designing and delivering the functionality we require to meet multiple user requirements across a series of different networks in constant flux that are owned and managed by multiple national and international organisations is difficult. Success will require the Army to break the problem down into a set of manageable steps aligned to a prioritised set of requirements.

The capacity of the Army and Defence to design and deliver the technological enhances that are required to support the 2026 vision are finite and already heavily committed. This, combined with financial, approval and scrutiny requirements, has the potential to significantly limit the rate of progress the Army will be able to make. Establishing and maintaining a clear set of change priorities which are resourced effectively will be key to minimising these obstacles. It is also important to engage with and work with the full range of stakeholders at the earliest point possible in this process.

Traditionally, the majority of system development has been done in the design phase of the procurement cycle and the user has not had the ability to develop it further once they have received it. The data management and processing systems the Army aspires to own are different, requiring incremental development to optimise their use. To be done effectively, this has to be led by a user that has sufficient understanding of the technology they are employing. In the context of the 2026 plan, the users are not just the G2 [intelligence and security] and G6 [communications and IT] personnel, but across the whole force. This will require cultural change to get to a point where the understanding of data management and exploitation is as widely understood as fires or other key processes and outputs.

THE WAY FORWARD

The challenges inherent in developing the command and control capability are daunting, but they are not insurmountable. In order to address them effectively the work the Field Army is doing through Project Lewes is guided by a number of overarching principles. The work must be sufficiently prioritised; existing activity combined with the requirement to deliver all other aspects of the How We Fight 2026 vision will present a competing demand that may draw focus from delivering a more effective command and control architecture. In a financially constrained environment, there is also the risk that investment in this area will not be prioritised as highly as investment in more



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tangible and easily understood equipment areas. The progress made will be directly proportional to the prioritisation it is given.

Full investment in the stakeholder community is crucial as almost everything the Field Army is striving to achieve in this area will need the support of external stakeholders. It is vital the subordinate stakeholder community is brought into the processes from the outset. Although this sounds obvious, stakeholder engagement can quickly be de-prioritised by other internal demands and this must not be allowed to happen. A significant amount of progress in the development of the data architecture the Army requires can be made simply from placing greater demands onto existing Defence and Army programmes. Existing foundations must be built on whenever possible as the processes of procuring and integrating new applications or systems can be frustratingly slow. Currently these processes cannot be bypassed and so switching from a system or application that has already started to go through the procurement process to an entirely new one can significantly delay the capability enhancement the Army is seeking to realise. Consequently, the Army must fully exploit current and planned capability enhancements and ensure emerging opportunities are coherent with them.

In terms of the systems and applications the Army wants to build, significant work has already been done in Defence, in the other Services and at formation level. Capturing and exploiting this work effectively is critical to accelerating the pace of development more widely in the Army.

The complexity of the systems and technology the Army is seeking to develop is significant and the optimum solutions can change significantly between different scenarios. Furthermore, the optimal system design for one scenario may directly compromise the system required for another. There is a risk that focusing on the development of individual areas of functionality may deliver a solution that is less optimal

in other areas, but this should be balanced against achieving nothing by consistently trying to 'boil the ocean'. Moreover, agile development and open architectures should alleviate the risk to a certain extent. However, ultimately, if it was possible to work through the full complexity, a system that does it all is unlikely to be affordable and would overwhelm our delivery capability. Consequently, the most effective way to proceed is in a series of incremental steps, based around a prioritised set of specific requirements.

Finally, the Army already has established processes that enable it to fight effectively. Moving from established processes to increasingly digitised ones can initially result in significant disruption and new applications may not work as effectively as they are intended to. This can be addressed through incremental development, but key to success in this area is empowering the user community with the skills and time to engage fully with this process. An empowered user community will also be better placed to articulate clearer user requirements to the delivery community.

To drive the evolution of Field Army command and control forward these principles will now be applied through Lewes in a process that will seek to optimise the delivery of existing programmes, to identify and propose solutions for areas of capability that will not be delivered by existing programmes and accelerate the development of existing capabilities to support current operations. Major exercises with the ARRC and divisional headquarters between now and 2026 will be reviewed to define, deliver and refine the future command and control constructs that we need; we will work closely with the other Services, Defence and allies to integrate as closely as possible with the work they are doing. As has been articulated elsewhere in this journal, nobody said this would be easy, but this approach will enable the Field Army to advance as effectively as possible towards the How We Fight 2026 vision.

HOW UKRAINE WAS MADE TO FIGHT IN 2022

STRATEGISING how best to configure for a future conflict is a luxury Ukraine simply does not have. Its armed forces – now bolstered by thousands of volunteer soldiers – will ‘fight tonight’ and have done so every night since the 24th February last year.

Thrown into a conflict they never courted, Ukrainian troops have demonstrated remarkable resilience in the face of Russian military mass, repeatedly confounding those commentators who predicted Vladimir Putin’s invasion would quickly end in victory for the Kremlin. Understanding how Ukraine has, to date, sustained a staunch defence of its territory is the focus of ongoing work being conducted by James Sladden, an Associate Fellow at the Centre for Historical Analysis and Conflict Research.

The former Royal Marine, who advises and supports members of the media working in hostile environments and received a master’s with distinction in Applied Security Strategy from the University of Exeter, has completed multiple visits to Ukraine’s battlefields in a bid to produce a credible history of the

“The key to success was everyone fundamentally got what they were trying to do, which was to keep the Russians north of the River Irpin. There was a simplicity to that objective but it should not be underestimated what different people can bring to a fight.”

conflict through timely field research and identify lessons for military practitioners from contemporary combat.

Ahead of publishing the findings of his work in a *British Army Review Special* later this year, James shared some insights from his interviews with those attempting to repel Russian occupation of Ukraine’s besieged towns and cities.

“When I’ve spoken to Ukrainians who have fought and continued to fight, the most striking thing for me is what happened in the early hours of the morning on the 24th February

2022, which was that ordinary people from all walks of life decided to fight back. They didn’t wait for someone to appear on television and tell them to join up, they just started queuing at recruitment offices.

“A nation seemed to grasp the existential threat it faced and decided to do something about it. Typical accounts of those opening hours of the war are that those now fighting heard the first missile strikes and immediately realised the magnitude of the situation. Putin went for shock and awe but what that communicated to Ukrainians was there was to be no middle ground or ‘wait and see’, they were under total attack. Those initial strikes gave clarity to the people, who then arranged to move their families west before, in most cases, going to the nearest recruitment office and joining the long queues of volunteers.

“A former conscript who had voluntarily re-joined to fight typified so many of the accounts I heard. He explained how the attitude to military service had changed because ‘it’s your friends, people from your town or village that you’re fighting for’. In the case of the defence of Kyiv, a city rose up to defend itself.



ANATOLII STEPANOV/AFP via Getty Images (CC BY 2.0)



David Guttenfelder for The New York Times [CC-BY-NC 2.0]

“Men were effectively handed an AK47 and two magazines, given some abbreviated training and then driven to positions and told to hold them. From company level down there was little in the way of communication, with hastily assembled units reliant on runners, mobile phones or handheld walkie talkies bought from toy shops. I have spoken with soldiers who were entrenched in positions and only saw their company commander once a day when they came around with food, ammunition or orders.

“Others just had to coordinate themselves and make it work. The key to success was everyone fundamentally got what they were trying to do, which was to keep the Russians north of the River Irpin. There was a simplicity to that objective but it should not be underestimated what different people can bring to a fight. Imaginative people found ways of applying their skills to the war effort in the absence of early high-level direction.

“Drone hobbyists put their drones in the air and began relaying messages to the military, civilians rounded up bulldozers and tractors to dig positions and small groups with access to weapons jumped in SUVs and went off to harass the Russians.

“And in targeting terms, the civilian population of Ukraine passed on immense amounts of

“The self-organising nature of the defending force and entrepreneurship shown on the battlefields is an interesting topic for our own military to explore.”

information to their own side, using apps, phone calls and word of mouth to tell Ukrainian soldiers they had spotted x number of tanks in x location.

“It was all a kind of a mess but largely worked brilliantly. It was chaotic but that meant the Russian army didn’t know what the hell was going on. You can imagine the Russians trying to tie down intelligence and coming up against a wall of chaos that was willing to kick them at every turn.

“The self-organising nature of the defending force and entrepreneurship shown on the battlefields of Ukraine is an interesting topic for our own military to explore. How open are our mission command models to interaction and engagement with fresh volunteers and a mass of reservists called up from civilian life?

“The infantry provided the necessary friction to hold ground and tried to grind the Russians to a halt, but it was the artillery

that made the difference in the defence of Kyiv. It provided the destruction at scale and proved absolutely essential in taking out river crossing pontoons and hitting the enemy columns behind them.

“The amount of artillery that was called in danger close to Ukrainian positions is recognition of how desperate the situation was at times and I’ve talked with battery commanders who told me how they did not stop firing and fighting for six days solid. They did not sleep and, as one of them put it, were almost delirious, but they continued because it was a battle winning necessity.

“Ukrainians will tell you that their ‘will to fight’ gave them an edge over their Russian adversaries, who they said would often pull back as soon as they came under fire. Of course, in the case of the Ukrainians they knew they could not pull back, they had to fight.

“While vastly different from recent UK experiences of conflict, the nature of the current fighting – a war of attrition and front-lines – does not come as a surprise, this war has been going on since 2014.

“When I left the Royal Marines in 2013 my career had largely been that of my generation – predominantly Afghanistan and counter-insurgency focused. The training I did largely



“It was the artillery that made the difference in the defence of Kyiv. It provided the destruction at scale and proved absolutely essential in taking out river crossing pontoons and hitting the enemy columns behind them.”

reflected this and concentrated on things like improvised explosive devices, small arms and hearts and minds. Lectures on tanks, artillery and trenches just seemed a bit old fashioned and not especially relevant.

“It was with that narrow-minded view that I first deployed to Ukraine in November 2014 – following the start of hostilities in the Donbas – with the OSCE [Organization for Security and Co-operation in Europe] as part of the special monitoring mission. I arrived to find what was, for me, an alien environment; a conflict featuring trenches, tanks and artillery. What I had previously wrongly considered were old-fashioned ways of warfighting were suddenly very real, very relevant and in full use.

“I discarded the notion of anything being old or out of date from that point and realised that use and utility are largely contextual – it’s got nothing to do with when something was invented. Soldiering is inherently a very practical activity and if something works,



Capturing Kyiv and beyond: Read James’ In-Depth Briefing on field research in the Ukraine on the Centre for Historical Analysis and Conflict Research’s website, chacr.org.uk

that’s all that matters; that it’s fifth generation or first generation is not really an important consideration. This unusual mix of old and new was also seen during the Battle of Debaltsevo in early 2015, which, at that time, was the biggest pitched battle Europe had seen for decades. Before the Russians succeeded in taking the city, there were Ukrainian troops fighting from trenches dug with shovels while BMPs and tanks from both sides exchanged fire. The juxtaposition of soldiers carrying basic kit and firing decades’ old AK4s while using smartphones was striking.

“That this form of warfare is back and relevant should not come as a surprise at all – we’ve had from 2014 onwards to realise that is the case. I remember coming back from that first visit to Ukraine and asking friends who were still in the military if they knew how to dig a trench properly and telling them ‘if you don’t and if your soldiers don’t, you need to learn very quickly because in the next war you’re going to be digging one and fighting from it’.



“While vastly different from recent UK experiences of conflict, the nature of the current fighting in Ukraine – a war of attrition and contested front-lines – does not come as a surprise.”

“At the time the focus of the British military was elsewhere and the lessons from Ukraine, from a European battlefield, were not really being given the attention they deserved. Debaltseve demonstrated that mass mattered but in the UK there was a focus on quality and the British Army was shedding mass in all sorts of ways.

“To put it bluntly, Ukraine has shown that in battle you need to be able to take hits and sustain equipment losses on a huge scale. That is one of the things I have found most sobering on my recent visits to the battlefields – in areas where the fighting has moved on there is debris of war everywhere.

“Both sides are losing so many people and equipment during these intense battles and there are entire squadron’s worth of equipment littering the ground. We don’t have that mass to lose.”





U.S. Army photo by Sgt. Julio Hernandez

THE CURRENT FIGHT AGAINST ISIS: A PERSONAL ASSESSMENT

AUTHOR

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IN THE summer of 2014, the world watched aghast as Muslim extremists fighting under the banner of the Islamic State of Iraq and al Shams (ISIS) swept through northern Iraq and Syria in what became known as a jihadi blitzkrieg. In just 100 days ISIS was in control of some six million people and an area roughly the size of Great Britain. By late 2014 a global coalition was formed to prevent ISIS from making further advances and, thereby, threatening regional allies and inspiring international terrorism. The US-led military mission, known as Operation Inherent Resolve, supported local forces with an extensive allied air campaign and some ground-based combat assistance. It took three years of fierce fighting before Iraq was liberated from the so-called Caliphate and it was not until March 2019 that ISIS forces were defeated across the region after their final and, ultimately, unsuccessful stand near the Syrian town of Baghuz.

Today, the fight against ISIS continues, albeit with less requirement for direct military action. Since early 2022, Operation Inherent Resolve has been an 'advise, enable and assist' mission, seeking the enduring defeat of ISIS by facilitating the development of long-term security arrangements and local stability. It is not an easy task. Iraq and Northeast Syria remain blighted by numerous security challenges, including the influence of drugs, organised crime, corruption and sectarianism, as well as small pockets of ISIS resistance. The area also continues to suffer from a lack of economic stability, effective governance and social cohesion. As such, Iraq remains a long way from being the beacon of democratic stability that the US-led 2003 intervention hoped to create. Nevertheless, the international community remains engaged across all lines of development and currently there are up to 80 countries supporting the Global Coalition Against ISIS.

From a security perspective, the Coalition’s multinational Combined Joint Task Force comprises of some 5,000 military personnel and is spread across three principal locations: the main headquarters in Kuwait; the forward headquarters in Baghdad; and a deployed element in the Kurdish city of Erbil. Presently, the Combined Joint Task Force focuses its efforts on developing partner force proficiency and has recently overseen an encouraging increase in the ability of the Iraqi Security Forces to conduct time-sensitive strikes against ISIS remnants, using its own ground, air and aviation assets. As a result, the threat from ISIS on the battlefield is at an all-time low. In comparison to 2021, ISIS attacks in 2022 decreased by 38 per cent in Iraq and by 31 per cent in Syria. The lethality of these attacks was also markedly reduced. However, the organisation is down but not out and today the ISIS menace lies away from its fielded forces.

The current ISIS threat stems from the ‘temporary’ detention facilities and displaced persons camps across Northeast Syria. Currently, there are some 12,000 ISIS detainees living in truly squalid conditions within several makeshift detention facilities, run by the Syrian Democratic Forces. These facilities have become a hotbed for radicalisation and incubators for the ISIS ideology. Indeed, recent history tells us that detention facilities can act like academies for

An Australian Army officer, deployed in support of Op Inherent Resolve in 2018, briefs Iraqi soldiers attending an officer and junior leaders course at Camp Taji in Iraq. Coalition-supported training is enhancing the Iraqi forces’ capacity to maintain security. U.S. Army photo by Spc. Audrey Ward



“In a specific programme known as ‘Cubs of the Caliphate’, young children are targeted for special education and radicalisation, as ISIS seeks to breed its next generation of fighters.”

extremist groups, especially considering how ISIS emerged during the mid-2000s from within the US detention facility at Camp Bucca. Little has changed and ISIS still perceives a period of incarceration as an essential element of their collective creed and the credibility of their individual fighters. Finding a long-term solution to those currently held in the detention facilities, therefore, is a crucial step in maintaining the defeat of ISIS into the future. The

displaced persons camps in Northeast Syria also represent a significant challenge. There are more than 100,000 displaced persons currently squeezed into camps designed to house fewer than half that number. These cramped facilities are difficult to police and allow ISIS elements to thrive. A good example is al Hol, which is home to more than 53,000 displaced people in a facility designed to hold only 10,000. Intimidation is ripe and violence is commonplace. In 2022 there were more than 30 murders amongst a population where 85 per cent are female and 56 per cent are under the age of 12. The vulnerable adolescent community is of most concern. In a specific programme known as ‘Cubs of the Caliphate’, young children are targeted for special education and radicalisation, as ISIS seeks to breed its next generation of fighters. Like all the camps in Northeast Syria, al Hol needs considerable commitment to reduce over-crowding and minimise the ISIS influence.

The long-term solution to address both the detention facilities and displaced persons camps concern a fledgling programme of repatriation, rehabilitation and reintegration. Since mid-2021, the Iraqi government has organised the repatriation of 150 families (about 600 people) each month from the displaced persons camps, along with about 50 detainees from the detention facilities. Rehabilitation for these individuals occurs at the Jeddah 1 facility, a special camp just south of Mosul. Here, the Iraqi government and international partners provide a safe and secure environment where people can re-start their lives. Over a four-month period, Jeddah 1 provides a comprehensive programme of health care, employment



training and administrative support as well as engagement with moderate Imams and reformed ISIS fighters. Children can attend school, often for the first time, and returnees can meet community leaders in their chosen place of resettlement.

The last step of the process, reintegration, is perhaps the hardest. Returnees from the camps must be properly reintegrated into local communities who, in turn, must be prepared to receive them. The Iraqi government and international partners are providing support to local authorities to ensure that viable employment opportunities are available and that returnees do not become a burden on their receiving communities. Still, the process is fraught with hazard. Due to popular misconception that everyone from the camps is a die-hard ISIS fanatic, returnees can become victims of stigmatisation and marginalisation. Much has been done to address this through nationwide information campaigns, but attitudes are hard to change. As with both repatriation and rehabilitation, the reintegration element of this long-term plan is in its early stages and requires continued support from Iraq's international partners before positive progress can take root.

Indeed, continued engagement from international organisations and aid agencies remains vital for the region as the current fight against ISIS is not a purely military one. Iraq and Northeast Syria will remain vulnerable to alternative influences like ISIS until they can combat corruption, establish effective governance and enhance the socio-economic



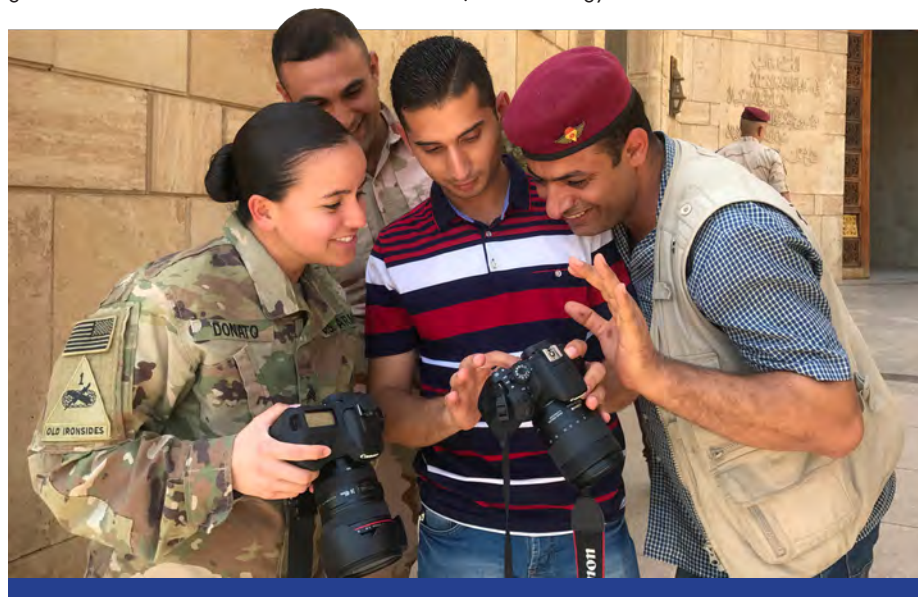
Brigadier Karl Harris, then the deputy commanding general of Combined Joint Task Force – Operation Inherent Resolve, and Major General Tahseen Al-Khafaji hold a discussion during a meeting between the Security Media Cell and the General Directorate of Media and National Awareness in Baghdad on 27th March, 2022. U.S. Army photo by Staff Sgt. Bree-Ann Ramos-Cliffon

prospects of their ordinary citizens. There is still much to do here. Throughout 2022, Iraq endured long periods of instability as its political elites were unable to form a functioning government and economic progress was stymied by endemic corruption and a rampant black economy. Meanwhile, local people were left without functioning schools, essential services, local administration and jobs. These conditions, coupled with the insufferable heat of the local climate, create the perfect conditions for civil unrest and the search for alternative systems of governance – such as the ISIS ideology.

As well as in the camps and detention facilities, this ideology is also active in the information

environment. Although not as sophisticated as they once were, ISIS continues to use information operations in a bid to remain relevant. Through sporadic use of social media and their weekly newsletter – al Naba – ISIS attempts to amplify their low-level activities and attract potential recruits. Fortunately, the Iraqi Security Forces have embraced information operations as a vital element of combat power. Having learnt hard lessons in the recent past, Iraqi forces dedicate considerable effort to dominating the information environment and countering malign messaging from ISIS. Across a comprehensive range of channels, from radio and television to social media and the internet, the Iraqi military are determined that the fight against ISIS in the non-physical environment is as strong as it is in the physical.

In closing, it is worth emphasising two specific points: first, that ISIS as a fighting force is down but not completely out; and second, that the current fight against ISIS lies in finding long-term solutions to the detention facilities and displaced persons camps of Northeast Syria. Much of this work lies outside the military line of operation, although the development of a stable and dependable security sector is a vital first step from which the broader issues can be tackled. But tackled they must be. Until Iraq and Northeast Syria can take concrete steps to end corruption, build governance and promote socio-economic development, the region will be vulnerable to radical solutions provided by the likes of the ISIS ideology. In this, Iraq and Northeast Syria will require continued support and engagement from the international community. Although many around the world might feel that the ISIS crisis is over, unfortunately the fight may be entering its most crucial phase.



“Having learnt hard lessons, Iraqi forces dedicate considerable effort to dominating the information environment and countering malign messaging. The Iraqi military are determined that the fight against ISIS in the non-physical environment is as strong as it is in the physical.”

U.S. Army photo by Maj Benjamin Johnson



AUTHOR

This article was produced by an all-source China analyst in the **Land Intelligence Fusion Centre (LIFC)**. The LIFC delivers all source intelligence and understanding support to the Army and Defence across all operational frameworks, focused on Commander Field Army's priorities. Through close links with UK and international intelligence communities, the LIFC provides situational awareness and support for the planning and operating of Land operations.



HOW MIGHT CHINA FIGHT IN 2026?

THOSE trying to mind their own business on the democratic and self-governing island of Taiwan don't have to listen too intently to hear an intensifying of the sabre rattling coming from their uncomfortably close neighbours. Indeed, in April of this year there will have been a significant din on their doorstep as China conducted three days of military drills around what it considers to be a renegade province, 'sealing off' the island and simulating targeted strikes on 'important' targets. The roar of 90-plus aircraft – reputedly loaded with live ammunition and supported by a dozen warships – will have proved difficult to ignore in Taipei, not least as Xi Jinping has repeatedly voiced his desire to see Taiwan reunited with the mainland since he became China's leader in 2012. Taiwan is an issue, Xi asserts, that "cannot be passed on from generation to generation". For the Taiwanese, it is deeply troubling that there are very real 'actions' beginning to speak louder than words.

In a marked departure from its frequently referenced 'peaceful rise,' China is now

rapidly modernising its land forces and developing the capabilities it deems necessary to fight and win against any adversary.¹ In contrast with its historical focus on defence, China's 2019 White Paper states that it will 'resolutely defeat anyone attempting to separate Taiwan from China and safeguard national unity at all costs'. This article will examine the key doctrinal concepts, threat perceptions and technological changes which are driving reform of the People's Liberation Army (PLA) in 2023 and considers how it might fight in 2026.

BACKGROUND

The PLA is the armed wing of the Chinese Communist Party rather than China's national army. As such, PLA reforms are being tailored to 'enhance the loyalty' of the PLA to the Party, as well as enhance operational effectiveness. The Chinese Communist Party is 'continuing to strengthen the military in the Chinese way.' This means PLA reforms are focused on finding solutions to the challenges of 21st century warfare that do not undermine the fundamental role of the PLA as a party army.

Since the end of the Cold War, the PLA has transitioned from an unwieldy defensive force prepared to face land invasions to a leaner, increasingly mobile and technologically adept force that can conduct operations within and beyond China's periphery. Lacking urgent operational requirements, other than those set by the Chinese Communist Party, and minimal binding overseas commitments, the PLA has space and time to experiment and adapt to what it sees as the conditions under which a 21st century conflict will be fought.² This has led to a fast pace of experimentation and reform within the PLA. Lacking their own recent operational experience from which to draw on, PLA reforms have been driven by its observation of lessons learned from wars involving other nations. Key among these lessons is the advantage that a technologically superior force has enjoyed against its adversaries.

OUTLOOK: WHAT DOES THE FIGHT LOOK LIKE FOR CHINA IN 2026?

In 2026, the PLA-Army (PLAA) will prefer to win without fighting, relying on intelligence, anti-access/area denial, cyber, electronic warfare and counter-satellite capabilities to constrain an adversary's options for manoeuvre and paralyse their decision-making capabilities. The PLAA can be described as risk adverse, preferring to achieve objectives without engaging its manoeuvre brigades and battalions in force-on-force combat. Other than UN peacekeeping deployments, the PLAA has not seen combat since 1979 and is open about its lack of operational experience, often using this to reinforce the Chinese Communist Party's narrative of China's 'peaceful rise'. However, PLA literature frequently refers to the 'peace disease', in which decades of peace have undermined readiness and encouraged corruption.³

The PLAA is developing into a more mobile and combat-ready force, providing the Chinese Communist Party with a flexible toolkit of kinetic and non-kinetic capabilities. The PLAA's modular combined arms battalions reflect this, allowing commanders to tailor force composition in line with systems destruction warfare. However, as a party army, the PLAA is cognisant that tactical and operational failures reflect poorly on the Party and its legitimacy.⁴ Therefore, should the PLAA be required to conduct warfighting operations, its structure, doctrine and equipment are optimised to achieve quick and decisive victory. Minimising the risks of direct engagement, the PLAA in 2026 will rely on its expansive artillery units and its intelligence, surveillance, target acquisition, and reconnaissance capabilities to identify,



“Other than UN peacekeeping deployments, the PLAA has not seen combat since 1979 and is open about its lack of operational experience, often using this to reinforce the Chinese Communist Party's narrative of China's 'peaceful rise'.”

target, degrade and isolate enemy units.⁵

The PLAA frequently calls for its commanders to show flexibility, especially when dealing with unexpected situations, although this does not extend to devolving mission command to echelons below the theatre command.⁶ This is reflected in how PLAA doctrine continues to embrace the idea of using technology to facilitate rapid centralised decision-making and streamline command and control chains rather than devolving decision-making.⁷

‘TECHNOLOGY DETERMINES TACTICS’: LAND EXPERIMENTATION AND MODERNISATION

In line with the Chinese Communist Party's Marxist-Leninist ideology, the PLA embraces the concept of technological determinism with technological progress dictating doctrine and tactics.⁸ The impact of this at the land tactical level is that the PLAA will attempt to leverage, weaponise, and deploy bleeding-edge technologies ahead of bringing the whole PLA up to a baseline standard.⁹ Under Xi Jinping, the PLA has been subject to an unprecedented pace of reform and change. Since the Chinese Communist Party's 19th Party Congress in 2017, almost every part of the PLA has undergone major internal reorganisation.¹⁰ The Party established development goals for the PLA to implement reform ambitions:

Mechanisation: Replacing legacy armoured vehicles and weapon systems to build the PLAA into a more mobile and flexible fighting force with higher levels of combat readiness.¹¹

Informationisation: The PLAA views information dominance, the control of battlefield data whilst constraining an adversaries' ability to collect and exploit it, as key to operational success. This goal focuses on using improved communications, fire control and targeting systems to accelerate battlefield decisions and operations.¹² In PLAA texts, informationisation continues to be regarded as work in progress.¹³

Intelligentisation: This concept refers to a future PLAA supported by emerging and yet-to-be realised technologies such as swarming unmanned aerial systems, quantum computing and artificial intelligence.¹⁴ This future modernisation ambition reflects how the Chinese Communist Party aims for the PLA, as a 'world class' military, to pioneer new operational concepts beyond those required to be a peer to the United States.

¹‘China's National Defence in the New Era’ (China's defence white paper 2019) (Beijing 2019).

²rand.org/blog/2018/11/chinas-military-has-no-combat-experience-does-it-matter.html

³Timothy Heath, ‘China's military has no combat experience: Does it matter?’

⁴Chase, Engstrom, Cheung, Guinness, Harold, Puska and Berkowitz, ‘China's incomplete military transformation: Assessing the weaknesses of the Peoples Liberation Army’ (Rand, 2015), p.128.

⁵‘China: How the PLA Fights’, *How they Fight series* (TRADOC, 2022).

⁶Dennis Blasko, ‘The biggest loser in Chinese military reforms: The PLA Army’, in, Saunders, Ding, Scobell Yang and Wuthnow (eds), *Chairman Xi remakes the PLA* p.355; Ji Rongren (ed) ‘Services and arms application in joint operations’ (November 2021), p.40.

⁷China: PLAA Combined Arms Brigade's Firepower Strike Operations (TRADOC, 2022).

⁸Xu Lisheng Wang Zhaoyong (ed) and China Aerospace Studies Institute (trans), ‘Research on port landing operations’ (National Defence University, Beijing 2015) p.8.

⁹Elsa Kania and Ian McCaslin, ‘The PLA's evolving outlook on urban warfare, training and implications for Taiwan’ (Institute for the Study of War, Washington, 2022), p.16.

¹⁰Philip C. Saunders and Joel Wuthnow, ‘Assessing Chinese military reforms’, in, Saunders, Ding, Scobell Yang and Wuthnow (eds), *Chairman Xi remakes the PLA: Assessing Chinese Military reforms* (NDU Washington, 2019), p.712.

¹¹Samuel Cranny-Evans, ‘China in focus: Land, air, CAISR and weapons development in China's 14th five-year plan’ (Jane's 2020), p.21.

¹²US Department of Defence ‘Military and security developments involving the Peoples Republic of China, 2022’ (Washington, 2022) pp.160-162.

¹³Xiao Tianlang (ed) ‘The Science of Military Strategy’ (National Defence University Press, Beijing 2020), p.36.

¹⁴Burke, Guinness Cooper and Cozad, ‘Peoples Liberation Army Operational Concepts’, p.21.

Xi's reforms can be seen as an effort to turn these ambitions into tangible milestones for completion between 2020 and 2049.¹⁵

- **2020:** Mechanisation of the PLAA and progress on informationisation.
- **2027:** Professionalising the PLAA. This likely refers to increasing the number of professional specialist non-commissioned officers and officers in the PLAA.
- **2035:** Full modernisation and the achievement of 'intelligentisation'.¹⁶
- **2049:** The PLAA is part of a 'world class' PLA.¹⁷

The PLAA has been modernised and reformed at a slower pace and with less urgency than the PLA's Navy, Air Force or Strategic Rocket Force. This is motivated by the Chinese Communist Party's changing threat perceptions, which now prioritise the maritime domain above countering land invasions.¹⁸

PLAA STRUCTURE: THEATRE COMMANDS

In 2016, the PLA established five regional theatre commands which sit under the Chinese Communist Party's Central Military Commission. The Central Military Commission is chaired by Xi Jinping and exercises command authority over the PLA.¹⁹ Each theatre command exercises operational control over its assigned units via its Joint Operations Command Centre. The theatre command structure is intended to facilitate what the PLA refers to as 'integrated joint operations'.²⁰ Covering China's border with India, PLAA units in the **Western Theatre Command** prepare for contingencies along disputed frontiers. They also give the PLA options for intervening more widely in Central Asia.²¹ Covering the Taiwan Strait, the **Eastern Theatre Command** looks towards a Taiwan contingency. Its units routinely conduct amphibious exercises.²² The **Southern Theatre Command** also prepares for border contingencies along China's Southeast Asian borders and the South China Sea. It also acts as a reserve for the Eastern Theatre Command. **Northern Theatre Command** PLAA units primarily prepare for contingencies in the Korean peninsula. Traditionally, they defended China's border with Russia before border disputes were settled in 2008. The **Central Theatre Command** is primarily responsible for ensuring regime security. The Central Theatre Command is also a strategic reserve for the other theatres.

MILITARY REGIONS AND GARRISONS

The PLA also maintains dedicated military regions in Tibet and Xinjiang. PLAA forces assigned to these regions form part of the

Chinese Communist Party's extensive security architecture, reflecting how the PLAA can be deployed to reinforce the Chinese Communist Party's control over sensitive areas.²³ In a similar vein, the PLAA maintains garrisons in Macau and Hong Kong.

GROUP ARMIES

The PLAA has 13 group armies, numbered 71-83. The group army is a pool of manoeuvre and specialised brigades. This allows theatre commanders to form battlegroups tailored to specific operational requirements.²⁴ Each group army contains six combined arms brigades, the PLAA's primary warfighting unit, and six specialised brigades.²⁵

COMBINED ARMS BRIGADE

Influenced by PLA observation of the US brigade combat team, the combined arms brigade is the PLAA's basic operational

¹⁵Edmund Burke and Arthur Chan, 'Coming to a (new) theatre near you: Command, control, and forces', in, Saunders, Ding, Scobell Yang and Wuthnow (eds), *Chairman Xi remakes the PLA*, p.229.

¹⁶Meia Nouwens, 'China's military modernisation: Will the Peoples Liberation Army complete its reforms?' (ISS, December 2022).

¹⁷Burke, Guinness Cooper and Cozad, 'Peoples Liberation Army Operational Concepts', p.21.

¹⁸Dennis Blasko, 'The biggest loser in Chinese military reforms: The PLA Army', in, Saunders, Ding, Scobell Yang and Wuthnow (eds), *Chairman Xi remakes the PLA* p.346.

¹⁹Amrita Jash, 'The 20th Central Military Commission: Personnel and priorities', in, *Jamestown China Brief*, Vol.22, Issue 22 (December, 2022).

²⁰Edmund Burke and Arthur Chan, 'Coming to a (new) theatre near you: Command, control and forces', in, Saunders, Ding, Scobell Yang and Wuthnow (eds), *Chairman Xi remakes the PLA*, p.230.

²¹US Department of Defence 'Military and security developments involving the People's Republic of China, annual report to Congress' (Washington, 2020) p.104.

²²US Department of Defence 'Military and security developments involving the Peoples Republic of China, annual report to Congress' (Washington, 2021) p.97.

²³Military and security developments involving the Peoples Republic of China (2022), p.46.

²⁴TRADOC, 'China: PLAA Combined Arms Brigade's logistics operations', *How they Fight* series.

²⁵Army Techniques Publication: ATP 7-100 Chinese tactics (August 2021), 2.6-7.

²⁶Joshua Arostegui, 'An introduction to China's high-mobility Combined Arms Battalion' (2020).

²⁷Dennis Blasko, 'The biggest loser in Chinese military reforms: The PLA Army', in, Saunders, Ding, Scobell Yang and Wuthnow (eds), *Chairman Xi remakes the PLA* p.346.

²⁸ATP 7-100 Chinese tactics, 2.10.

²⁹'China: CA-BDE Air Defence Operations', *How they fight* series (TRADOC, 2022).

manoeuvre warfighting unit. With up to 3,000 soldiers, each combined arms brigade contains manoeuvre battalions alongside integrated artillery, short-range air defence, electronic warfare and logistics units. There are three types of combined arms brigade:

1. Heavy combined arms brigades operate tracked armour, primarily main battle tanks, infantry fighting vehicles and armoured personnel carriers.
2. Medium combined arms brigades are intended to operate wheeled armoured personnel carriers and infantry fighting vehicles. With a lower logistics burden than combined arms brigades, these formations prioritise high-mobility and flexibility over firepower. By 2026, an increasing proportion of medium units will be equipped with 8x8 vehicles with modular armaments.
3. Light combined arms brigades contain the PLAA's motorised infantry units. By 2026, these units will be increasingly equipped with modernised protected mobility vehicles.²⁶

Each combined arms brigade has a high density of towed and self-propelled artillery and air defence systems in two organic battalions. Integrated reconnaissance and targeting are provided by a dedicated reconnaissance battalion. Operational and service support battalions provide organic engineering and logistics capabilities.

COMBINED ARMS BATTALION

The combined arms battalion is the basic tactical unit of the PLAA. With four of these units in each combined arms brigade, the PLAA intends the battalion to be capable of supporting its operations with integrated logistics, engineering, fire support and short-range air defence companies. 105mm assault guns are commonplace in medium and amphibious heavy battalions.²⁷

GROUP ARMY SUPPORT BRIGADES

These formations are designed to be modular, with individual units detached to support manoeuvre operations. **Artillery brigades** with unmanned aerial systems-supported targeting hold the PLAA's longer-range rocket and precision artillery systems.²⁷ **Air defence brigades** are detached to defend critical targets and support manoeuvre units with short and medium-range missile and gun systems and electronic warfare capabilities.²⁸ **Special forces brigades** are elite light infantry trained and equipped to fight in their home theatre. They will conduct reconnaissance, raiding and targeting in support of other PLAA units.²⁹ **Aviation brigades** provide each group army with a pool of attack, medium-lift and reconnaissance helicopters. The PLAA

has prioritised expanding its rotary aviation capabilities to increase mobility.³⁰ The PLAA also has two dedicated air assault brigades. Engineering and chemical defence brigades cover obstacle clearance, gap crossing, landmines, chemical defence and obscurants.³¹ Service support brigades hold logistics, transportation, medical, repair, command and control, unmanned aerial systems, signals and land-focused electronic warfare units.³²

'A MODERNISED FORCE STRUCTURE WITH CHINESE CHARACTERISTICS'

PLAA doctrine is outlined in the PLA's *Combat Regulations*. Unfortunately, these are not publicly available. However, PLA sources who have access to PLAA doctrine occasionally write about the PLAA's operational concepts. From these sources, one can gain an insight into China's land doctrine.³³ PLA doctrine also evolves to incorporate ideological developments. Every change in Chinese Communist Party leadership has seen an update to PLA military thought, as stated in China's 2019 Defence White Paper.³⁴ The material we have available to us therefore shows the Chinese Communist Party's understanding of warfare, which in turn sets the baseline upon which their doctrine is built.

SYSTEMS DESTRUCTION WARFARE

The PLA views its opponents as a system that can be countered by forces with kinetic and non-kinetic capabilities. These PLA capabilities are tailored to counter key enemy 'nodes', critical force enablers or vulnerable systems whose destruction would disproportionately degrade adversary operational effectiveness.³⁵ Therefore, the PLAA's operational approach calls for their forces to be tailored to counter adversary systems and exploit known weaknesses.³⁶

ACTIVE DEFENCE

Active defence has evolved with Chinese Communist Party guiding theory since the early 20th century. Active defence has changed with each generation of leaders. Originally reflecting Maoist guerrilla warfare and infiltration tactics, it evolved under Deng Xiaoping in the 1980s to call for adversaries to be held at an increased distance from China's urban centres. Between 1989 and 2013, under Jiang Zemin and Hu Jintao, the PLA avidly observed and applied lessons learned from US performance in the First Gulf War and the Balkan wars.³⁷ As a result, active defence transitioned towards prioritising the use of precision weapon systems and information dominance to deny, deter and defeat adversaries at greater distance from China.³⁸ It is strategically defensive but operationally



"The development of unmanned aerial systems and electronic warfare units will allow [China's military] to increasingly conduct active defence above and below the threshold of war."

offensive, calling for localised, pre-emptive operations to quickly achieve objectives with minimum cost. The Chinese Communist Party wishes for the PLAA to constrain adversary behaviour and tightly dictate escalation from the outset of a conflict. In an ideal scenario, the PLA would bring the totality of its capabilities to bear, achieving numerical and qualitative over-match.³⁹ In 2026, the development of unmanned aerial systems and electronic warfare units within PLAA units will allow them to increasingly conduct active defence above and below the threshold of war.⁴⁰

Land forces tailored to local conditions and enemy dispositions will be surged to conflict zones to achieve localised numerical and qualitative over-match. PLAA operations will likely be coordinated at theatre-level, with strict command and control protocols facilitated by upgraded communications and intelligence, surveillance, target acquisition and reconnaissance systems that can rapidly gather and analyse battlefield data.

FIREPOWER OPERATIONS

In 2026, the PLAA will rely on its extensive artillery capability to compensate for the inexperience of its direct-fire manoeuvre formations and limited integration of air support. The PLAA will aim to build and maintain a qualitative and numerical artillery advantage using brigade and battalion-level systems. This reliance on artillery is evidenced within PLAA guidelines which recommend that a 7-1 advantage in artillery systems be maintained for operational success.

In line with systems destruction warfare, precision-guided missile, rocket and shell munitions will target adversary command and control, logistics, radar systems, artillery and air defence positions identified by PLAA intelligence, surveillance, target acquisition

and reconnaissance. High-level systems such as the PLAA's PCL-191 multiple rocket launch system will configure their munition payloads based on target priority, allowing artillery units to launch cruise missiles or unguided 300mm and 370mm rockets.⁴¹ Ground-launched cruise missiles are a new addition to the PLAA and are referred to as 'campaign tactical missiles' in PLAA doctrine.⁴²

Shorter range artillery systems within combined arms brigades will employ their 120mm gun mortars, 122mm and 155mm howitzers and 122mm multiple rocket launch system against adversary force concentrations.⁴³ By 2026, these older systems will be increasingly enhanced with upgraded fire control and command and control capabilities. Upgraded systems will remain in service and gradually be replaced by modernised, lightweight and mobile systems that can keep pace with manoeuvre forces.⁴⁴

³⁰ATP 7-100.3 *Chinese Tactics* (August, 2021), 2.13; John Chen and Joel Wuthnow, 'Chinese special operations in a large-scale island landing', in *US Naval war college, China Maritime Report* (January, 2022), p.3.

³¹Army Techniques Publication: *Chinese Tactics* (August, 2021), 2.13.

³²Army Techniques Publication: *ATP 7-100 Chinese tactics* (August 2021), 2.12.

³³Burke, Guinness Cooper and Cozad, *Peoples Liberation Army Operational Concepts* (Rand 2021), p.24.

³⁴'China's National Defence in the New Era' (China's defence white paper 2019) (Beijing 2019).

³⁵Jeffrey Engstrom, 'Systems confrontation and system destruction warfare: How the Chinese People's Liberation Army seeks to wage modern warfare' (Rand, 2018), p.119.

³⁶Burke, Guinness Cooper and Cozad, *Peoples Liberation Army Operational Concepts*, pp.8-9.

³⁷June Teufel Dreyer, 'Peoples Liberation Army lessons from foreign conflicts: The air war in Kosovo', in, Scobell, Lai and Kamphausen (eds), *Chinese lessons from other people's wars* (Strategic Studies Institute) pp.49-56; Dean Cheng, 'Chinese lessons from the Gulf wars', in, obell, Lai and Kamphausen (eds), *Chinese lessons from other people's wars* pp.159-160.

³⁸Burke, Guinness Cooper and Cozad, *Peoples Liberation Army Operational Concepts*, p.4.

³⁹'China: How the PLA Fights', *How they Fight series* (TRADOC, 2022).

⁴⁰'China: 'CA-BDE Electronic Warfare Operations' (TRADOC, 2022); *ATP 7-100 Chinese tactics*, 2.12.

⁴¹Kapil Kojal, 'China deploys PHL-16 MLRS along Taiwan Strait', in, *Jane's Defence Weekly*, 28/02/2023.

⁴²Fu Bingzhong, 'Lectures on the science of army campaigns', National Defence University (Beijing, 2006), cited in, McCauley, *Army campaign doctrine in transition?*, p.39.

⁴³Kevin McCauley, 'Peoples Liberation Army: Army campaign doctrine in transition' (EMSO, 2020), p.19 and p.39.

⁴⁴TRADOC, *China: PLAA Combined Arms Brigade's Firepower Strike Operations* (2022); *Chinese tactics, ATP 7-100.3*, 2.10.

Targeting capabilities will be well rehearsed and increasingly 'informationised'; identified by forward observers in the PLAA's reconnaissance battalions, uncrewed aerial systems, satellite imagery and radar systems. The PLAA has almost certainly prioritised investment in these critical systems. The PLAA will make use of multiple intelligence, surveillance, target acquisition and reconnaissance redundancies to over-match adversary countermeasures. Integration with PLA Air Force will likely continue to be limited. At present, PLA doctrine calls for PLA Air Force liaisons to be positioned with command post 'firepower coordination centres'. It is also likely that a pre-planned number of PLA Air Force ground attack sorties are assigned to each ground unit.

The PLAA is building a high density of air defence systems, allowing manoeuvre units to operate under a tiered and layered air defence system. Denying air superiority to adversaries is almost certainly a PLAA priority.⁴³ By 2026, modern medium range surface-to-air-missile systems such as the HQ-16, will defend tactical formations at ranges past 70km. These units will increasingly integrate air-focused electronic warfare platforms targeting adversary sensors, communications and unmanned aerial systems.⁴⁶ Shorter range gun and missile systems will provide manoeuvre units with point defence against aviation and cruise missiles. Older systems are being increasingly enhanced with upgraded data connections to wider air defence networks, giving PLAA commanders increased situational awareness. Whilst the level of integration between short and medium-range air defence units is unknown. Long range surface-to-air-missile systems are operated by the PLA Air Force which raises questions about the level of integration given the PLA's known lack of joint operational experience.

MANOEUVER FUNCTIONS

Should PLAA manoeuvre formations be required to conduct combat operations in 2026, they will attempt to apply systems destruction at the tactical level.⁴⁷ Supported by extensive reconnaissance, PLAA forces will be modular, generated from what PLAA theatre commanders view to be an optimum mixture of heavy, light and medium combined arms brigades. PLAA commanders will likely aim to strike first and seize initiative at an early stage in a conflict, conducting rapid offensive actions to outmanoeuvre and overwhelm adversaries in the shortest possible time. In 2026, a successful PLAA land operation will use concealment and deception to mask a build-up of land forces. The PLAA will aim to achieve localised numerical and qualitative advantages. Known PLAA guidelines recommend at least a 4-1 manoeuvre force

advantage and up to three anti-tank systems for every enemy armoured vehicle. This build-up will be followed by offensive operations across the full depth of the battlefield. Artillery support, electronic warfare and rapid manoeuvre operations will aim to isolate adversary manoeuvre formations and prevent mutual support. If the PLAA fights in 2026, it will prioritise the destruction of ground-based radars, artillery, air defence and command and control systems before degrading enemy manoeuvre formations. PLAA formations will rely on their extensive fire support from armoured vehicles, gun-mortars and grenade launchers to suppress enemy formations at shorter-ranges. If the PLAA must fight a defensive action, commanders will prioritise conserving their force strengths to delay and degrade adversary forces with an aim of switching to decisive offensive operations as quickly as possible.

CHALLENGES

PLAA modernisation is uneven and incomplete. In a typical PLAA combined arms brigade, innovative electronic warfare and artillery will continue to coexist with 1960s-era systems up to 2026. An enduring challenge for the conscription-based PLAA is the recruitment and retention of skilled non-commissioned officers and officers able to navigate the complexities of active defence and systems destruction warfare.⁴⁸ Xi's reforms have transformed the PLAA since 2017 and such change is disruptive. For example, battalion and brigade commanders are still relatively new to their roles or have spent most of their careers under earlier systems. There is also likely to be a considerable degree of variation across the PLAA as units are modernised at different paces and new doctrine is applied inconsistently between units. These difficulties are evident in multiple PLA publications which have criticised commanders for inflexibility and operational ineffectiveness. The Chinese Communist Party will not allow reforms that change or undermine the party-army relationship. An example of this is the continuation of a dual-command system in which PLAA officers are

⁴³China: CA-BDE Air Defence Operations (TRADOC, 2022).

⁴⁶TRADOC, 'China: CA-BDE Air Defence Operations', *How they fight series*.

⁴⁷Army Techniques Publication: *Chinese Tactics* (August, 2021), 4.1.

⁴⁸David Geari and Erin Richter, 'China's military force posture under conditions of a weakened People's Liberation Army: alternative military futures', in, David Lai and Roy Kamphausen (eds) *The People's Liberation Army in 2025* (US Army War College, 2015), p.241.

⁴⁹Gary Li, 'China's OPFOR comes of age', in, *Jamestown China Brief*, Vol.15 Issue:4 (February, 2015).

accompanied by a political officer at company level and above. Political officers are a conduit for Chinese Communist Party authority and share responsibility for unit administrative and operational decisions with their accompanying PLAA officer. The PLA forms new service branches for priority capabilities or areas where it perceives shortcomings. This is evidenced by Xi's creation of the Joint Logistics Support Force to manage PLA logistics and the Strategic Support Force to oversee strategic-level cyber, electronic warfare, information and space operations. As new organisations coming into existence from 2016, these have been described as innovative, but remain largely untested. Logistics will likely continue to be a challenge for the PLA, many of the capabilities assigned to the Joint Logistics Support Force likely remain at the concept stage at present, meaning that up to 2026, the PLAA may find itself struggling if called upon to fight a protracted conflict. A drive to increase the realism and quality of PLAA training indicates that unrealistic and scripted training is viewed as a key shortcoming by the Chinese Communist Party. The PLAA is developing professional opposing force units and investing in modern theatre-level exercise facilities.⁴⁹ However, articles in the *PLA Daily* have criticised units that exercise under unrealistically perfect conditions to achieve better results indicating that gaming exercises remains commonplace.

CONCLUSION

By 2026, the PLAA aims to over-match, surprise and rapidly defeat its adversaries in a geographically contained conflict. In an ideal scenario for the PLA, adversaries on land will be denied the advantages of the information environment and have their freedom of manoeuvre constrained. This will leave blinded, isolated, outmanoeuvred and outnumbered enemy formations vulnerable to PLAA targeting and artillery. The PLA has responded to the challenges of a 21st century operating environment in a way that does not either undermine the authority of the Chinese Communist Party nor challenge guiding Chinese Communist Party thought. However, due to the pace, scale and complexity of reform ambitions, in 2026 the Chinese Communist Party will most likely consider modernisation of the PLAA to be incomplete. Therefore, the PLAA's operational approach will likely aim to circumvent key shortfalls. These are primarily the PLA's lack of operational experience, the uneven pace of modernisation and shortages of key skilled personnel who are able to operationally implement Xi's vision for the PLA. Taiwan – amongst others – will have everything crossed that China does not find the additional 'volume' it seeks any time soon.

COUNTERING ENEMY MOBILITY REDUX

AUTHOR



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AS PICTURES of the pulverised city of Bakhmut testify, Vladimir Putin's 'special military operation' has come at a heavy cost to the land it purportedly seeks to liberate. Russia is, however, not solely responsible for the heavy scarring sustained by Ukraine – its defenders have left marks of their own; inflicting 'self pain' in the name of preservation and strategic advantage. Since the outbreak of war, Ukrainian forces have been carrying out destructive defensive operations, damaging their own property and infrastructure to obstruct and deny the invading Russian troops. Bridges have been blown, Czech hedgehogs littered across approaches, trees felled, dams burst and anti-tank mines laid.

Ukraine's example – albeit conducted in extremis while faced by an existential threat – has thrown a spotlight on the ability of militaries to deny a conventional enemy physical access to,

and use of, terrain. In the case of the British Armed Forces, it is a diminished skill-set. We have divested ourselves of counter-mobility capabilities¹ and as such cannot currently claim to be 'combat credible' for deterrence or high-intensity conflict in this respect. This article will seek to set the context, communicate the benefits of countering enemy mobility and look to the future.

SHAPE OR BE SHAPED

Dr Jack Watling has astutely noted in a series of commentaries that the side in Ukraine that has used battlefield geometry to their advantage – by forcing or allowing the enemy to concentrate into terrain of their choosing and fixing them there – has inflicted high levels of attrition on their adversary, describing the asymmetry in casualties as being 'spectacular' when this occurs. This seems like an obvious objective for an army but belies the tactical and operational judgement and the capabilities required to achieve it. The ability to understand and use physical

geography intelligently as part of the conduct of combined arms operations, including timely use of in-service counter-mobility capabilities² to ensure it is possible to shape an enemy, and to prevent yourself from being shaped, is very difficult to do at scale.

Physical geography provides natural obstacles to mobility (mountains, rivers, forests, marshes etc), as do other existing barriers such as canals, railway embankments and urban structures. When these are understood, analysed and then enhanced with further artificial or reinforcing obstacles, it can delay, fix, turn and block the enemy to our advantage³ and their disadvantage. These obstacles can come in many forms and range from time-consuming, labour intensive – but easier to breach – options such as ditching, wiring and abatis to rapid to create lethal barriers. All augment combined arms manoeuvre, but some more so than others.

Enhancements to existing obstacles add complexity, depth, and fear, and so increase our ability to shape the enemy to our will and decrease their ability to overcome them. When terrain is lacking existing features to enhance, artificial obstacles are relied on almost exclusively, for example in the western desert of north Africa, the plains of northern Germany or the steppes of eastern Europe. Lethal barriers aid us in husbanding our own resources, protecting our fighting power and keeping our scarce formations 'in being' – which for an army lacking mass, seems wise.

DELAY, DELAY, DELAY

The combined arms approach to countering enemy mobility and the employment of lethal barriers reinforces our strengths and compensates for our weaknesses. It also imposes dilemmas on opponents by confronting them with multiple threats.⁴ The four main effects counter mobility can deliver to the combined arms battle and grant hitherto unattainable options to planners and commanders are: disrupt, fix, turn and block.⁵ All are of varying difficulty to achieve depending on time, resources and capabilities available. Above all, countering enemy mobility will enforce delay. Defence Science and Technology Laboratory reports over the last 30 years have demonstrated that counter mobility reduces enemy rates of advance by up to 60 per cent and analysis of the Enhanced Forward Presence Thunder Clap I and II war games found lethal barriers were the single most effective weapon system in both the defend and delay vignettes. This

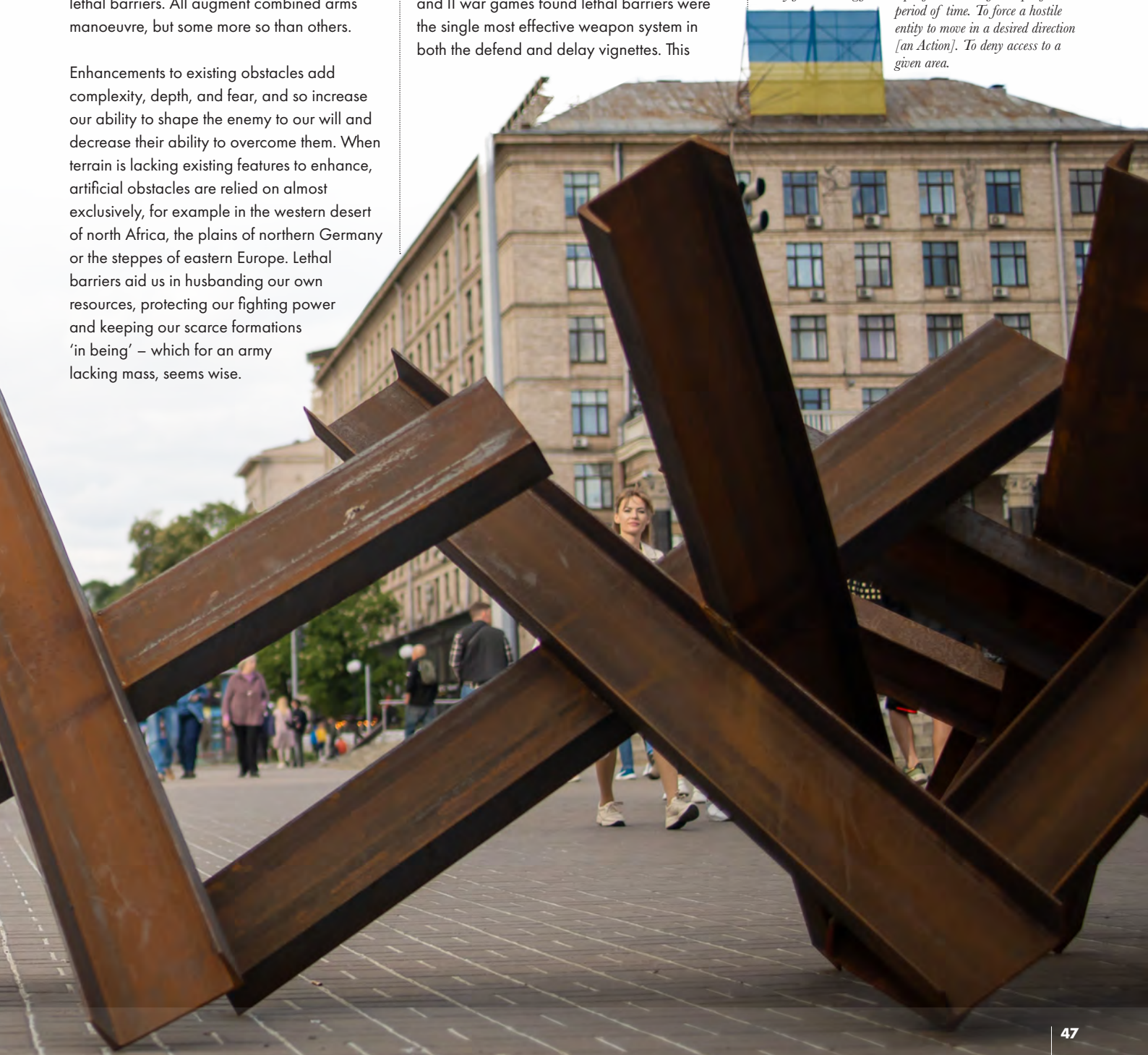
¹*Counter-mobility is a set of combined arms activities that use or enhance the effects of natural and man-made obstacles to prevent the enemy freedom of movement and maneuver' FM 3-0 Operations. 6-162*

²*The superior ability to shape the physical environment can significantly contribute to one's own advantage or to the disadvantage of an adversary. The importance of being able to use the physical environment requires inherent military capability to preserve or adapt the terrain for military purposes.' Allied Joint Doctrine.*

³*Advantage is defined as a condition or circumstance that puts one in a favourable or superior position. Advantage can be structural, gained through the development of fighting power; or emergent and temporal in the engagement space.' Doctrine Note 22/02 – Freedom of Action in the Application of Land Power.*

⁴*ADP Land Operations. Part 2 The Application of Land Power. 2-04. The complementary principle and principle of imposing dilemmas.*

⁵*PEHB: To negatively affect a hostile entity's formation, tempo and/or timetable. To prevent any part of a hostile entity from moving from a specified location for a specified period of time. To force a hostile entity to move in a desired direction [an Action]. To deny access to a given area.*



'success' comes from reducing the ability of enemy reconnaissance to find routes, physically denying access to good routes and terrain, instilling fear and doubt, and reducing cohesion by separating enemy echelons and disrupting manoeuvre.

COVERING FIRE

The delaying effect of a lethal barrier and its psychological impact make all other arms more effective against an enemy. Defence Science and Technology Laboratory evidence and historical case studies have demonstrated that covering fire is more effective by up to half when lethal barriers are employed. This means relatively costly and complex to manufacture missiles and main battle tanks can be employed in fewer numbers and/or used to increase force density in other areas. It also enables close and deep fires to concentrate their focus, resulting in a likely increase in rate of attrition and a greater psychological effect on an enemy and, in turn, could achieve a compensating reduction in rates of fire. Counter mobility enables the power of combinations within a formation and makes the sum greater than its parts.

SWEAT NOT BLOOD

Mechanical effort and artillery can do a lot of the heavy lifting for counter mobility. Our doctrine informs us that using lethal barriers to counter enemy mobility increases our fighting power by a factor of 2.5, meaning you could in theory field 2.5 times fewer fighting formations in a given area and employ them elsewhere or in echelon. Such a multiplier could offset our lack of mass, ensuring, for example, that regardless of the numbers of vehicles or personnel an enemy has, they would only be able to deploy a number of them at a time against us as a consequence of being delayed, turned, fixed to a space of our choosing or decoupled and unable to concentrate. Lethal barriers and their economy of effort will enable us to have an effect over a wider area of responsibility than we are currently used to. If the transparency of the current battlefield seen in Ukraine is leading to a trend of greater dispersal, this seems like something we would wish to do as force densities decrease.

VALUE FOR MONEY

For a very modest £2,000-£3,500 a legally compliant⁶, modern anti-tank system, with a shaped charge and multiple sensors, can destroy or immobilise the most hardened of

⁶The UK is a signatory to the 1997 Ottawa Convention and subsequent protocols (enshrined in UK Landmines Act 1998) – this does not preclude the employment of lethal barriers. Ottawa compliant systems are readily available on the market.



“Immobilising a T-90M or T-72B3 and turning it into a temporary pillbox or a roadblock is worth this investment, particularly if you are fighting an enemy that does not doctrinally recover or repair forward well.”

targets. Immobilising a T-90M or T-72B3 and turning it into a temporary pillbox or a roadblock is worth this investment, particularly if you are fighting an enemy that does not doctrinally recover or repair forward well. Once laid, lethal barriers require no maintenance, are unaffected by fear, fatigue, loitering time or crew rest periods. Battery life, particularly in relation to the more sophisticated models available, can be a limiting factor, but even that can be measured in months. Dummy barriers, which are almost completely free of cost, represent the best value for money when it comes to delaying enemy armour. Further good news in the finance stakes is that many of the vehicles or systems needed for delivering counter mobility capabilities are already in service or – as is the case with 155mm and Guided Multiple Launch Rocket System – already undergoing funded recapitalisation.

LOGISTIC EFFORT

The most modern defence weapons have wide areas of effect (up to 100 metres in diameter) and work by firing munitions into the air that then fall on to the relatively softer armour found on the top of tanks or armoured fighting vehicles. This makes them more economical when it comes to covering larger areas as less are required in comparison to the vast pattern minefields we were routinely laying during the Cold War. Modern systems also have an off-on-off mechanism and can be controlled remotely, so they can be used again and again as the battle ebbs and flows and will not inhibit our own manoeuvre.

SIMPLICITY

Lethal barriers remain simple to use and emplace, whether mechanically laid at scale in armoured warfare or hand-laid by light forces. Take, for example, the Finnish Army, all recruits (even conscripts) are trained in the employment of anti-tank systems during basic training. Finland's terrain (highly forested with very few mobility corridors) – very similar to the terrain in which the UK Enhanced Forward Presence in Estonia operates – is ideal for their use and highly mobile detachments with no more than a shovel for emplacement can consequently contribute to a combined arms plan.

UBIQUITY

Countering enemy mobility is not solely a facet of armoured warfare – it is a common feature across the mosaic of conflict. In Northern Ireland, Bosnia, Iraq and Afghanistan we found ourselves up against cunning adversaries who countered our own mobility to great effect, inhibiting our freedom to manoeuvre during stabilisation and counter-insurgency operations. Lighter forces perhaps require this capability more so, with their reduced levels of protection and firepower making the prevention of enemy mobility of paramount importance. You can fit two modern anti-tank systems in an average daysack and up to six in a door bundle – enough for a section to close a road in close terrain.

Counter mobility is also not the preserve of positional warfare. As seen in Ukraine, manoeuvre warfare requires the ability to react rapidly to enemy counter-attacks

or envelopments to the rear or flanks of formations. This need is not new and was routinely demonstrated during the Second World War by mobile Soviet detachments while anticipating and inhibiting German counter-attacks. And while counter mobility may seem like a defensive capability, securing the flanks of attacking formations, consolidating newly-won gains, denying withdrawal routes and shaping the deep battlespace can be achieved using rocket and artillery fire or rapidly emplaced lethal barriers offensively. A sword and shield analogy is illustrative – whether in attack or defence, both means can be used in a complementary fashion and would be less effective without the other.

HOW AND WHY WE DIVESTED IN COUNTERING ENEMY MOBILITY

Regrettably this is an area in which the British Army, during decades of prioritising stabilisation operations, has disinvested – perhaps unconsciously, but certainly incrementally. One of the drivers to the decline has been the cost savings associated with cutting stockpiles of equipment that, until recently, seemed unlikely to be needed in Europe again. As Professor Matthias Strohn mentioned in the previous edition of *The British Army Review* “strategic outlooks, cherished wisdoms [and] national strategies” are being frantically revised. Those nations that kept a percentage of their Cold War stocks of lethal barriers (notably – and sensibly so – Finland, which has a 1,340km border with Russia) are merely updating inventories by adding modern fuses, for example, and replenishing numbers through existing contractual mechanisms. The UK is, however, now well positioned to take advantage of future opportunities and leverage those allies and partners who have chosen to develop these capabilities and, like us, are rediscovering their utility. Of critical importance to any improvements will be the ability to realistically train at scale, both in terms of employing lethal barriers and operating against them. A battlegroup, brigade or division executing combined arms manoeuvre without lethal barriers is one that is needlessly disadvantaged and easier to shape and defeat.

THE FUTURE

Common to all visions of the future – Mobilise, How We Fight 2026 and Wavell – is the ability to use terrain for our advantage and prevent an enemy from also doing so. The question being do we go ‘fast’ or ‘far’, or as the Assistant Chief of the General Staff stated in the last edition, do we need to do both?⁷ The latest Mobilise operational analysis⁸ looked at ‘commercial-off-the-shelf’ capabilities that, when added by 2024, could supplement the current ‘fight tonight’ Field



A member of a Ukrainian police explosives disposal team prepares to dislodge a Russian mine found in a field near the town of Gogolev on 13th May 2022. David Guttenfelder/CC BY 2.0

Army capabilities in the ‘defence’ scenario against a peer plus threat.⁹ Unsurprisingly, the research recommends that – in order to deter – the Mobilise force needs to be harder to defeat, to have forces pre-positioned to shape the ground and to be more lethal in order to change enemy calculus. It notes that understanding the ground and the employment of obstacles maintains the force’s ability to manoeuvre (by staying alive and supporting counter-attack opportunities) and that lethal barriers are a key capability for defence in depth and that Ottawa-compliant capabilities can be procured now and such opportunities need to be explored.

The Wavell vision to ‘blunt’ and ‘dislocate’ to prevent the enemy theory of victory by delaying or denying their political fait accompli by possession, adds further demand. The NATO New Force Model could grant us a geographic focus with which to conduct analysis and prepare capabilities tailored to the terrain (although arguably we already have that demand signal with the Enhanced Forward Presence battlegroups).

Where we seek to integrate, operate or converge across domains in the future may well be in denying urban terrain, or we may be asked to breach an anti-access/area denial system and hold it for a defined period of time, almost certainly through possession of a geographic area. The methods by which we will counter enemy mobility and deny

them access to advantageous terrain (or populations in certain terrain) will almost certainly change. Recognising that caltrops were succeeded by buried anti-tank systems when cavalry turned to armour, future battlefields may see the baton passed to self-deploying, uncrewed systems that can be controlled by satellite and turned on or off by UK or NATO headquarters staff.

WHAT IS NATO DOING?

In the immediate aftermath of Russia’s latest illegal invasion of Ukraine, NATO enacted all of its regional barrier plans¹⁰ across the entire eastern frontage of the Alliance. These are being controlled 24/7 – an old front-line is back, very much ‘live’, but now further east. This is in joint venture with a shift within NATO from defence by tripwire to defence by denial, requiring more forces to have more effects on more terrain under the New Force Model. The Alliance has commissioned an industry advisory group study on counter mobility and its defence planning process identified counter mobility as a key weakness, which is to be addressed by its Multinational Capability Cooperation Unit launching a high visibility project. On the 15th February, the UK Secretary of Defence signed a letter of intent to participate in the project, which has the lure of NATO funding and offers the potential to use the NATO Support and Procurement Agency as a delivery agent, leading to economies of scale and inter-operability between allies. NATO recognises the need and is enabling member states to invest in counter-mobility capabilities – a fantastic opportunity that the UK is seeking to take advantage of.

To summarise, there are opportunities to make the British Army’s ability to conduct combined arms manoeuvre more effective, efficient and flexible – they also offer value for money. Lethal barriers will enable us to be more dangerous to the enemy, harder to beat and are applicable across mobilisation, modernisation and transformation.

⁷“The supposed dichotomy between mobilise and modernise is false: the British Army must do both, and simultaneously” BAR Spring 2023, P.8.

⁸DSTL Mobilise – Field Army Considerations - Study for Land Warfare Centre Field Army Operational Research Branch (FAORB)

⁹It noted that lethal barriers are causing an estimated 25% UKR KIAs – evidence indicates their value in defence/delay/deny scenarios.

¹⁰A National Barrier Plan with a NATO Barrier Plan creates a Regional Barrier Plan.



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THE BRITISH ARMY'S ROLE IN COMBATTING TRANSNATIONAL HEALTH CHALLENGES

AUTHOR

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DURING the Great Depression, one of the most severe crises of capitalism the world has known, the philosopher Gramsci wrote: “The old is dying and the new cannot be born; in this interregnum a great variety of morbid symptoms appear.”¹ The phrase ‘morbid symptoms’ has re-entered popular vernacular, now used by political commentators to label phenomena that mark the decay of the post-Cold War liberal democratic system. The scene of a fractured world order has been set, and the list of morbid symptoms is long; the Russian invasion of Ukraine; asylum seekers drowning in the English Channel; increased levels of homelessness and poverty; violent weather events caused by climate change; the spread of fundamentalism; the resurgence of ethno-nationalism and election victories for extreme populist leaders.²

The UK has recognised this shifting landscape in a number of key publications, for Defence the *Integrated Review* coins the phrase

‘systematic competition’, which manifests as “a growing contest over international rules and norms; the formation of competing geopolitical and economic blocs of influence and values that cut across our security, economy and the institutions that underpin our way of life”.³ The *Integrated Review* goes on to pledge to review and reform a cross government approach to health and to “build health resilience at home and at the international level, recognising the interconnected nature of our global health system”.⁴ Transnational health issues render

¹Antonio Gramsci, *Prison Notebooks* (New York: Columbia University Press, 2011), 275-6.

²Mary Kaldor, “Peacemaking In An Era Of New Wars - Think Peace: Essays For An Age Of Disorder”, *Carnegie Europe*, 2022, carnegieeurope.eu/2019/10/14/peacemaking-in-era-of-new-wars-pub-80033.

³HM Government, *Global Britain in a competitive age*, assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/975077 (accessed Feb 8, 2022), 24.

⁴*Ibid.*, 87.

state borders irrelevant and require state cooperation through the application of the theory of collective defence that sits at the heart of global governance organisations such as the United Nations.

There has long been a relationship between foreign and security policy and global public health, and the past 20 years have seen a notable increase in warnings of new communicable diseases alongside a gradual trend towards their securitisation. As per the logic of Copenhagen School, securitisation allows for any issue to be perceived as a threat to national security, where actors in positions of authority frame the issue as an existential threat, permitting exceptional measures to be employed which are outside of the normal political processes.⁵ The UN Security Council and the World Health Organization are the only two bodies that can legally securitise a disease.⁶ The volume of warnings emanating from these international institutions oscillates as each threat peaks and passes; HIV/AIDS, SARS, Ebola and Zika all preceded the Covid-19 pandemic. And although the UN Security Council has taken on increasing responsibility for health security, it does so hesitantly, and there is rarely consensus on what its role in global health governance should be. In his introduction to the paper *UNSC and Health Emergencies*, Ruston argues that although the organisation has the potential to gain global political attention, its contribution may “primarily be of symbolic value more than offering practical ways to effectively, accountably and comprehensively respond to health emergencies”.⁷ This lack of assuredness from international organisations has prompted seemingly pervasive criticism. The World Health Organization was described in 2014, during the initial stages of the Ebola crisis, as “too politicized, too bureaucratic... too slow to respond” by Cliff’s Chatham House

“The eventual successful containment of Ebola in Sierra Leone not only reinforced the strength of international collaboration through global governing bodies, but also put the UK at the centre of those efforts, providing support to those organisations that had been slow to the mark.”

report.⁸ The condemnation was remarkably similar in 2021 when the Independent Panel for Pandemic Preparedness and Response described the World Health Organization’s handling of the Covid-19 pandemic as “two worlds operating at very different speeds”. It contrasted the fast-paced information and data sharing potential of the age, with the slow and deliberate confidential verification stages undertaken by the World Health Organization.⁹ The erosion of trust in international organisations is not limited to the arena of health, and there is evidence to suggest that the corresponding political foundations have been consequently undermined. America’s dominant influence over international institutions has been challenged, and critics of the World Health Organization have argued that both the political influence of China in its initial slow response to the Covid-19 pandemic, and the evident inequality in the global response, show failings in the liberal international order.¹⁰ The latter argument is supported by McInnes, who argues that the increased global attention on disease as a security risk is imbalanced, and privileges those that “have the potential to move from the developing to the industrialised world”.¹¹

In his introduction to the collection of works

Covid-19 and World Order, Brands argues that the pandemic was so disruptive because it exploded in a world that was already increasingly disordered. He claims the now incontestable link between global public health and security is evidenced by “the way that epidemiological catastrophes can trigger economic and political ones”.¹² Brands’ position is supported by an open letter named *Defending Democracy*, signed in 2020 by more than 500 political and civil leaders and pro-democracy institutions. It claimed that authoritarian regimes, and even some democratically elected governments, were using the Covid-19 crisis to tighten their political grip and restrict human rights.¹³ For the past three years, the world has watched Hungary with increasing alarm. In March 2020 its parliament was side-lined with the introduction of government by decree, Prime Minister Viktor Orban leveraged the Covid-19 pandemic to allow himself extraordinary powers, with minimum judicial and parliamentary scrutiny. This established a precedent for further legislation for Orban, now newly re-elected following a much criticised 2022 campaign, to continue restricting state media, targeting academic freedoms and denying access to healthcare for minority groups.¹⁴

⁵Christopher Watterson and Adam Kamradt-Scott, “Fighting Flu”, *Armed Forces & Society* 42, no. 1 (2015): 145-168.

⁶S Burn, “Should Infectious Diseases Be Framed As Threats To International Security?” (*Defence Research Paper: JSCSC*, 2020), 14.

⁷Simon Rushton and Maïke Voss, “The United Nations Security Council And Health Emergencies: Introduction”, *Australian Journal Of International Affairs* 76, no. 1 (2022): 1-3.

⁸www.chathamhouse.org/sites/default/files/field/document/20140521WHOHealthGovernanceCliff.pdf

⁹Ellen Johnson Sirleaf and Helen Clark, “Report Of The Independent Panel For Pandemic Preparedness And Response: Making COVID-19 The Last Pandemic”, *The Lancet* 398, no. 10295 (2021): 26-27.

¹⁰www.brookings.edu/blog/order-from-chaos/2020/06/16/reopening-the-world-the-who-international-institutions-and-the-covid-19-response and www.internationalaffairs.org.au/australianoutlook/global-health-governance-health-security-vs-human-rights

¹¹Colin McInnes and Kelley Lee, “Health, Security And Foreign Policy”, *Review Of International Studies* 32, no. 1 (2006): 11.

¹²Hal Brands and Francis J Gavin, *COVID-19 And World Order* (Baltimore: Johns Hopkins University Press, 2020).

¹³www.ned.org/call-to-defend-democracy

¹⁴www.politico.eu/article/hungary-election-level-playing-field-fair-observer and Lydia Gall, “Ending Hungary’s State Of Emergency Won’t End Authoritarianism”, *Human Rights Watch*, 2022..



An Army corporal on Op Grirock puts on personal protective equipment at an Ebola treatment centre near Freetown in Sierra Leone.

Graham Harrison/© Crown copyright

The *Integrated Review* asserts that “liberal democracies must do more to prove the benefits of openness... this means tackling priority issues – health, security, economic well-being and the environment”.¹⁵ The effect of deepening mistrust in governance at the international level, layered with evidence of a breakdown of the world order that we champion, is such that the UK must use all of its levers of power to support the interests and values of British people. The British Army is one such lever at the government’s disposal, and one which has proven utility in responding to health threats that have been securitised, on an international scale. The UN Mission for Emergency Ebola Response was unique in that the Security Council established a variant of a peacekeeping force to deploy to the affected countries. For the UK, this saw more than 900 personnel deploy to Sierra Leone under Operation Gritrock in September 2014. One of the most significant contributions to the overall response is cited by academic Kamradt-Scott as the successful civil-military cooperation achieved during the deployment, including the adoption of more structured command and control arrangements, and the integration of liaison staff with host-nation security forces and a wide array of civilian organisations.¹⁶ The eventual successful containment of Ebola in Sierra Leone not only reinforced the strength of international collaboration through global governing bodies, but also put the UK at the centre of those efforts, providing support to those organisations that had been slow to the mark.

In 2006, McInnes argued that the global public health agenda should be broadened to include, amongst other things, the relationship between health and internal security.¹⁷ However, his arguments are centred on risks

“Most arguments against military involvement in health crises involve some element of concern over civil-military relationships... These concerns do not appear to have materialised during the Covid 19 pandemic, indeed 8 Engineer Brigade were awarded the Freedom of Liverpool.”

relating to poor public health in a very broad sense (such as those from non-communicable diseases) and the corresponding undermining of economic and social structures of the state. Thornton, in an article for *Defence in Depth*, takes this case further, linking the consequences of failing to enable successful public health provision with conditions that allow for the undermining of state security by external actors. His bid for a focus inwards on potential threats is centred on the premise that the future character of conflict is such that states will be defeated because they are made to collapse from within, as a result of stress on critical national infrastructure and societal cohesion.¹⁸ The inability of a state to support services is one of the ways this stress can manifest, a potential critical failure when viewed through the Westphalian lens. In his paper on the impact of communicable diseases on international security, Everest asserts that the initial scientific view on health issues implies medical solutions, however it is the underlying condition of the state that actually determines the impact, and therefore “holistic support for the state is required for recovery and building state resilience”.¹⁹ The British Army has been used on a number

of occasions to support the provision of national services, it is an organisation that is established, trained and scaled to deal with crises, at pace. The outbreak of foot and mouth disease in 2001, although transmissible to humans, was never considered a public health risk. However, the epidemic nature of the transmission amongst livestock meant it was considered a significant enough threat to UK resilience that the Ministry for Agriculture required military support. More than 150 Army personnel deployed in a number of roles; to provide command and control, to coordinate with farmers and to dig mass animal graves.²⁰ The Army response to foot and mouth disease demonstrates that the use of the Armed Forces for domestic crisis management within the health arena is not unique, but the sheer scale of the Covid 19 response under Operation Rescript in 2020 was unprecedented. Approximately 20,000 troops were put at readiness to deploy in a variety of roles in support of the National Health Service. One of the more niche examples was the military engineer construction force which, alongside NHS personnel and civilian contractors, established 4,000 hospital beds in 72 hours, and delivered the London Nightingale Hospital in its entirety in just 10 days. The impact of a pandemic of such scale as Covid 19 will inevitably have the health sector at its epicentre. But the shockwaves will radiate out to effect broader services, some with a more direct link to security, such as those which support UK counter-terrorism operations. For example, the impact of lockdowns in 2020 has been linked to not only increased isolation of those considered vulnerable to recruitment from terrorist groups, but was compounded by the lack of referrals to anti-radicalisation services normally made by social workers and education providers.²¹ Furthermore, in 2020



The Army played a key role in the rapid construction of the 4,000-bed London Nightingale Hospital.

Andrew Parsons/No 10 Downing Street

¹⁵HM Government. *Global Britain in a competitive age*, 12

¹⁶Adam Kamradt-Scott, “Saving Lives” (repr., Sydney: University of Sydney, 2015).

¹⁷McInnes et al, “Health, Security And Foreign Policy”, 5.

¹⁸defenceindepth.co/2020/04/08/covid-19-and-why-state-resilience-in-the-united-kingdom-needs-to-be-strengthened-the-link-to-the-changing-character-of-war-and-lessons-from-russia

¹⁹A Everest, “The Hidden Enemy” (Defence Research Paper: JSCSC, 2015).

²⁰www.theguardian.com/uk/2001/mar/30/footandmouth.angeliquechrisafis

²¹www.theguardian.com/uk-news/2020/apr/22/fears-of-rise-in-uk-terrorism-recruits-after-anti-radicalisation-referrals-collapse-coronavirus

²²Commission for Countering Extremism, “Covid 19: How Hateful Extremists Are Exploiting The Pandemic” (repr., London: HM Government, 2020).



the Commission for Countering Extremism published findings of a notable increase in conspiracy theories and disinformation campaigns across a broad range of extremist ideologies.²² Therefore, failures of national services can have not only immediate effects on state resilience and stability, but also tangible second and third order effects specifically within the security sector.

Most arguments against military involvement in health crises involve some element of concern over civil-military relationships, Kalkman raises that militaries have “in the past displayed a tendency to introduce command and control principles at the cost of coordination and collaboration with crisis partners”.²³ He points towards the HIV/AIDS pandemic whereby securitisation and portraying the illness as an overwhelming threat, undermined efforts to normalise social perceptions. These concerns do not appear to have materialised during the Covid 19 pandemic, indeed 8 Engineer Brigade were awarded the Freedom of Liverpool, the highest civic honour the city could bestow. Following their roll-out of the whole town testing pilot, they received praise from the city’s mayor for the huge contribution made to communities and outstanding leadership.²⁴ A more persuasive contrary narrative as to the value of the Army’s involvement in health

issues at the national level is the precedent it sets for other governmental departments. In the enquiry in to its contribution to the Covid 19 response, the Defence Committee found that whilst Defence can provide “a mass of trained and disciplined manpower which can be deployed to meet an emergency at short notice... it should not be used as a means of backfilling for inadequate preparation and resourcing by the civilian bodies which have a statutory responsibility to meet crises”.²⁵ Whilst the use of military capabilities can empower our government’s crisis response efforts, there is real risk of undermining weakened civilian control by creating an over reliance on military intervention. In order to improve resilience and our pandemic preparedness, interventionist

²³Jori Pascal Kalkman, “Military Crisis Responses To COVID-19”, *Journal Of Contingencies And Crisis Management* 29, no. 1 (2020): 101.

²⁴liverpoolexpress.co.uk/covid-test-centre-troops-set-to-receive-freedom-of-liverpool

²⁵*Defence Contribution To The UK’S Pandemic Response (London: UK House of Commons, 2022).*

²⁶Segun Oshewolo and Agaptus Nivozor, “COVID-19: Projecting The National Security Dimensions Of Pandemics”, *Strategic Analysis* 44, no. 3 (2020): 271.

²⁷Watterson et al, “Fighting Flu”, 149.

²⁸Oshewolo et al, “COVID-19: Projecting The National Security Dimensions Of Pandemics”, 272.

measures must not be purely reactionary, but must be woven in to the fabric of our pre-planned national responses.

In his *Strategic Analysis* paper, Oshewolo argues that perhaps the most dangerous security dimension of a health pandemic is the direct impact of the proliferation of the illness within the armed services themselves.²⁶ Pandemic influenza between 1500 and 1900 disproportionately affected the military population, often cited as a result of “overcrowding, poor hygiene, inadequate clothing, exposure to cold, and poorly ventilated accommodation”.²⁷ Whilst the Army has learnt many lessons surrounding force health protection since that period, and its demographic is comparatively healthy, it is by no means immune to the effects of communicable diseases.²⁸ Indeed, there are some amongst those British Army personnel deployed in direct support of Operation Rescript who would have been at increased risk from Covid 19, as a result of frequent and direct interaction with the civil population in either testing or vaccination centres. For Operation Rescript and those deployments not cancelled in 2020, there were significant mitigations applied to reduce ‘risk to force’ that had consequent order effects, such as the implementation of pre- and post-deployment quarantine periods and reduction in mid-tour rest-and-recuperation

leave, which in turn, elongated deployment rotations. All of this evidence points towards the Army, from an internal perspective, having significant vested interest in combatting transnational health issues. Kalkman's position differs to Oshewolo's, he contends that the impact on overarching operational readiness presents the more significant risk to the British Army.²⁹ The *Integrated Review* requires Defence to promote the British interests of sovereignty, security and prosperity, in priority order, and declares we will have an Armed Forces that are "prepared for warfighting", a concept that has been brought in to sharp relief following the Russian invasion of Ukraine in February 2022.³⁰ Wilen's paper for the Peace Research Institute Oslo supports Kalkman's view, she states "there is an opportunity cost in terms of military readiness and maintaining skills for warfighting when armed forces are tasked as an auxiliary domestic emergency service".³¹ In 2020, a series of significant multinational exercises were cancelled or significantly scaled-back, including US-led European warfighting exercises such as Exercise Cold Response and Exercise Defender.³²

There is, of course, a counter-argument that balances risk taken against training for warfighting scenarios, with the huge opportunities presented by deploying in a real-world context for more niche and specialist capabilities, such as medics or engineers. Care must be taken, however, to guard against the detrimental effects of a broader 'identity crisis', misappropriation of skilled infantry soldiers, for example, could result in a detrimental impact on retention.³³ Levels of risk tolerance have as much to do with reducing 'risk to force' as they have to do with the potential reputational damage of the British Army being seen as mass contaminators whilst deployed overseas. It is difficult therefore to assess to what degree the cancellation of military commitments in 2020 was owing to; a desire to deliberately suppress activity, in order to protect the force; how much was driven by the choice to cross-deck capability to support the national response; and how much was driven by factor's outside the Army's control, such as the closure of international borders and national lockdown restrictions? However, the outcome of these cancellations presents the same risks to operational effectiveness, without training opportunity for its core purpose the operational capacity of the British Army is detrimentally affected, and as such it is within its own interests to support the response, combatting the impact of transnational health threats.

One of the largest opportunities presented to the British Army by transnational health challenges is the chance to represent itself as



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"The Army being able to demonstrate broad utility as a government asset presents it as excellent value for money, in a time of ever-increasing fiscal restrictions, enabling a powerful justification for Defence spending."

a force for good, demonstrating to society the positive utility and effectiveness of the Service. This is as much true in the international arena, as the national one. Internationally, the deployment of British Army personnel in support of the Ebola crisis enabled the British Government to lead the global response, where it actively petitioned the international community, through the UN, to support Sierra Leone.³⁴ Commitments of this nature allow us to dynamically "reform the global health system, strengthening the coherence across the international architecture" as ambitioned in the *Integrated Review*.³⁵ At the national level, the Army's engagement within local communities in turn leads to secondary benefits, such as increased exposure to a broader recruiting pool, and increased visibility amongst voters.³⁶ The Army being able to demonstrate broad utility as a government asset presents

²⁹Kalkman, "Military Crisis Responses To COVID-19".

³⁰*Global Britain in a competitive age*, 22.

³¹www.prio.org/publications/12692

³²www.economist.com/international/2020/03/23/armies-are-mobilising-against-the-coronavirus.

³³Wilen, "The Military in the time of Covid 19", 28.

³⁴www.gov.uk/government/news/the-uk-is-leading-the-international-drive-against-ebola-in-sierra-leon

³⁵*Global Britain in a competitive age*, 94.

³⁶www.forces.net/news/covid-how-has-coronavirus-affected-army-recruitment

³⁷Wilen, "The Military in the time of Covid 19", 27.

it as excellent value for money, in a time of ever-increasing fiscal restrictions, enabling a powerful justification for Defence spending. This is particularly pertinent, as Wilen argues "the economic impact resulting from the pandemic is more likely to result in long-term setbacks to Defence budgets".³⁷

This article demonstrates the very real threat of transnational health issues, their manifestation as multidimensional emergencies pervading multiple sectors and disciplines; public health, economics, politics and defence. Transnational health issues can expose failures in governance at the international level that are then further compounded by failures in governance at the national level, threatening the very fabric of the world order that we champion. In accepting these threats as security risks, it is essential for us to understand the opportunity cost of committing the British Army to reinforcing our international response, and national resilience. The ambition of the *Integrated Review* is vast, even when just considering the elements relating to health, and the British Army will only have a small contributing effect to those efforts. The continued salience of wider socio-political roles for the British Army, rather than explicit functional ones, has implications for broader civil-military relationships. The balance of evidence suggests there are strong arguments for utilising British Army resources in combatting transnational health issues, but it must be done carefully, so as not to undermine civilian institutions and not at the expense of achieving our broader strategic goals.



A POOR MASTER: SELECTION AND MAINTENANCE OF THE AIM IS NOT A PRINCIPLE OF WAR

AUTHOR

Major Giles Moon (Royal Lancers) is currently serving as a squadron commander. He recently completed an in-service master's degree at King's College London.



TEN principles of war sit at the foundations of British doctrine. They're set out in Defence's capstone strategic doctrine publication¹ as one of the three strands within the conceptual component of fighting power; they're found in the Army's key operational doctrine, *Army Doctrine Publication Land Operations*² (having been moved to a more prominent position in the latest edition³) and they're taught by rote to new officers at the very beginning of their Sandhurst careers. Yet the key principle, the one referred to as 'the master principle', is wrong.

The issue lies not with the selection of an aim but in the instruction to maintain it. The work of several prominent theorists, including Colin Gray, Von Moltke, and a certain dead Prussian, make it clear that selecting an aim at the outset of war is a critical part of forming a strategy, but that the aim and strategy are subordinate to policy. Where the policy changes, so must the aim. The evidence supports the theory; there are many examples of wars where the ability to flex the aim has proven important for success. Selection and maintenance of the aim should therefore be revised as a principle.

Before we can analyse selection and maintenance of the aim (hereafter sometimes simply 'the master principle') as a principle, we should be clear on what principles of war are and what they're for. Unfortunately, formal British military publications, including JFC Fuller's *Foundations of the Science of War*⁴, the origin of principles in British military thought, seem to assume that the purpose of principles is self-evident given that they provide no definition. The latest version of *Joint Doctrine Publication 0-01* lists the principles as "considerations for planning"⁵, which is an underwhelming definition considering their centrality in British doctrine. While principles are certainly not hard rules, they're more than mere advice or considerations. In an informal publication, the Army identifies

¹UK Ministry of Defence, *Joint Doctrine Publication 0-01 UK Defence Doctrine*, 6th ed, 2022.

²British Army, *Army Doctrine Publication: Land Operations*, 2nd ed, 2022.

³British Army, "Doctrine Brief: Principles of War" Army Knowledge Exchange, 20 April 2022, Video.

⁴J.F.C Fuller, *Foundations of the Science of War* (London: Hutchinson & Co, 1926), 13

⁵Ministry of Defence, *JDP 0-01*, 19

the principles as “a number of observed factors gleaned from military history and contemporary operations, adherence to which can bring success in war” and further notes that “failure to consider the principles when planning and conducting operations will, in all likelihood, lead to military failure”.⁶ This provides a good enough working definition, aside from the use of the word ‘can’ – many things, and in the right circumstances almost anything, can bring success in war; principles must be much stronger than this. Replacing ‘can’ with ‘usually’ gives a more satisfactory definition. We thus have a standard by which we may judge any given principle. It must be usually associated with success in war and disregarding it will likely lead to military failure. Against this measure, selection and maintenance of the aim falls short.

WHAT’S WRONG WITH IT?

Selecting an aim before committing military force is vital. This is axiomatic, and there is no serious opposition to this idea either within professional armies or academia. Without an established aim, the employment of armed forces becomes nothing more than the random use of violence in the hope of positive consequences. As for whence this aim should come, in modern warfare the answer is simple: from national policy. CS Gray offers the neatest formulation, stating that “military strategy is the direction and use made of force... for the purposes of policy as decided by politics”.⁷ Those of a more traditional bent can revert to Clausewitz. His dictum about war as a continuation of policy is perhaps the single most quoted line in the entire military canon so I will save the readers from another repetition. More specific to this article is his insistence that “policy... is wholly and exclusively entitled to decide which events... are best for the objectives of the war”.⁸ The

⁶British Army, “Doctrine Brief: Principles of War”.

⁷Colin S. Gray, *The Strategy Bridge: Theory for Practice*, (Oxford: Oxford University Press, 2010), 29.

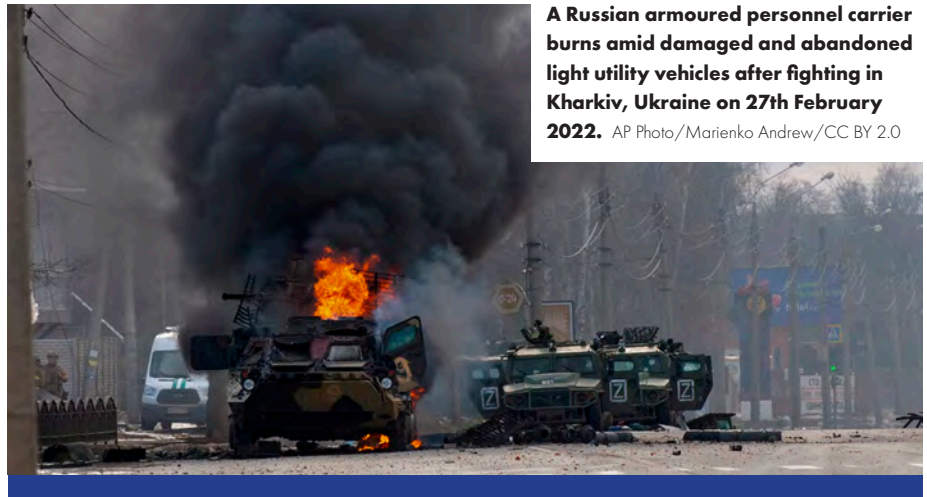
⁸Carl Von Clausewitz, *On War*, (London: Everyman’s Library, 1993), 734.

⁹Ministry of Defence, *JDP 0-01, 11*; Joint Chiefs of Staff, *Joint Publication 1 Doctrine for the Armed Forces of the United States, 2017, 1-3*; and NATO, *Allied Joint Publication 0-01 Allied Joint Doctrine, E ed, ver 1, 2017, 3-1*.

¹⁰Williamson Murray and Mark Grimsley “Introduction: On Strategy”, in *The Making of Strategy: Rulers, States and War*, eds. Williamson Murray, Magregor Knox, and Alvin Bernstein (Cambridge: Cambridge University Press, 1994), 22.

¹¹Robert Johnson, “Dysfunctional Warfare: The Russian Invasion of Ukraine”, *Parameters* 52, no. 2 (2022).

¹²Stanley Karnov, *Vietnam: A History* (London: Pimlico, 1994), 638.



A Russian armoured personnel carrier burns amid damaged and abandoned light utility vehicles after fighting in Kharkiv, Ukraine on 27th February 2022. AP Photo/Marienko Andrew/CC BY 2.0

“Once hostilities commenced and Ukraine proved hardy enough to survive the initial Russian onslaught, the West’s political position shifted to full-throated condemnation of Russia, the imposition of unprecedented economic sanctions, and tens of billions of dollars of materiel support to Ukraine. An apparently inviting target quickly became something much tougher, and the initial Russian invasion aim is now almost certainly unachievable. It would be foolish for Putin not to adjust his war aims.”

importance of policy in governing the use of force is uncontroversial and is both widely accepted in western military thought and enshrined in western doctrine.⁹

Identifying and selecting a policy goal is one thing; maintaining it quite another. It is implicit in Gray’s and Clausewitz’s understandings of the relationship between policy and the use of force that a given strategy remains valid only for as long as it serves a given policy. What, then, if the policy changes? Should that happen, maintaining the original military aim would be folly because that would mean force being used for its own ends, or no end at all, rather than to serve policy goals. While it’s true that the continued use of violence in support of a now-defunct aim might fortuitously deliver a positive result, misdirected force is unlikely to achieve the desired political ends. If the policy changes, the aim must change. This much is, I think, intuitive.

It could be argued that a change in policy reflects either poor decision making or fickleness on behalf of politicians but this is false; policies must change as the situation changes and this flexibility of policy should be expected, perhaps even welcomed, for several reasons. First, and simplest, is that outcomes that seemed achievable at the start of a war may prove not to be, whether through miscalculation of what was ever achievable or through the unexpected involvement of other parties in the war. As Murray and Grimsley note: “Strategy is the art of the possible, but few can discern what is possible.”¹⁰ The

Russian invasion of Ukraine provides us with a pertinent example. In February 2022, Russia attacked a country that seemed weak and enjoyed only lukewarm political support from America and Europe without significant provision of materiel, and thus seemed an inviting target that could be easily defeated within days.¹¹ Once hostilities commenced and Ukraine proved hardy enough to survive the initial Russian onslaught, the West’s political position shifted to full-throated condemnation of Russia, the imposition of unprecedented economic sanctions, and tens of billions of dollars of materiel support to Ukraine. An apparently inviting target quickly became something much tougher, and the initial Russian invasion aim is now almost certainly unachievable. It would be foolish for Putin not to adjust his war aims in light of this (although it remains to be seen whether he has).

The US experience in Vietnam (echoed, perhaps, in Afghanistan) is another such example. After several years of escalating the war, increasing troop numbers to half a million, and conducting an extensive bombing campaign, the US government eventually came to realise that the war was unwinnable. They stopped throwing good money after bad and shifted their aim to leaving well and sued for peace at the Paris talks.¹² UN forces in the Korean War changed their aim even more times. A campaign to defend south of the 38th parallel morphed into an invasion of North Korea in late 1960, only for UN forces to fall back and refocus their efforts on holding the 38th parallel once China intervened in the

war.¹³ It is therefore perhaps the norm rather than the exception for war aims to shift after the onset of war, as only then does it become clear whether those aims are achievable. Shifting aims aren't always a result of initial miscalculation or the involvement of additional parties. Success and failure on the battlefield, whether due to competence or the play of chance, may also affect the viability of initial policy aims. Forces can be degraded to the point that they can no longer complete desired operations, or critical parts of a wider plan (like a lightning thrust to seize Kyiv) can fail. Pressing on with the original aim in these circumstances is usually unwise. This cuts both ways – unexpected tactical success may open up possibilities never considered at the outset of the war. Helmuth Von Moltke stated: “Strategy appropriates the success of every engagement and builds upon it. The demands of strategy grow silent in the face of a tactical victory and adapt themselves to the newly created situation.”¹⁴ And he identified strategy as “the continued development of the original leading thought in accordance with the constantly changing circumstances.”¹⁵ Although Von Moltke was talking narrowly of military strategy at a level that we might now consider ‘operational’, the need to remain flexible in the face of a changing tactical reality applies as much to the overarching policy aim as to the military strategy in pursuit of that aim. The Six-Day War gives an excellent example of this phenomenon; Israel initially planned only to seize the Sinai Peninsula and to defend on other fronts, but the partial collapse of the Syrian army when it attempted to attack Israel from the north opened an opportunity for the Israel Defense Forces to take the Golan heights, which they seized upon despite it being well outside their original war aims.¹⁶

Even when initial aims remain viable, they may be rendered undesirable by changed political circumstances that arise during, or even because of, the war. This should not come as a surprise; we are engaged, after all, in “political intercourse with the addition of other means”.¹⁷ War can significantly upset the political equilibrium and in doing so

create unpredictable secondary effects which may, in turn, affect the attractiveness of the initial war aims. While the possible changes in circumstance are limitless, the most obvious example is for countries not involved in the war to threaten belligerents with the imposition of economic sanctions or other non-military consequences. The Suez Crisis of 1956 is perhaps the starkest instance from a British perspective. The British objectives were likely achievable in a purely military sense, but an American threat to sell-off sterling bonds meant that pursuing them risked economic collapse of the UK.¹⁸ The changed political situation made the still-achievable military aims undesirable. The British (and French) armed forces rightly adjusted their aims based on policy decisions as decided by politics, and thus withdrew entirely from a winnable fight.¹⁹

A comprehensive analysis of all wars to establish whether an aim has successfully been selected and maintained sits far beyond the scope of this brief article. There are, of course, several examples of where military success has resulted from the maintenance of an aim, often in wars of short duration such as Gulf War 1 [pictured below] or ‘total’ wars of national survival such as World War II. Nevertheless, we have seen above that flexibility of aim is often desirable or even essential, with several outline historical examples supporting the theoretical discussion. Returning to the definition of principles set out in the opening section, it’s therefore clear that flexibility of aim doesn’t “in all likelihood, lead to military failure” and following the master principle’s exhortation to maintain the aim doesn’t “usually bring success in war”. It is hard to see how selection and maintenance of the aim fits the criteria to stay as a principle of war, much less as the so-called master principle. A revision is needed.

REMASTERED

How should we rephrase the principle? It is doubtless true that an aim needs to be selected before we apply military force; various lists of principles of war drawn from historic or international sources reflect this. For example, JFC Fuller offered ‘direction’ when he set out the original principles.²⁰ Similarly,

American and Allied NATO doctrine both choose ‘objective’. This is explained as the need to ‘direct every military operation toward a clearly defined, decisive, and attainable goal.’²¹ Although neither of these sources singles out one principle as the master, instead treating all principles as equal, the essential requirement to direct all military activity towards an aim means that there is value in the British idea of a master principle enshrining the need for an objective. The issue with the current master principle is in the need to ‘maintain the aim’, not the initial selection of one. ‘Selection of the aim’ could therefore function as a potential master principle, but this feels incomplete; the discussion above demonstrates that review and revision of a previously chosen aim is almost as important as its initial identification. With this in mind, ‘selection and review of the aim’ would serve as a better alternative to the current master principle. When this needs an accompanying explanation, as in allied doctrine, it could read: ‘All military activity should be directed towards a clear policy aim. This aim should be continually reviewed and, if necessary, revised according to changing circumstances.’ This would set commanders on the right path when seeking to apply military force in the pursuit of national policy goals. No military plan should survive contact with a change in policy.

¹³Max Hastings, *The Korean War* (New York: Simon and Schuster, 1987).

¹⁴Originally from *Militarische Werke*, vol. 2, part 2, 33-40. Available translated in *Moltke on the Art of War: Selected Writings* ed. Daniel J Hughes, (New York: Presidio Press, 1993), 46.

¹⁵*Ibid.*

¹⁶Michael Oren, *Six Days of War: June 1967 and the Making of the Modern Middle East* (Oxford: Oxford University Press, 2002), 278 onwards.

¹⁷Von Clausewitz, *On War*, 731.

¹⁸William Roger Lewis and Roger Owen, *Suez 1956: The Crisis and its Consequences* (London: Clarendon, 1989)

¹⁹*Ibid.*

²⁰Fuller, *Foundations of the Science of War*.

²¹US Army, *Field Manual 3-0 Operations*, 2022, 1-8; and NATO, *AJP-01*, 1-14.





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TITLE

Russia's War

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AN UNPICKING OF THE 'MOTHERLAND' MINDSET

Popular views on the Russian war in Ukraine often present the conflict as being the work of Putin and his cronies in government, while ordinary Russians are portrayed as being largely unaware of its true nature. This understandable, if naive, misconception is picked apart in this fascinating deep dive into the psyche of not just Russia's leaders, but its everyday people.

Jade McGlynn, a Research Fellow at King's College London and self-proclaimed Russianist, has focused on both Ukraine since 2014, and wider Russian topics including state-society relations, during more than a decade of study into the politics of the Russian Federation. This particular work brings together a range of her previous analysis – from propaganda to memory politics – and considers its relevance to the 2022 invasion.

A diverse mix of source material, which includes Russian television viewing figures, official statements, nearly 60 interviews and the author's own experience of life in the country, is set out to reveal "the powerful forces shaping [those] perceptions" in Russia. Presented within a body of literature that often focuses on Putin's inner circle and the possible benefits of their potential downfall, McGlynn is refreshingly blunt in places, refuting the mainstream standpoint because it "has the disadvantage of being untrue".

While some of the case studies featured will be unknown to those who have not studied Russia in depth, they are explained in a straightforward manner and link in a meaningful fashion to one of McGlynn's overarching points about the Russian mindset. Covering state policies of selective amnesia and risk-reward considerations for potential protesters to a belief that Nazis are terrorising their neighbours, the opening chapters explore the principal Russian narratives about Ukraine. Perhaps the most interesting takeaway is how the Kremlin is not interested in active support, but passive acquiescence, making the task of manipulating Russians to where they are wanted in the 'spectrum of allies model' far easier. This is not

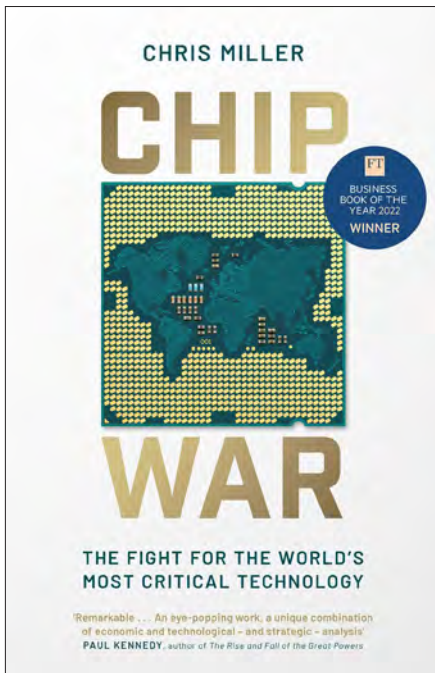
to say that ordinary Russians do not understand the situation; on the contrary, the author is clear on her view that silence is "not a neutral act, even if you wish it could be". Throughout, McGlynn weaves in real-world examples seamlessly and succeeds in her attempts to place the reader in the shoes of a Russian citizen. 'Do you support the special military operation, or would you like to go to prison for fifteen years?' – this might not be what a pollster asks, but it is what a Russian hears when questioned about their feelings over Ukraine.

The second half of the book is a little more abstract, investigating exactly why these narratives resonate with Russians. As with everything Russian, the war is entangled with identity and geopolitical security – which means the enemy must be the West. Yet this is not all; alongside the security discourse

are moralistic and historical issues. The West has corrupted Ukraine, and therefore Russia fights on behalf of Ukraine; but historically, Ukraine is Russia, at least in Russian eyes. This might seem contradictory, because it is. Indeed, McGlynn constantly reminds the reader that Russia is not monolithic, and within the approved content, there is a diverse range of chaotic and competing views. Either way, "constant framing of everyone else as a foe is useful in making sure Russians never focus on who the real enemy might be".

"Perhaps the most interesting takeaway is how the Kremlin is not interested in active support, but passive acquiescence."

Together, the latter sections answer McGlynn's major line of questioning – why is it Russians back the war? – in an engaging fashion. The war has been sold to Russians in a way that does not mirror reality, and they have bought it. McGlynn's final thoughts are somewhat bleak, but realistic nonetheless – it is not just Putin's war, but Russia's, and that means ending it is reliant not on one man but on the psyche of an entire nation. In McGlynn's own words, Putin is "the symptom not the cause". Perhaps there is some light at the end of the tunnel, but in the meantime the West must "stop pinning its hopes for change within Russia" on the naive belief that removing Putin removes the problem.



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TITLE

Chip War: The Fight for the World's most Critical Technology

AUTHOR

Chris Miller

REVIEWER

Lieutenant Colonel Fabrice Landragin, NATO SHAPE

TECHNOLOGICAL TREAT

This is a surprisingly interesting offering from Chris Miller who takes the reader on a journey through decades-long battles to control what perhaps not many of us appreciate as being the world's most critical resource of all time: microchip technology. To set the context, the author states that "last year the chip industry produced more transistors than the combined quantity of all goods produced by all other companies, in all other industries, in all human history..."

Whilst expressions such as "precise patterns of light onto photoresist-covered slabs of semiconductor material, mitochondria, DRAM, GPU and the like" suggest the subject matter may be too technical for most, the topic is brought to life by colourful anecdotes. Through tales from Silicon Valley, and the life-stories of visionaries such as Moore, Grove, Chang, Gates and Jobs – who created world-leading firms like Intel and Apple, Miller explains that microchip technology has had a complex and contested history, shaped not only by corporations and consumers but also by ambitious individuals, governments and imperatives of war and globalisation.

Miller revisits the all too familiar divergence of mass markets versus military contracts when it comes to technology. He explains how, in the 1970s, the entire world was connected to America's innovation infrastructure – Silicon Valley and its supporting fabrication labs – and how adversaries like the USSR spent their time copying US chips and chip-making tools to no avail. More importantly, the book also explains how the chip industry catalysed a new array of weapon systems that influenced how the US military fought in modern conflicts such as the Gulf War, and how the US – and its competitors and adversaries – are now fighting and will fight future wars.

Like all good histories, Miller's book allows us to examine patterns from the past as clues to the future. Looking back at the origins of the 'silicon age', Miller takes us on an historical journey through the decades of the 20th century. He notes the ascendance of some of the 'Asian Tigers', especially Japan, Taiwan

and South Korea who became indispensable for the creation of microchips, engendering rivalries across the Pacific and impacting foreign policies and national security – with America panicking over the idea of a 'Pax Japonica' and Japan weaponising its status as a world-leading semiconductor producer in the 1980s. In our time, Miller does not hesitate to portray that chip competition substantially means China's frontal assault on American and South Korean producers, with China working harder than ever to seize the commanding heights of chip production. Miller reveals that China, which spends more money importing chips than any other product, is pouring billions into a chip-building initiative to catch the US's lead: "Beijing wasn't looking

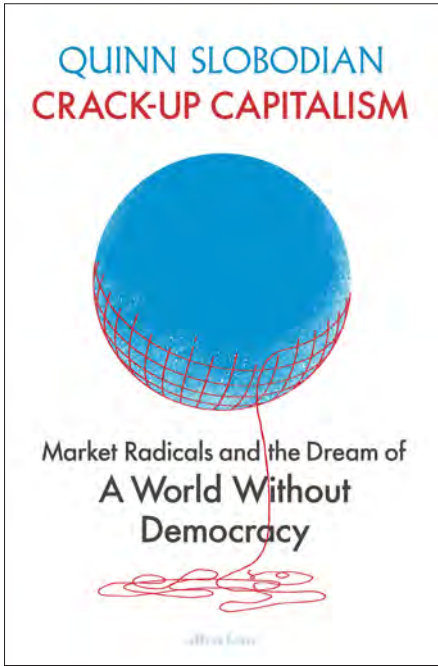
for a better position in a system dominated by America and its friends. It was about remaking the world's semiconductor industry, not integrating with it."

"The book explains how the chip industry catalysed a new array of weapon systems that influenced how the American military fought in modern conflicts and how the US – and its competitors and adversaries – are now fighting and will fight future wars."

He explains the development of the technology we now take for granted, from the first personal computer launched by IBM – which was characterised by its big box monitor and disk drives – and Intel's chips and Windows software to smartphones and the recent development and integration of artificial intelligence. He also stresses that today's military, economic and geopolitical power are built on a foundation of computer chips and that virtually everything, from guided missiles, car components and microwaves to smartphones and the stock market, runs on semiconductors.

Ultimately, *Chip Wars'* pages make a compelling case for Miller's thesis: "This book contends that semiconductors have defined the world we live in, determining the shape of international politics, the structure of the world economy, and the balance of military power."

For those seeking to better understand how economic, geopolitical and technological forces shaped this essential industry, this book is a good starting point. More importantly, perhaps, it sends a chilling warning that the West's economic prosperity and military superiority are at stake and that microchips are the new oil – the scarce resource on which the modern world depends.



Published by Allen Lane
Hardback,
£20

TITLE

Crack-up Capitalism: Market Radicals and the Dream of a World Without Democracy

AUTHOR

Quinn Slobodian

REVIEWER

Major Sam Eade,
SO2 Soldier Policy, Professional
Development, Army Headquarters

A SOUND INTELLECTUAL INVESTMENT

The libertarian economic experiment of 'Trussonomics' and the subsequent turmoil for the economy in 2022 makes this new book particularly topical for UK readers. For non-economists, the provision of an accessible translation of the academic debate provides meaningful insight into current policy, albeit through a radical 'anarcho-capitalist' lens. Most interesting is Quinn Slobodian's invitation to assess the impact of the evolution of these ideas into the present-day, noting the UK government's recent announcement for new free ports in Wales. Explained through a diverse series of case studies, from Hong Kong to London to the metaverse, libertarian tests and trials are explained and the impact on democracy and governance assessed.

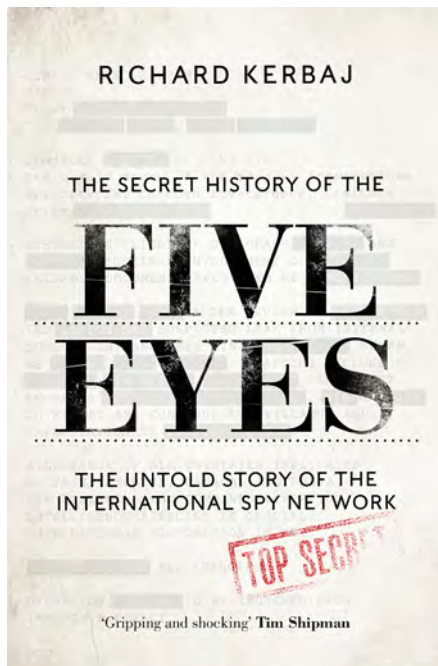
Is the Westphalian-state under threat? Can capitalism exist without democracy? Historian Slobodian hypothesises, yes. The evidence of this lies in the history of libertarian economic ideals and their present-day inheritors, so to understand the current state and future of globalisation, you need to 'follow the money'. The establishment of special economic zones create opportunity for exponential

economic returns through low regulation and cheap labour but is leading to sub-national geographies, which perforate and undermine the colour-coded blocks found on those global maps familiar to most. Coupled with gated communities and tax havens, the rich and powerful are able to absolve themselves of social responsibility. The impact on good governance and democratic principles is still being assessed and has implications for security and defence, as is briefly discussed by Slobodian as one of the key barriers to realising the full 'anarcho-capitalist' dream of structuring a nation as a business in its entirety.

An insightful read that tracks the development of ideas and the resulting experiments, there were plenty of moments of realisation of how these are meaningfully impacting on UK and global economic decision-making today. It is probably worth noting, that if you are a fan of Nobel-prize winning Milton Friedman, the Cato Institute or have cash stashed in the Cayman Islands, then you'll have plenty to disagree with about Slobodian's steadfast undertone that "if you're not angry about this, then you're not paying attention". Would definitely recommend.

"The establishment of special economic zones create opportunity for exponential economic returns through low regulation and cheap labour but is leading to sub-national geographies, which perforate and undermine the colour-coded blocks found on those global maps familiar to most."





Published by Cambridge University Press, Hardback, 557 pages, £25

TITLE

The Secret History of the Five Eyes: The Untold Story of the International Spy Network

AUTHOR

Richard Kerbaj

REVIEWER

Captain Ben Cutter is currently completing an external academic placement at Exeter University

DO NOT AVERT YOUR EYES

Given its central role in the international security environment since World War II, it is remarkable to think that the very existence of the Five Eyes – an intelligence alliance comprising Australia, Canada, New Zealand, the United Kingdom, and the United States – was only publicly acknowledged in 2010. Having previously operated behind a veil of secrecy, it is a partnership ripe for exploration and – in his debut book, *The Secret History of the Five Eyes: The Untold Story of the International Spy Network* – Richard Kerbaj duly obliges. Shining a spotlight on the largely unseen, the former *Sunday Times* security correspondent and BAFTA-winning documentary maker has produced a compelling and insightful history.

Drawing on extensive historical research and hundreds of interviews with former intelligence officers, diplomats, agency heads and world leaders, Kerbaj traces the rise of the Five Eyes from the code breakers of World War II, through its Cold War coming of age, the War on Terror and into today's era of great power competition. Throughout, he focuses on the interpersonal, operational relationships that have been at the heart of the alliance. In doing so, the author breaks down the partner nations' often-monolithic intelligence and security institutions into a collection of human stories that provide a highly accessible and relatable account of the Five Eyes. Although many readers will be familiar with the issues and events described by Kerbaj, their consideration within the context of the Five Eyes relationship provides a new and refreshing perspective.

Amongst the key features of Kerbaj's work is the enduring success and resiliency of the partnership. Despite being frequently characterised by mistrust, mistakes, and misjudgements, which are detailed at length, the alliance has not just endured but thrived. For Kerbaj, this durability has its roots in the interpersonal, operational level relationships that, more than any formal document, has

defined the Five Eyes throughout its existence. Building from a foundation of common values and interests, personal trust, a recognition of the value of burden sharing and mutual professional respect, these relationships have been key. They have carried the partnership through the crises of the Cambridge Five, the Suez Crisis, rendition facilitated 'enhanced interrogation', Edward Snowden's disclosures and Donald Trump's unfounded accusation of GCHQ intercepting his communications. They have also been the foundation from

which the Five Eyes partners have operated in the narrow space between the difficult and the impossible, to achieve things that its adversaries thought could not be done. From the cracking of the Enigma, through the disruption and exploitation of global Soviet espionage networks, to the systematic targeting of the senior leadership of the Islamic State and al-Qaeda, the Five Eyes has been a formidable intelligence and security partnership and its members have played a crucial role in nearly every international confrontation and crisis of the last 80 years.

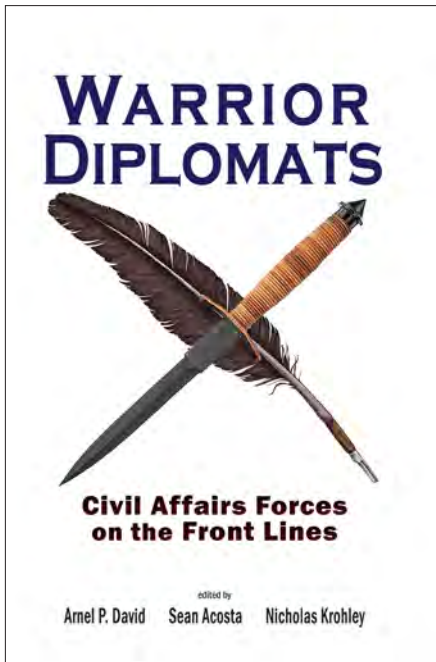
Critics will point to the many failures of the Five Eyes, most notably the intelligence failures that led to the Iraq War, the enduring moral stains of rendition and enhanced interrogation, and the ethical legitimacy of mass communications surveillance. Nonetheless, throughout *The Secret History of the Five Eyes*, Kerbaj emphasises not only the partners' record of success but also their capacity to reform themselves to restore the public accountability that is essential for maintaining their operational effectiveness and moral legitimacy. It is from this legacy, which has seen the partnership


play a pivotal role in the successive defeats of genocidal Nazism, Soviet totalitarianism, and extremist fundamentalism, that Kerbaj looks to a future where the alliance will remain vital in continuing to foresee and confront threats to international security and stability.

● *The Secret History of the Five Eyes* is due for release in paperback on 6th July (£12.95).



"From the cracking of the Enigma to the systematic targeting of the senior leadership of the Islamic State and al-Qaeda, the Five Eyes has been a formidable intelligence and security partnership and its members have played a crucial role in nearly every international confrontation and crisis of the last 80 years."



 Published by Cambria Press,
Paperback, 294 pages,
ISBN 9781621966746

TITLE

Warrior Diplomats: Civil Affairs Forces on the Front Lines

EDITORS

Arnel P. David, Sean Acosta and Nicholas Krohley

REVIEWER

Captain Rob Weale, RGR

WHY THE ARMY MUST REMAIN 'CIVIL'

Warrior Diplomats is a response to Western failure in the counter-insurgency conflicts of the past two decades, and a warning to policymakers at a time when the attentions of the US military and its allies are moving to large-scale combat operations.

As a post-graduate student of international development, I was delighted to read in the introduction to this collection of essays, edited by three former US Army civil affairs officers, that they shared my belief that part of this focus on high-intensity combat in military affairs is borne from a desire to engage with problems that we know we can solve, and an unwillingness to confront the failures of recent counter-insurgency campaigns. It observes that we have been here before; the US response to its failure in Vietnam was to return to its armoured warfare 'comfort zone', to fail to learn the lessons of their political naivety, and to consequently be intellectually under-prepared when they came to fight their next counter-insurgency operations, 30 years on, despite many of the senior commanders in the early days of Iraq and Afghanistan having fought in Vietnam.

The book seeks to diagnose and rectify the problems civil affairs operations faced during the Global War on Terror, as well as reasserting its value to all military operations. Perhaps the most pertinent chapter for British practitioners is the fifth, *Cancelling the Crosswalk* by Nicholas Krohley. In this article, Krohley breaks down the principal difficulty

faced by commanders when trying to convert analysis of the human terrain into effects, actions and tasks; that difficulty being the utter unsuitability of the ASCOPE [area, structures, capabilities, organisations, people and events]/PMESII [political, military, economic, social, information, infrastructure] 'crosswalk', a list-making device masquerading as a tool of analysis. Krohley suggests a vector-based approach – rather than trawling for masses of unusable data, analysis should be focused on enemy groups or specific societal phenomena. The rest of the book is equally filled with examples of how the multifaceted nature of civil affairs, and addressing the complex challenges of conflict zones, requires a broad and nuanced approach. Nothing in the book suggests there are simple solutions, but it rejects the fallacy that because counter-insurgency operations are difficult, that we should give up in our attempts.

Warrior Diplomats is both a practical guide to the theory and practice of integrating civil affairs into operations, and a reminder of the importance of this to all types of operations, including conventional combat. The book demonstrates that the UK must continue to invest in its small civil affairs capabilities, as our adversaries continue to compete in the entire spectrum of conflict, and British allies across the globe face their own domestic instabilities. As Trotsky, the master of civil-military fusion, would probably have said 'you may not be interested in insurgencies, but insurgencies are interested in you'.

A US Army reservist from the 432nd Civil Affairs Battalion plays with an Afghan child during a mission to a local village in Shinkai in 2011.



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PODCAST

Russian Roulette

REVIEWER

Captain Ben Cutter is currently completing an external academic placement at Exeter University

'STIMULATING': WELL WORTH A SPIN

Following a gap of more than a year, the Centre for Strategic and International Studies (CSIS)-produced *Russian Roulette* is back and has quickly re-established itself as one of the authoritative sources of critical thinking and analysis on Russia and wider Eurasia.

The podcast, which releases new episodes every other week, draws on an array of world-leading experts to discuss the politics, history and complex societal dynamics that define Russia and Eurasia. With topics ranging from the enduring legacy of empire in Eurasia to the current state of the Russian elite and Sino-Russian military co-operation, it brings listeners not only depth of expertise, but genuine breadth in the insights and analysis it offers. *Russian Roulette* also benefits significantly from the hosting of Max Bergman and Maria Snegovaya. Exhibiting a deft ability to effectively set the context, and to guide their guests through conversations that can require greater focus, clarification, or expansion, they

excel in facilitating, rather than dominating, the discussion. The result is an array of stimulating debates that, in episodes ranging in length from 30-90 minutes, leave listeners with an informed perspective on key issues.

Whether motivated by personal or professional interest, for those wishing to gain a greater understanding of Russian politics, history and society, and their enduring influence in Eurasia, *Russian Roulette* is an essential addition to the listening list. Furthermore, as one of many podcasts produced by CSIS, it provides an excellent gateway to an even broader set of discussions on the issues shaping the international security environment and contemporary strategic thinking.



BRINGING CLARITY TO THE COMPLEX

Excellent academic books come in many forms. Some advance new concepts and theories, some serve as a reference text by providing a comprehensive study of their subject, while others take complex, challenging ideas and distil them into a format accessible to anyone. *What is War For?* is an example of the latter. It is a superb introduction to the reasons behind contemporary war, covering significant ground in its 172 pages and written in language accessible to the lay reader (no mean feat in an academic field where even the most basic discussion is dominated by opaque terminology).

McDonald is at his best when exploring war as a legal phenomenon – unsurprisingly, as this is his intellectual home-turf. Here he consciously mimics Clausewitz, contrasting the neatness of war in (legal) theory with the rather messier reality of war in practice. He explores how contemporary warfare often subverts our legal frameworks and poses challenges to

the international institutions that seek to limit and control war. McDonald's final chapter looks at what these challenges mean for the prospects of bringing about peace in the future – he finds glimmers of light, but overall the outlook is bleak.

What is War For? is best seen as a *York Notes*-style primer on the complexities of modern war. It deserves to be a foundational text in the war studies departments at Sandhurst and King's College London, and

should be high up on the reading list for any student interested in the study of modern war.

More experienced readers should not be put off, however; McDonald's exceptional ability to translate complexity into concise, incisive prose helps bring clarity to the topic in a way that will interest even the most well-read.



Published by Bristol University Press, Paperback, 172 pages, £8.99, ISBN 978-1529228380

TITLE

What Is War For?

AUTHOR

Jack McDonald

REVIEWER

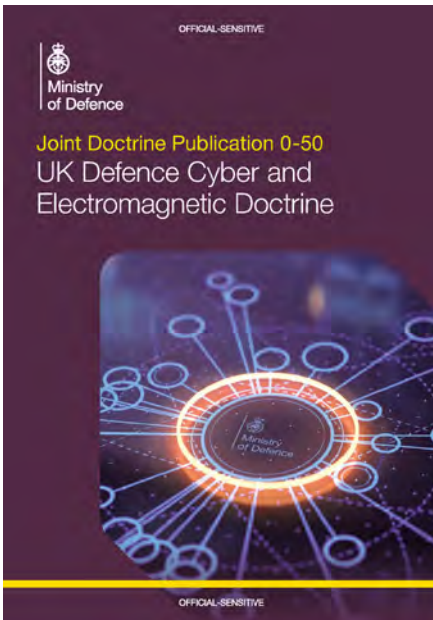
Major Giles Moon, Royal Lancers

“McDonald consciously mimics Clausewitz, contrasting the neatness of war in (legal) theory with the rather messier reality of war in practice.”

What is War For? provides an overview of how war manifests itself in the contemporary world, and how warfare has evolved in response to global developments in politics, technology, norms, and institutions. Author Jack McDonald shows how all play a part in determining the character of war and warfare in the 21st century using an expansive range of historical and contemporary examples to illustrate his points, from major international conflicts to civil wars. This is not an arcane academic text – it is firmly grounded in the real world.



The Development, Concepts and Doctrine Centre has published five new joint doctrine publications since January 2023, as well as reprinting Allied Joint Publication 01, *Allied Joint Doctrine* and Allied Joint Publication 3, *Allied Joint Doctrine Conduct of Operations*, both now with national elements. The doctrine publications are to guide military operations and inform professional military education as personnel progress through their career.



Joint Doctrine Publication 0-50, UK Defence Cyber and Electromagnetic Doctrine is the keystone cyber and electromagnetic domain publication. It is aligned with the National Cyber Strategy, the Defence Cyber Strategy and the UK Defence Electromagnetic Activities Strategy. This publication outlines Defence's cyber and electromagnetic capabilities that contribute to UK power, which in turn are part of the military instrument of national power that influences the behaviour of audiences and the course of events. JDP 0-50 provides a basis for understanding the utility of the cyber and electromagnetic domain, articulates key strengths and limitations, and illustrates the interdependency with the other operational domains.

UK Defence Cyber and Electromagnetic Doctrine is divided into four chapters:

1. An introduction to the cyber and electromagnetic environments and domain. Chapter 1 provides an overview of the cyber and electromagnetic environments and operational domain, together with the associated challenges and constraints;
2. The cyber and electromagnetic domain in context. Chapter 2 illustrates how the domain enables and integrates with the other operational domains. It also introduces the strategic policy framework and the law relevant to operating in this domain.
3. Cyber and electromagnetic operations. Chapter 3 provides an overview of the roles of cyber and electromagnetic power. It highlights which UK cyber and electromagnetic capabilities contribute to the various missions within the separate roles.
4. Employment of the cyber and electromagnetic domain. Chapter 4 considers the application of cyber and electromagnetic capabilities and explores both the national and Defence organisations with responsibilities relevant to the domain. Working with international partners is also introduced.

Allied Joint Publication 10 (A), Allied Joint Doctrine for Strategic Communications

is the keystone NATO doctrine for Strategic Command and all information and communication related activities. It introduces Strategic Command as the primary function for ensuring all NATO activities are conceived, planned and executed with a clear understanding of the critical importance of informing and influencing the perception, attitudes and behaviours of audiences to achieve objectives to attain the end state.

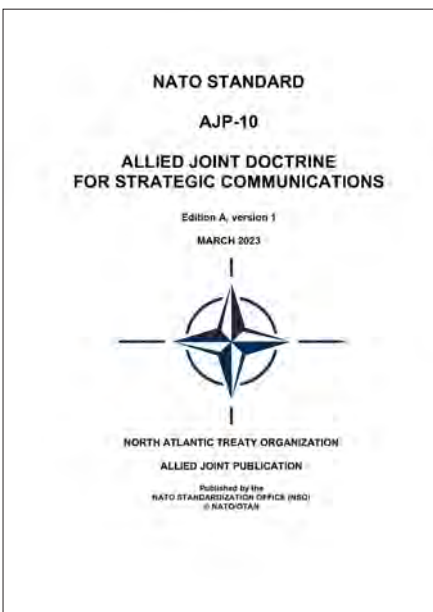
The publication provides guidance to NATO commanders and their staff at all levels of command. It enables the staff to contribute to the understanding and shaping of the information environment, in support of Alliance aims and objectives. It explains the principles of Strategic Command and how they can be integrated into planning, execution and assessment. It outlines the roles and responsibilities at all levels of command and details the relationship of military Strategic Command with the information staff function (for information operations) and the communication capabilities (for military public affairs and psychological operations).

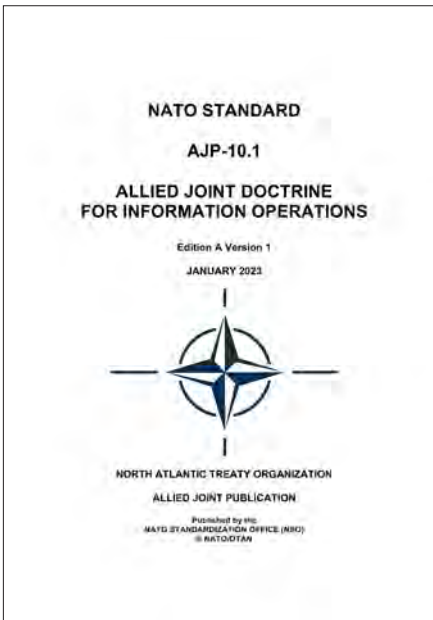
This publication will quickly be republished with UK national elements.

Allied Joint Doctrine 10.1 (A), Allied Joint Doctrine for Information Operations

explains how Information Operations staff ensure coordination and synchronisation of information activities. It focuses on the operational level to support commanders' objectives. Information Operations is applicable in peace, crisis and conflict throughout the continuum of competition. It provides a comprehensive understanding of the information environment and, for particular audiences, the ability to plan specific activities for cognitive effect.

The publication provides guidance to NATO commanders and their staffs to use Information Operations as the staff function for the horizontal integration of strategic communications





direction and guidance through planning and coordinating information activities throughout the full spectrum of activities and operations. It clarifies the role of Information Operations staff within the communication directorate, emphasising their responsibility for coherence and their key contribution to joint operations.

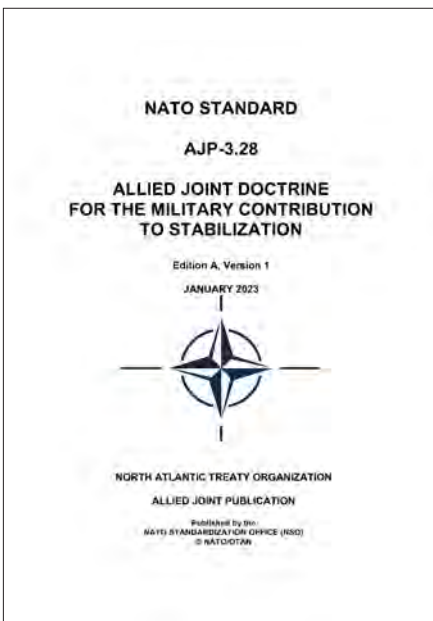
This publication supersedes AJP-3.10, *Information Operations*, which is no longer extant and will be republished with UK national elements later this year.

Allied Joint Doctrine 3.28 (A), Allied Joint Doctrine for the Military Contribution to Stabilization is the NATO doctrine for the planning, execution and assessment of military support to stabilisation in the context of Allied joint operations. It provides joint force commanders and staffs at the operational and higher tactical level with the principles and general guidance necessary to plan and conduct military support to stabilisation in Allied joint operations.

This publication supersedes AJP-3.4.5, *Allied Joint Doctrine for the Military Contribution to Stabilization and Reconstruction*, which is no longer extant and will be republished with UK national elements in due course.

Joint Doctrine Note 1/23, Intelligence, Surveillance and Reconnaissance captures concepts of current and future developments in Intelligence, Surveillance and Reconnaissance (ISR) and draws together elements of existing doctrine and best practice. Primarily, it informs senior commanders about how ISR staff can support their operations. Secondly, it provides the opportunity for commanders at all levels to understand the value of ISR. Thirdly, it provides a reference point alongside Allied joint doctrine for Defence ISR and intelligence specialists. Finally, it also provides external readers with an explanation of Defence ISR functions.

The following keystone publications are now in review:



● **Allied Joint Publication 3, Allied Joint Doctrine for the Conduct of Operations.** Expected summer 2024.

● **Allied Joint Publication 4, Allied Joint Doctrine for Sustainment.** Expected autumn 2024.

● **Allied Joint Publication 5, Allied Joint Doctrine for the Planning of Operations.** Expected autumn 2024.

● **Allied Joint Publication 6, Allied Joint Doctrine for Communication Information Systems.** Expected autumn 2023.

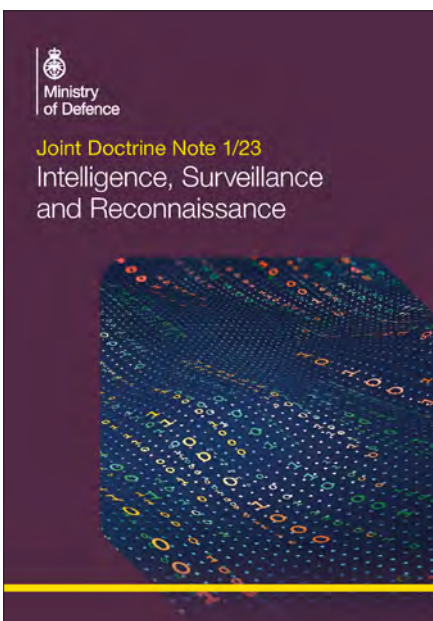
● **Joint Doctrine Publication 0-10, UK Maritime Power.** Expected summer 2023.

● **Joint Doctrine Publication 0-20, UK Land Power.** Expected summer 2023.

● **Joint Doctrine Publication 2.00, Understanding and Intelligence Support to Joint Operations.** Expected autumn 2023.

Doctrine publications and supporting documents can be found at the following links:

- Defnet – Development, Concepts and Doctrine Centre (sharepoint.com)
- DCDC App on the Defence Gateway Development, Concepts and Doctrine Centre (mod.uk)
- GOV.UK – Development, Concepts and Doctrine Centre (gov.uk)
- YouTube – Publications may be supported by introductory videos and audio books which can be accessed from the Development, Concepts and Doctrine Centre YouTube channel.



The Development, Concepts and Doctrine Centre Doctrine Team writes authoritative threat-informed NATO and UK strategic and operational level doctrine to inform professional military education and guide operations. By putting 'NATO at the heart of UK defence' it is able to achieve maximum coherence and interoperability with, and between, close allies and partners. Where possible, it will adopt NATO doctrine (Allied joint publications) rather than producing national doctrine (joint doctrine publications). Where it cannot, it will make sure that the UK remains compatible. UK specific 'best practice' is preserved through a small number of UK specific publications with supplementary elements added to NATO publications where required.



The Land Warfare Centre Warfare Branch published the following manuals, handbooks and doctrine notes during winter 2022-23.

Army Field Manual: Urban Operations

More than half of the world’s population today lives in an urban area, with growth accelerating particularly in the developing world. Operations in and around urban centres are certain: towns and cities are not only centres for people, but also economic activity, critical infrastructure, logistics, and governance, and therefore will have political and psychological significance for all parties. It is where populations are concentrated and where they are most connected, internally and to wider diasporas. In recognition of its importance, its complexity and the cost of getting it wrong, the executive committee of the Army Board directed that the Army must hone training, equipment and doctrine for urban operations. This publication tells the reader how the British Army intends to fight from and in urban areas. Importantly, it draws on operational research, historical analysis and lessons from contemporary operations, including Ukraine, Iraq and Nagorno Karabakh.

Urban Operations is aimed primarily at battlegroup commanders and above, but Chapter 1 – *Understanding*, is intended to be read and understood by all, at every level. The manual is formed of four chapters:

1. Understanding the urban environment. The context of urban operations, the dimensions (physical, human and information) and effects on military operations.
2. Operations in the urban environment. How and why military operations at the battlegroup and formation levels (brigade and division) are conducted and key considerations.
3. Capabilities and planning considerations. Describes combined arms capabilities, their employment and optimisation for urban operations.
4. Tactical activities for urban operations.



The **Planning and Execution Handbook** builds on the core content of *Army Doctrine Publication Land Operations, Part 3: Command* and is complemented by the *Staff Officers’ Handbook*. It provides a standardised and current ‘how to’ in support of the conduct of tactical planning and execution processes. This revised edition supersedes the 2018 edition and covers: the planning tools, planning processes, delivery of orders, mission execution and mission evaluation.

In line with the renewed focus on supporting NATO operations, the UK tactical estimate has been replaced by *NATO Allied Procedural Publication-28, Tactical Planning for Land Forces* and includes specific considerations for UK headquarters. The combat estimate has been updated in line with lessons identified by our staff colleges, collective training exercises and observations from recent conflicts.

There are new sections on rapid planning, decision advantage, command and control resilience, combined arms defence planning and deception; all targeting the creation of mutual understanding, enabling decentralisation, pursuit of the initiative and the generation of tempo. This doctrine remains the foundation from which standing operating instructions can be developed and should continue to guide planners at every echelon.

Doctrine Note 22/02: Freedom of Action in the application of Land Power is concerned with the integration of enabling effects in

Doctrine Note 22/02
**Freedom of Action in the
Application of Land Power**



the land domain. The land domain is the pre-eminent domain of war; it is where wars are decided. In modern land warfare, however, success is achieved not just by ground forces, but by a combination of ground, air, information, and maritime capabilities.

Doctrine Note 23/01: Cyber aims to improve common understanding across the land component of the potential utility, the challenges, and the limitations of conducting military cyber operations at the operational and tactical level. It is intended as a simple explainer of the key issues and challenges for the land component for those wanting to understand more about operating in cyberspace, and as a complement to the more detailed and comprehensive doctrine being developed elsewhere. It is focused on offensive cyber but also provides some brief detail on defensive cyber operations.

Doctrine Note 23/02: Information Manoeuvre seeks to consolidate the current thinking on information manoeuvre as a component of land manoeuvre as defined in *ADP Land Operations, Part 1: Competition and Conflict* by improving understanding of information manoeuvre and the associated capabilities. It is an evolution of *Doctrine Note 19/04: Information Manoeuvre*, published in 2019, and incorporates the updates to *ADP Land Operations 2022*.

Doctrine Note 23/03: Human Security provides an understanding of human security and presents the underpinning knowledge required for the practitioner to be more aware of human security and how to integrate human security considerations. The content of this publication should be considered as the base standard for training and education establishments to meet and for the more experienced personnel, a baseline of current knowledge and practice.

OFFICIAL-SENSITIVE
Handling instructions: For MOD use and authorised personnel only

Doctrine Note 23/01
Cyber



Doctrine Note 23/02
Information Manoeuvre



“THE PURPOSE OF THE BRITISH
ARMY IS TO PROTECT THE UNITED
KINGDOM BY BEING READY TO
FIGHT AND WIN WARS ON LAND.”



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