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**INCLUDES A SPECIAL
SECTION ON THE
FALKLANDS CONFLICT**

The Journal of British Military Thought

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Contents

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

CHACR

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AUTUMN 2018

HISTORY

BOOKS

Editorial

It is three years since the Centre for Historical Analysis and Conflict Research (CHACR) was created by the then CGS (and now CDS) as a manifestation of what he referred to as brains-based approach: a privileging of the conceptual component of fighting power as a means to ensure the Army develops a competitive advantage in both its operational and developmental endeavours. In pursuit of this goal the CHACR has conducted a programme of conferences, workshops and lectures, established a Global Analysis Programme, promoted opportunities for external academic study, created a simple manual wargame for use at unit-level, supported staff rides, and, most importantly in this context, exercised editorial oversight of the *British Army Review*.

The problem is that small teams of determined men and women can only achieve so much in promoting an agenda and offering opportunities. What the brains-based approach requires if it is to become a patent reality is mass participation; that is the active engagement of soldiers of all ranks in thinking about their profession and engaging in debate as to our future direction. In this sense, the enterprise remains very much 'a work in progress', but there are encouraging signs. *The Wavell Room* is gaining increasing attention as a dynamic forum for online professional debate and there is plenty of evidence of units and formations running programmes of conceptual development that achieve far wider impact than the CHACR's efforts. This edition features some excellent articles stemming from Commander Field Army's staff ride to the Falkland Islands earlier this year and the

next edition will be largely given over to the products derived from the final Operation REFLECT Army Staff Ride taking place in October.

It is vitally important to the future health and effectiveness of the British Army that the brains-based approach flourishes. This edition includes the first of a series of articles that examines how much emphasis the Russian Army places on learning. In his absorbing study of the so-called 'Gerasimov Doctrine', Dr Steven Main argues that what some have interpreted as a novel approach or even a new form of warfare is merely the product of the Russian Army's rigorous study of what has worked in its past and current operations. It follows that if our 'pacing threat' is pursuing its own brains-based approach, so too must we if we are to maintain parity let alone a competitive edge. Similarly, as the CHACR has learned during several visits there, India has an impressive array of institutes dedicated to professional study. In this edition, Colonel P K Gautam from the Institute for Defence Studies and Analysis explores the contemporary relevance of Kautilya's *Arthashastra*, an astonishing work of political and military philosophy that is comparable to those of Machiavelli and Clausewitz, while predating them by many centuries. We are grateful to the United Services Institute of India for allowing its reproduction here. However, for good measure, we also include an interview with one of Britain's greatest thinkers on the art of war, Professor Sir Michael Howard, to whom we all owe a tremendous debt for establishing the study of war as a serious academic discipline.

Nevertheless, it is probably fair to say that our ambition for the *British Army Review* to be a standard bearer of the brains-based approach, show-casing the best of British military thought, is still falling short. While we recognize that online fora offer greater immediacy of interaction, we remain convinced that in common with all other serious armies, the British Army must maintain a high-quality printed professional journal comprising articles that have been thoroughly researched, skilfully composed and carefully edited to assure their quality. This **does not** mean that articles that are critical are censored by the CHACR or the chain of command, but it does mean that submissions that are weak, based on loose logic, flimsy evidence and wild assertion, or are legally defamatory are weeded out, just as they would be in any reputable publication.

In short, a brains-based army needs its leaders at all levels to participate in vigorous and thoughtful debate. So, if you consider yourself to be a thinking soldier with original ideas and strong opinions, then why not take up the challenge of composing them into an article and submit it for publication? We have and will continue to have the professional journal that we deserve and the quality of each edition is determined by the quality of the articles submitted not by the editorial team. So, if you think it could be better then take your own steps to improve it. We, for our part, will strive to increase online access, and to publish the very best material that we can.

Colonel Martin Todd
Assistant Head CHACR

The New Land WarfareCentre

In an exclusive interview with BAR that took place on the 15th June 2018, **Major General Tim Hyams** outlines his vision of the new Land Warfare Centre and how it relates to the rest of the Army.

The Queen's Royal Hussars (QRH) Battlegroup integrated combined arms live firing attacks bring all the elements of the battlegroup together during Exercise Prairie Lighting. This three day integrated live firing exercise with Warrior Armoured Fighting Vehicles and dismounted troops fighting in trenches, the urban environment and conventional warfare was all part of Exercise Prairie Storm 1 2016 held at British Army Training Unit Suffield (BATUS), Canada. Photo: Corporal Mark Webster RLC, Crown Copyright

We have two-column body text with header "BAR INTERVIEW" and footer "BAR INTERVIEW | 5".

1. The Land Warfare Centre used to be the name of the entire site in Warminster. Can you outline what the LWC is now, how it is organised and what the various colleges and schools within the LWC do?

We have had a location called the Land Warfare Centre for a long time. But we have not had a Land Warfare Centre in its genuine sense; it is something to which the Army has been aspiring since Lieutenant General Cedric Delves was Commander Field Army. The aim is for the LWC to act as Commander Field Army's agent in driving agile adaptation of the Field Army critically through delivering trained force elements at readiness, but also through contributing to a depth of institutional capability and capacity, for the dynamic and complex future operating environments faced by the Army in an era of constant confrontation. In so doing, the LWC will be the mechanism through which Commander Field Army can inform effectively, and with more authority, the development by Army HQ of future capability.

In terms of what it looks like, the LWC contains the trade schools, the collective training establishments, and the staff branches covering the warfare development, training requirements authority and training delivery authority functions. That aside, it contains the normal functionality one would expect in a two-star headquarters controlling that range of outputs, as well as delivering a major transformation programme, and supporting an organisation of some 11000 people spread over four continents. So, it is a powerful engine with which to drive change in the fielded force.

2. What objectives have you set for the LWC? What challenges does it face?

I think the objectives are encapsulated in the idea that we must be the engine driving adaptation of the fielded force and, in so doing, producing the evidence that allows Commander Field Army to to more accurately inform the generation of future capabilities. There are a series of priorities that flow out of that; in big handfuls, they boil down to four areas of work.

First, we need to drive optimisation of the fielded force. This is being taken forward via the Force Optimisation Campaign Plan, which will prioritise and synchronise

activity to optimise the Current Force through capability integration, experimentation, structural change and by developing doctrine, training and interoperability; to generate the Army's contribution to a joint and interoperable force capable of defeating a peer (+) enemy in complex terrain. In so doing, the Force Optimisation Campaign Plan also will provide evidence to inform Capability Development (CAPDEV).

Second, we need to transform trade training to meet the challenges ahead. Specifically, trade training must become more agile, cost effective and responsive to changing requirements and it must place a lighter burden on the Generated Force. This is the subject of the Trade Training Transformation Programme.

Third, we need to adapt our collective training environment so that it delivers training as a surrogate for warfare and builds towards the longer-term Collective Training Transformation Programme, which will harness an alliance with industry and a better use of technology.

Fourth, we need to maintain our usual business of delivering trade training to servicemen and women from across all three services, providing the force preparation to deliver the required force elements at readiness, and the day-to-day management of an organisation spread literally across the world.

And in all of this, we need to communicate to the wider Army that, for the first time, it has a warfare centre as an entity rather than a physical location; and how that warfare centre is to be an engine for adaptation.

3. What's the difference between ITT and STT and how do they provide quality and quantity of trained strength into the Field Army?

Initial Trade Training (ITT) is what used to be referred to as Phase 2 training. It is the training a soldier receives having passed out of basic training and that develops him or her from a trained soldier into a trade trained soldier; for example, a tank driver, an AS90 Gunner or a Combat Engineer. Subsequent Trade Training (STT) refers to the trade training interventions our soldiers receive throughout their careers to allow them to progress in their career streams and achieve their full potential.

This picture shows Officer Cadets from Royal Military Academy Sandhurst (RMAS) on Exercise Dynamic Victory, Grafenwoehr & Hohenfels Training area, Bavaria, March 2016. Exercise Dynamic Victory is the final confirmation exercise of the 44 week commissioning course; it tests the cadets suitability to become junior officers in the field army. Photo: Bombardier Murray Kerr RA, Crown Copyright

The sum constitutes a trade training framework that supports the career structures across the Army and thus the delivery of operational capability.

In terms of the quality and quantity, the quantity is a manifestation of the outcomes achieved by the Army Recruiting and Initial Training Command, and which produces the right number of basic trained soldiers, at the right standard. Our job then is to ensure those soldiers are armed, through-life, with the quality of trade training that they and the Army need. That training is subject to continuous improvement, linking to a more transformational approach being taken forward via the Trade Training Transformation Programme, which, as I indicated previously, will deliver training as efficiently and effectively as possible, harnessing modern ways of working, the use of technology and best practice from academia. Taken together, that will allow us to ensure trade training reflects our requirements as the threats we are facing and the kit and doctrine we are using evolves and changes.

4. Is there some kind of method for you to look at and discover various skills that soldiers have and then move them into those areas so they end up going through their careers doing a number of different specialisations?

There are three parts to that.

First, what happens in the recruiting arena, where data analytics are increasingly used so that we can identify skills and character traits an individual has as they come into the Army. In so doing, we can, in a much more scientific way, help them with their initial choice of cap badge and trade.

Second, it is about using the evidence from a coherent training pipeline as people progress through it; both in terms of the trade training they are receiving and how they are performing in the wider collective force preparation environment. Using this evidence, we can develop our people over time.

The third aspect to this is Programme CASTLE, which looks more fundamentally at our career structures, qualifications and the like, to make sure they are fit for purpose, meet our operational needs and are tailored more closely to the aspirations and career requirements of those entering the Army now, and in the future.

5. Can you explain how the training pipeline works and how it fits into the operations of the Land Warfare Centre?

For the first time, we have a single coherent pipeline as opposed to a series of elements sitting under different commands. This means we have aligned responsibility, accountability and authority for the whole of the pipeline. That is a significant shift forward. It means we can look at the sum of our training and understand cause and effect between its various components. That will allow for balance of investment decisions about where to focus resource and effort to ensure we maximise productivity from the pipeline. But most importantly, it will allow us to optimise the effect achieved in terms of the more assured delivery of force elements at readiness.

Officers and soldiers from 1st Battalion The Princess of Wales's Royal Regiment (Queen's and Royal Hampshire's) (1 PWRR) acclimatize to the soaring heat and prepare their equipment after recently deploying to Kenya on Exercise Askari Thunder 6. The aim of the exercise is to put the 1PWRR Battle Group through Hybrid Foundation Training(HFT). The exercise consists of multiple stages and is conducted over a six week period. Photo: Corporal Wes Calder RLC, Crown Copyright

In a wider sense, this allows us to understand where there are opportunities to experiment so we can drive the force optimisation agenda. And the sum of training and experimentation being delivered coherently means we can draw lessons from that activity to inform adaptation of the force.

6. How do you see Collective Training becoming a surrogate for warfare or how will it generate the required combat ethos and deliver the kind of tactical innovation the Field Army needs?

I think there are several strands to this.

First, our training must be designed to deliver war fighting skills and capability, framed within the context of Integrated Action and a prioritised range of likely operating contexts. For this to happen, and in recognition of the evolving nature of the human and physical terrain in which we will be required to operate, we must move from being an Army that trains often in complex human and physical terrain, to one that trains always in complex human and physical terrain; and within that context, trains often in the urban setting.

Second, our training must be arduous, competitive, expeditionary and combined arms in nature, such that it delivers enhanced realism and a combat ethos. Critically, it must be constructed such that it provides time to train, fail, reflect, re-train and improve. Central to this is the idea that it is safe to fail during training; with training delivered in such a way that the training audience is challenged, empowered and encouraged to innovate, adapt and be comfortable with uncertainty.

Third, our training must reflect the reality of combined, joint, inter-agency, inter-governmental and multinational operations. Thus, all else aside, in terms of delivery, and noting the requirement to maintain assured sovereign training capability and capacity, the British Army increasingly will train in regions of the world that cement our joint and international partnerships, reassure our allies, deter potential adversaries, and contribute to wider foreign policy outcomes.

Fourth, we must enable this via a single training domain that blends the live, virtual and constructive environments. This is important for several reasons. It offers advantages in terms of flexibility, adaptability, utility and efficiency. It allows us to go beyond providing a contextual wrap for kinetic actions, to the simulation of effect across the range of land manoeuvre. And it offers the ability to measure the sum of, and thus generate more coherent data from, our training; not least, such that performance can better be verified before conclusions are drawn and so we can use that same data to refine future training delivery.

7. How will you ensure that the training for land operations is of the highest standard and, perhaps more importantly, for the kind of operations envisaged in Army 2020 and beyond?

It links back to my answer to the last question. In that context, it is about developing and maintaining an understanding of how the operating context is changing and evolving over time. It is about links to wider government, links into the intelligence community, links into academia and industry, links into DCDC; all so we understand, as the character of the contemporary operating environment is evolving and as the threats are changing, the nature of the challenge we face. That allows us to take the demand signal and test and adjust our processes against it, so that what we are delivering matches the requirement for the Army to warfight at scale against peer adversaries and in the contexts in which it may have to face them.

8. What kind of lessons learned process for training do you have that drives the learning process, in particular the ability to adapt and innovate?

The operations of the last fifteen years have led to a much-improved process for drawing lessons together from operations and training. The opportunity now is having this single coherent pipeline and the right connectivity into those other feeds from operations and the wider sources of understanding. In support of this, we are focussing on the difference between information and assured knowledge to underpin the conclusions being drawn and the associated judgements about where we need to adapt and optimise.

9. How does the Land Warfare Centre support NATO operations and training?

If multi-nationality is the norm and NATO is our primary alliance through which we are going to conduct warfighting operations, it is axiomatic that preparing for

NATO operations is crucial to what we do. It is as simple as that.

10. The LWC motto is 'Prepare for War', but what is the LWC's involvement in training for Defence Engagement? Do the preparations for war include asymmetrical warfare such as war in cyberspace?

There are two distinct questions here.

In terms of asymmetrical warfare, the short answer is yes. The primary output is combined arms manoeuvre conducted in the context of Integrated Action; and Integrated Action is how you are using the full range of effects to achieve the right outcomes in the minds of the actors and audiences amongst whom you are operating.

In terms of contributing to Defence Engagement, there are various strands to this.

We are preparing people through the Adaptive Foundation for the three principle tasks of a combat ready and adaptable Army prepared for current and future contingencies, forward persistent engagement, and homeland security. By simply doing what we do we are contributing to defence engagement.

Linked to this, many of our training exercises are either conducted at overseas Collective Training Establishments (CTEs) or on an expeditionary basis. By training in those regions of the world in which we expect to operate, or training in regions of the world where we have allies and partners, we are contributing to defence engagement on a routine basis.

Equally, we routinely welcome friends and allies to train alongside us at our trade training schools. We also send Short Term Training Teams (STTTs) out to deliver that training in their countries.

Finally, there is collaboration with our allies and partners to discuss doctrine and warfare development; this both contributes to a wider defence engagement effect and, critically, being interoperable by design.

11. Does the training include cultural training as well?

Integrated Action is about achieving the right effect in the minds of the actors and audiences that we need to influence. It is necessary to understand the cultural norms of those actors and audiences so you can pitch your actions appropriately. So there absolutely is a need to attend to cultural aspects.

*The Queen's Royal Hussars (The Queen's Own and Royal Irish) (QRH) Battlegroup attack an oil refinery during Exercise PrairieTempest, a combined arms integrated battlegroup Tactical Effects Simulation (TES) exercise with Challenger 2 tanks and Warrior Armoured Fighting Vehicles and dismounted troops fighting in trenches, the urban environment as well as conventional armoured warfare. This was all part of Exercise Prairie Storm 3, 2016 at the British Army Training Unit Suffield (BATUS), Canada. **Photo: Cpl Mark Webster (RLC Phot), Crown Copyright***

On History, War and Education: Sir Michael Howard

Sir Michael Howard OM, CH, CBE, MC, FBA, military historian and former Chichele Professor of the History of War, Emeritus Fellow of All Souls College, Regius Professor of Modern History at Oxford University, Robert A. Lovett Professor of Military and Naval History at Yale University and founder of the Department of War Studies, King's College London, in an exclusive interview with *British Army Review*, provides us with his perspective on the nature of history and war.

Challenger 2 tanks of the 1st Battalion the Yorkshire Regiment Battle Group move off during the withdrawal phase of a battle in Prairie Lightning Day 3 of Prairie Storm 2 in BATUS. **Photo Corporal Donald Todd (RLC) Crown Copyright**

1. You were a Captain in the Coldstream Guards in Italy in the Second World War, fighting at Salerno and Monte Cassino and winning a Military Cross. What memories of these momentous events stand out most clearly today and what are your reflections on the experience of war? How important was this experience of wartime service in shaping your perspectives on military history?

My own wartime experience consisted of ten fairly hairy days at Salerno followed by ten months out of action due to recurrent malaria. I re-joined my battalion after the fall of Rome and remained with it on the long slog north to Trieste, including six months in the mountains between Florence and Bologna. This involved a few dangerous episodes, a lot of boredom and discomfort and a surprising amount of fun: probably not untypical of the average military experience. But remember that this was the perspective of an infantryman. For other branches of the services the mix would have been different.

Overall the lesson that I learned was the overwhelming importance of morale to see one through not only danger, but as important, if not indeed more so, discomfort and boredom, for they are just as difficult in terms of morale as danger. Here, I was lucky to be in an excellent regiment and under an outstanding commander for most of the time. However, having first-rate NCOs was almost more important than having good officers. Good NCOs could carry mediocre officers, but not vice-versa. Also, 'leadership' in the traditional sense was only part of the job, and not the most important. It was as difficult, if not more so, to maintain high morale out of the line when the unit had little to do and was uncomfortably housed rather than in sticky situations where danger itself provided its own kind of challenge. Desertion was at its highest rate in Italy among units that were out of the line and were thoroughly 'browned off'. 'Leadership' was much less significant than 'caring', and the sense that one was being cared for. I should insert the caveat that I was serving in an army of conscripts, not professionals but I doubt whether that made much difference.

You asked how my military experience shaped my perspective on military history. I doubt whether I have any perspective on military history as such, but it shaped my understanding of war as a historic phenomenon. It

made me realise that war was an experience that took place in a unique environment of uncertainty, confusion, ignorance and, not least, danger: what Clausewitz termed 'friction' but what you and I call 'Murphy's Law' - if anything can go wrong, it will. That makes it very difficult to formulate any reliable rules or theories about it. What it does do is make 'moral ' as opposed to 'physical' forces of major, if not overriding, importance. In this world of 'friction', it is moral forces that keep one going: 'Physical forces' - weapons, numbers, everything calculable, are the weapons one fights with, but moral forces provide the will to use them, and these are incalculable. Effective armed forces, and effective strategy, demanded a combination of both. To understand this is an essential tool for military historians, let alone the military. For example, the development in fire-power gave such a huge increase in the effectiveness of physical forces in the 19th century that armies in 1914 believed that only a comparable increase in 'moral force' could overcome the physical strength of the defensive - resulting in the suicidal

Third Phase 11 - 18 May 1944: Allied 4.2 inch mortars in action at the start of the final offensive on Cassino. **© IWM (NA 14733)**

Two Typhoon FGR4 aircraft, flown by 29 (R) Squadron on patrol from their base at RAF Coningsby. The Typhoon in the foreground (right) can been seen with the RAF 100 colours painted on its tail, to commemorate the Royal Air Force Centenary Celebrations. Photo: Sergeant Paul Oldfield, Crown Copyright

infantry tactics of 1914 and the widespread pre-war belief that one must 'die for one's country'; (I am glad to say that the first thing I was taught at OCTU in 1942 was that any fool could die for his country, but our job was to ensure that it was the Germans who did so - not us!)

Then there developed - especially in the USA - the belief that one could develop such overwhelming fire power - especially from the air, that the moral forces of the adversary could be simply eliminated. That didn't work in Vietnam, and has not worked very well in Iraq. And if you look at my war in relation to this idea of overwhelming firepower, why were the Germans so bloody good? Their morale barely cracked until the last few weeks, while our desertion rates were lamentable. And we had complete command of the air! That raises all kinds of questions for military historians, not least those raised by Clausewitz. What kind of war are we fighting - a total war for the destruction of the enemy's independence, or a limited war for specific political objectives? And who makes the decision?

2. How do you differentiate between moral force as opposed to morality? Is it even worth making that differentiation? For example, ISIS has the will to be as brutal as it wishes to be but does this make it an effective fighting force? We know that the Germans were good at fighting but while most of the atrocities were committed by SS troops on the Eastern Front so too, did the Wehrmacht lose its moral compass. If you have an army that has the will to fight does it also have the will to remain a moral army?

The cynic would say that one man's morality is another man's fanaticism. There is no question that the SS produced the best troops in the German - some would say any - army: but they deliberately abjured any idea of 'morality' as we understood it. (I saw what they did to luckless Italian villages they suspected of harbouring partisans, and it wasn't at all nice.) In the same way the Islamic fundamentalists glory in their rejection of everything we regard as moral, but there is no sign that it makes them less effective as soldiers. I am afraid that this kind of fanaticism is in fact a very powerful 'moral force': one that we cannot imitate, but increasingly have to reckon with.

3. Do you think that the role of airpower is over-rated? The debate between those proponents of air and those of the tank could show that the jury is still out on the effectiveness of airpower.

For my generation air power was all-important, and after the experience of Dunkirk our generals virtually refused to fight until we had 'command of the air'. We could not land anywhere, or do anything once we did land, without it. But it was air power in close combination with land and sea power. Where the RAF went wrong was with the belief that air power alone could win wars, and much time was wasted, and lives lost, before we got the mix right.

Today things are obviously different, and I can well understand feeling happier with a nice big tank on call rather than an aircraft that might or might not be there when you wanted it. But again, what matters surely is the combination of the two and their close liaison? By 1945 we had got this about right.

4. Your suggestion that it does not matter so much what doctrine the British Army has now, so much as its ability to get it right quickly when it matters, is much-quoted at a time when the Army is painfully aware of the need to be adaptive and innovative. From your studies of military forces down the ages, what are the hall-marks of effectively adaptive forces?

I think it was Von Moltke who said that no one planned to survive the first contact with the enemy; and it was Eisenhower who said that plans were useless but planning was essential. Montgomery said that what mattered was to have the best possible plan and stick to it, but of course he didn't. Both at El Alamein and in Normandy he had to revise his plans, which he did so effectively that he could later pretend that he never did. But what Ike meant, I think, was that planning makes you look at options and think around the problem, so that, although you have to settle for a plan, you have first thought about it in depth and considered the alternatives, so you at least have in mind the possible need for a Plan B. Remember that the enemy also 'has a vote' but I am sure that this is one of the first things taught at the Staff College!

5. The CGS is intent on establishing a 'brains-based approach' that will enhance the Army's intellectual rigour, partly by growing a cohort of soldier-scholars through external placements at universities. As someone who has more claim to the title of 'soldier-scholar', do you think that learning enhances the ability of soldiers in general and senior commanders in particular?

It all depends on what you mean by 'learned'. It is a term little-used in education today - more's the pity. For me it means experience in some branch of the sciences or the humanities: something distinct from the technological expertise such as that available at such in-service establishment as Shrivenham. Nor is it something acquired at undergraduate level: that is only the first step. However distinguished the university and whatever their subject, undergraduates learn only two things: they learn, or should learn, how to think; and they learn how to get on with one another - a vital stage in the maturing and socialisation process. Undergraduates learn far more from one another than they do from their teachers. They grow up, make mistakes, fall in and out of love, make fools of themselves, play games, experiment with various activities, in short, grow up. A few may decide that they want to become learned - become scholars or scientists. Some decide to become soldiers, and those who do will bring to the job a range of experience and understanding of people that will be of great value, whatever rank they reach.

All that means is that the Army should certainly recruit graduates whenever it gets the chance, not because they are 'learned' but because of the broader experience they can bring to the job. They should certainly recruit them if they are potentially 'brains' - not least because, if they progress past field level, they will be having to deal with very bright people as colleagues, allies, and adversaries, not least because, war is now an immensely complicated business. But I am not sure that it is a good thing to send officers of any rank on short courses, unless it is to acquire special skills. They must go through the full experience if they are to acquire any benefit from it.

6. The British Army offers external placement courses to people to take post-graduate courses that will be of value to the Service. Do you think that these courses are worthwhile?

When I was teaching at Oxford the MOD introduced 'Defence Fellowships' at universities for bright officers as an alternative to the RCDS, in which they spent a year at a university writing a thesis and attending lectures under academic supervision. I supervised Nigel Bagnall, which did me a power of good, whatever it may have done him, and others included such formidable figures as Tony Farrer-Hockley and Frank Kitson. But I don't think it really worked. They were too old to mix with the undergraduates, and few dons were very interested in them. For them it was a pleasant sabbatical, but I'm not sure how much they got out of it. Anyhow, the scheme quietly faded away.

Since then two things have happened. First, graduate studies have hugely multiplied, and single year graduate courses are now very common; so officers from the

services would find plenty of company of their own generation. Secondly, war studies and strategic studies have been invented, largely by me.

When we created war studies, way back in the 1950s, we saw it as a branch of social studies and part of a university syllabus. The enthusiasm with which the services took them up took us by surprise. But they did. The result is a proliferation of strategic studies courses from which you can take your pick. King's College London provides them both for the services at the JSSC and for civilians on the Strand, and its offshoots seem to be multiplying. Hew Strachan has left behind a thriving industry at Oxford.

But obviously there is also a huge range of subjects of importance to the Services - languages, area studies, to say nothing of science and technology - for which the services are dependent on the universities, and with the growth of cybernetics these will continue to grow. So, the closer the connection between the two, the better!

7. You have suggested that the study of military history is only valuable if it is conducted with sufficient depth and breadth to capture its inherent complexity and interactions with other aspects of policy. In this light, how important, and effective, are the periodic academic interventions on career courses (especially at staff colleges) in embedding this level of understanding?

I don't see how one can have any kind of analysis without history, since history provides the only available data on which to base any analysis. Thanks to 'friction' wars resemble each other in a way that they resemble no other kind of human activity. One learns more about war by studying even the Battle of Hastings than, say, a game of football. In football the players are not allowed to kill one another, much as they would like to!

But some wars are of greater use for the military specialist than others. Although all wars are basically the same, they have been transformed over the past century by technological change - a variable that Clausewitz did not foresee. There was little basic difference between the wars of Napoleon and those of Julius Caesar: they were two-dimensional, fought basically by men and horses, with a few elephants. They were transformed in the 20th century by air power and by radio communications - to name only two: -and they have continued to be transformed ever since. I suspect that cyberwar may make as much difference for us as flight did for our grandparents. The Clausewitzian triad remains the

same: government, military expertise, people, but the relationship between them has been transformed as have the problems confronting the military. How can one cope with, or even understand the impact made by these changes unless one knows about their development and the impact they made on their times?

One of the hardest tasks confronting the military today is sorting out the constants from the variables. We still have a lot to learn from the campaigns of von Manstein. But how much should we forget?

8. Given the fact that you have written extensively on Clausewitz, how relevant do you think his ideas are to the British Army of the 21st Century and what do you think the young officer and soldier of today can learn from his teachings?

We touched on Clausewitz earlier, but one can't avoid the old boy. He taught us to understand war in the same way as Newton taught us to understand the universe. Newton discovered the force of gravity which holds everything together. Clausewitz discovered the power of Friction - the element in which war exists and is quite independent of reason, being compounded of uncertainty, chance, and above all, danger. War is bloody dangerous. It makes it hard to think straight. To survive in this environment at all, let alone prevail, one needs moral qualities that are quite unquantifiable in the way that one can quantify the physical strength of the armed forces. In fact war is 'a contest of moral forces - by means of the latter'. Physical forces provide the weapons: moral forces, the will to use them.

Second, he pointed out that war was 'the continuation of politics, by other means'. It is not simply a rather lethal game. It is fought for a political objective, which is determined by governments. The relationship between military force and political objective is the essence of war, and 'whoever goes to war without understanding its objective and knowing how to achieve it is not in his right mind.'

Finally, he put it all together in what he called a trinity - composed of reason (the government) professional skill (the armed forces) and passion and motivation for fighting, (the people). All that is as relevant today as it was two centuries ago and will be two centuries hence, and as significant for the platoon commander as it is for the general.

I certainly would not expect the platoon commander to read the whole of Clausewitz, even in my pellucid

AS90 Self Propelled Guns of 26 Regiment Royal Artillery conduct Exercise Mansergh Spear on Sennelager ranges in Germany.
Photo: Mr Dominic King - Army Press Office Germany, Crown Copyright

translation. But there are many abridgements, of which by far the best is Michael Howard (Oxford University Press 1983). And in that they need read chapters 2, 3, and 4.

9. What is your take on cyberwar and how do you think it will change the future of warfare?

As I understand it, cyberwar enables one to paralyse, if not to destroy the critical infrastructure of the enemy, in particular his power and communications systems, civil as well as military, and do so selectively without revealing one's authorship. The whole idea is as fantastic as were the ideas about the future of war, such as air power, being bandied about by Jules Verne and H.G. Wells at the end of the 19th century, but air power did become a reality within decades and introduced an entirely new dimension into warfare. With such a capability as cyberwar one could paralyse the enemy's armed forces and effectively hold his cities to ransom - without having to destroy them. Much more humane than nuclear weapons!

10. If you look at the Iraq War of 2003 and other recent conflicts, including Afghanistan, in which the British Army has been involved, to what extent do

you feel that military history was manipulated into providing justifications to go to war?

I see no evidence to suggest that military or any other kind of history was manipulated to provide justification for the Iraq/Afghan Wars. But intelligence clearly was. Our governments pretended to have intelligence that Saddam had weapons of mass destruction, which they had not, and he had not. But equally at fault was our own total ignorance of the region, and the likely consequences of our intervention. So far as military history was concerned, it was not so much manipulated as ignored. How much did we know about our record in Afghanistan over two hundred years before we went there in there? Or about the great Arab rising in Mesopotamia in 1920 that led to the independence of Iraq?

The whole experience illustrates the Clausewitzian trinity very clearly. So far as we were concerned, it was a purely political war with little if any moral content. We had a superiority of physical strength but no moral force to back it. Our adversaries were inferior in physical force but had unlimited moral force, and the longer the war lasted the greater it became. They were prepared to die, not so much for their 'country' as for their societies,

tribes, or what have you, to protect them against the foreign interlopers and the longer we stayed, the more they hated us.

11. Regarding war and international order, what is your view on peace? Does it tend to breed the conditions for war and by its nature does it make war inevitable? Are the conditions for another major conflict falling into place now?

People have been writing about peace for centuries, but all you need read is my very short book *The Invention of Peace* which I am sure you have on your shelves. If you haven't you should have.

12. Do you think that military service should be seen as a career or a vocational commitment?

Surely both are the case? I suppose that I have a 'vocation' as a teacher, given that I wanted to be one ever since adolescence, but I could not have pursued it if there had not been a career structure to enable me to earn a living from it. That goes for the professions in general: law, medicine, the Church. The only difference for the Army is that it does not promise those who choose it as a career much beyond the age of 40, so perhaps it requires a higher degree of commitment from those who choose to pursue it?

Reservists from 3rd Battalion The Royal Welsh (3 R WELSH) breathe fire into Exercise Dragon's Talon in Germany that provides reserve soldiers the opportunity to learn from their regular counterparts, in this case from the Grenadier Guards (1 GREN GDS) who are also taking part in the exercise. **Photo: Dominic King, Crown Copyright**

Exercise ATLANTIC LEGACY: An Analysis

Major Roland Spiller RHG/D, provides an analysis of lessons learned from the Falklands campaign during EX ATLANTIC LEGACY, that took place in March 2018.

A Rapier Ground Based Air Defence (GBAD) system overlooks San Carlos Water with Fanning Head in the background.
Photo: British Army News Team, Army HQ, Crown Copyright

Exercise ATLANTIC LEGACY was a battlefield study led by Commander Field Army (CFA) to the Falkland Islands in March 2018. Perhaps uniquely, nearly thirty veterans of the conflict assembled to guide approximately seventy serving officers and other ranks from across the Field Army around the battlefields over which the veterans fought. The study was designed in the context of Commander Field Army's (CFA's) 'Back to Basics' initiative, which seeks to re-focus the Field Army on the essentials of war-fighting after a decade of counter-insurgency tactics and the legacies of Op ENTIRETY. With the current debates about the role of ground-based reconnaissance, not only in the context of STRIKE experimentation but also the more pressing question of 'fight tonight' training, there was much for recce soldiers and the wider Army to (re-)learn.

The battlefield study revealed immediately how pertinent the post-operational reports from Op CORPORATE are to the modern Army. The importance of basic role-based and general soldiering skills, individual and collective resilience, intelligent teaming and flexible Orders of Battle (ORBATs), simplicity in planning, and the centrality of leadership at every level were the key tenets of the reports, and are familiar themes to the modern audience and lie at the heart of the 'Back to Basics' initiative. The use of procedural, rather than positive control as a means of conducting battle-space management, the humanity with which the enemy was treated, and the ability to cope with the unexpected were all themes that the veterans emphasised, and are indicative of where we may need further development.

Some of the challenges faced by soldiers in the Falklands campaign, and the limitations in doctrine and training that these challenges exposed, continue to face today's Army. This article examines areas in which today's soldiers can make best use of the Back to Basics

The Battlefield Study party walk the Argentinian defence positions in the area of Darwin and Goose Green.
Photo: Army News Team, Army HQ, Crown Copyright

initiate to ensure readiness for the modern battlefield. It proposes that integration between different capabilities should be an inherent part of *Battle Craft Syllabus (BCS)* training; that we need to re-examine the degree to which commanders can expect, and be expected, to exercise control of tactical actions; and that we need to prepare soldiers and commanders better to deal with uncertainty, inculcating robustness leavened with humanity.

INTEGRATION IN TRAINING

The publication of the *Soldier First Syllabus (SFS)* and the *Battle Craft Syllabus (BCS)* is a hugely encouraging step towards reorienting the Field Army towards excellence in our core roles. However, BCS is at the moment largely designed as an arm-orientated activity. The lessons of integrating reconnaissance assets show that this should not always be the case.

For recce soldiers, a decade out of the core role of being a covering force has meant that the relevant skills not only need to be reinvigorated within regiments but also that higher formations are re-discovering how to employ ground-based reconnaissance soldiers. As an enabling capability, the core skills involve interaction and therefore cannot be practised effectively in isolation. Passages of lines, cross-cuing of targets, handovers of tracks and targets etc. are essential recce skills, but the current tendency to train battle-groups (BGs) and below in isolation on our principal training areas, including those in Canada and Kenya, mean that these skills are insufficiently rehearsed to be properly inculcated in troops. Thus, BGs try to become mini-brigades, growing ISTAR Groups and mimicking their enabling assets. This places a great burden on their staff, resulting in expanding headquarters that lumber across the terrain and present an obvious target to an adversary. Experimentation within 1 Armoured Infantry Brigade to reduce Headquarters size has been driven by this problem. If we accept that operational art begins at the divisional level, we need to train BGs to work within the wider orchestra, not trying to become one-man bands.

A lack of understanding of how best to integrate capabilities at Brigade level was exemplified by the under-use of medium reconnaissance in the Falklands. A comparison in the employment of not only the use of The Blues and Royals(RHG/D), but also patrols platoons from infantry battalions, at Goose Green and later battles, showed the cost of failure to integrate - Brigadier Thompson was remembered by 2 PARA veterans as saying that the failure to give them CVR(T) support for Goose Green was one of his major regrets, as they may have taken fewer casualties. The enormous

value of the detailed reporting of patrols platoons or their equivalents was consistently evident, as shown on Mounts Harriet and Longdon. They enabled commanders to break into Argentine positions at the weakest points, having conducting BG-level planning and rehearsal with the benefit of detailed knowledge of the position. However, these reports were not integrated effectively with air and aviation reconnaissance as there was no means of passing paper reports up the chain of command. Commanders at every level amongst the veterans lamented the under-use of Combat Vehicle Reconnaissance (Tracked) (CVR(T)) Scimitar and Scorpion. Here was a highly mobile asset with one of the best night-sights in theatre and a big enough gun to shape Argentine positions, yet the two RHG/D Troops in theatre were hardly used until Wireless Ridge (and as part of the diversionary attack in the battle for Mount Tumbledown). Veterans acknowledged that neither 3 Commando Brigade nor 5 Infantry Brigade trained routinely with CVR(T). In the absence of a liaison officer able to advise on CVR(T)'s employment, this capability was neglected because of sheer lack of understanding.

This lesson is familiar to those who have served in CVR(T) in Iraq and Afghanistan: the utility of mounted reconnaissance rediscovered throughout each tour rather than being seen as a vital enabler from the outset. Instead, CVR(T) were often used in isolation for long-range interdiction tasks that put great strain on a very old platform or as mobile fire support for the infantry. While Counter-insurgency (COIN) is certainly predominantly infantry business, this should not make enablers an afterthought. The lack of routine integration of Armoured Cavalry Regiments (ACRs) during brigade training meant that the opportunities to use CVR(T) for persistent surveillance, detailed reconnaissance and precision strike were poorly understood. A constant theme of both recent operations and Op CORPORATE was a lack of understanding of ACR squadrons among the BGs to which they were attached. These BGs did not understand ACRs' tactical capabilities; they had not considered or rehearsed integrating ground-based reconnaissance into their plans and were not aware of ACRs' logistic needs.

The points made above concerning integration of assets from Op CORPORATE, and the experience described above of recent campaigns, show that while the focus on core skills is central to the BCS, it does not follow that BCS should be just arm-orientated activity. This applies more widely than reconnaissance: rarely do tanks and armoured infantry operate in isolation from one another; neither is going to cross an obstacle without engineers, sustain itself without logisticians, or call for fire without gunners;

Veterans Lieutenant Colonel P. R. Butler and Major T Noble, both of 3 Para, describe the battle for Mount Longdon with Estancia House in the Background. **Photo: Army New Team, Army HQ, Crown Copyright**

all of these elements need signallers to communicate. This is not to advocate rolling out a division every time a sub-unit wishes to train; intelligent teaming of sub-units while conducting BCS training will allow them to inculcate the deep understanding of their neighbours and enablers that will enable them to step up to brigade and divisional operations. ROC drills, simulation, frequent exchange of liaison officers and occasional reading of our doctrine can do much to fill the gaps.

CONTROL AND UNCERTAINTY

Many of those still serving were struck by the simplicity and brevity of orders given to units and the scope for mission command that this afforded. With communications precluding the positive control on which modern Battle-Space Management (BSM) is based, simple procedural control was used as a de-confliction measure. Units were given resources in a fixed time and space, with movement between units being largely ad hoc. Blue-on-blue was a persistent problem, with passages of lines seeming to be little better than meeting engagements. There were several incidents of casualties being caused by British patrols ambushing each other,

either through units being unaware of each other's patrol routes and/or locations. Units often ran out of food and carried huge loads of ammunition. However, the impact on leadership of this very different approach to command and control is a revelation to the current serving commander.

Headquarters, at unit and every level below, were liberated from the constant cycle of reports and returns which, on the modern battlefield is a result of our ability to pass data so freely. Knowing that their battlespace and, critically, movement through the air above it, was their responsibility and that other users would come to them rather than the current system of airspace belonging to the air domain, meant that they could call for support without having to demonstrate the highly granular understanding of the precise laydown of forces on the battlefield that so slows processes now. Ownership of risk was held by those carrying out tasks, and leadership became personal. It was frequently commented upon by the audience how many unit and sub-unit commanders referred to very near misses while leading from the front: commanders were forced to decide

where they carried the most risk and therefore from where they might manage it most directly. By contrast a modern commander is drawn further away from fighting troops by the apparent pressure to maintain a detailed understanding of the battle picture.

This forward command presence led not only to extraordinary displays of leadership, courage and tenacity by officers who were intimately attuned to the stark feel of the battle, it also meant that commanders were able to seize opportunities with enormous speed. The momentum exploited by Maj John Crosland as he led B Company of 2 PARA on from Wireless Ridge on to Port Stanley could easily have been lost had he stopped to ask permission or even inform the chain of command of his actions: which would naturally force questions and introduce delay to his action. Would the modern battlefield permit such a speedy turn-around of the Brigade Commander's plan to attack Mount Tumbledown if Lieutenant Colonel Michael Scott, CO 2 Scots Guards was forced to show their reconnaissance plans to the brigade headquarters and convince Brigadier Tony Wilson, Commander 5th Infantry Brigade of his logic?

This increasing desire for situational awareness at every level of command affects attitudes to risk and the ability to deal with the unexpected. Modern communications and an increasing culture of after-action inquests creates pressure on the commander to know everything that happens within the span of command. A legal inquest, capable of drawing on vast amounts of information for retrospective analysis in slow time is unlikely to understand the realities of a chaotic, confused and half-understood battlefield from the perspective of a single commander, obliged to make rapid decisions on imperfect evidence. This desire can have a paralysing effect at all levels, as officers are drawn into lengthy analysis of multiple feeds: overwhelmed by a deluge of data resulting from a perceived imperative to be able to show that every possible precaution had been taken, decision-making can be paralysed. Aspiring to have complete knowledge of the battlefield can make commanders deeply risk-averse, as they feel pressured always to know more before making a decision that could result in loss of life. Had Brigadier Julian Thompson known that 2 PARA were so close to culminating as they fought on to Goose Green with little ammunition and no food, would he have continued to assume that the Commanding Officer was content to push on until he asked for help? The frequency with which ISTAR assets were used to watch our own people in Afghanistan suggests a modern commander would be sorely tempted to intervene. How might BCS and modern training overcome this tendency? The following measures/goals would all assist:

*This image was taken from Mount Kent looking westward showing the rugged and difficult ground covered by 3 Para and 45 Commando RM when they marched from Port San Carlos towards Stanley. **Photo: Army News Team, Army HQ, Crown Copyright.***

This image shows a service taking place during Exercise ATLANTIC LEGACY at the Welsh Guards Memorial at Fitzroy.
Photo: Army News Team, Army HQ, Crown Copyright

- *deliberately constrained planning time*
- *forced adherence to sustainable battle rhythms*
- *outcome-based orders with a clear division between prescriptive orders up to the point of certainty and adaptive orders thereafter*
- *training in a communications-denied environment*
- *a ruthless pruning of reports and returns in formation drills*
- *the clear separation of blame and learning in the Defence Duty Holder structure.*

PSYCHOLOGICAL RESILIENCE

The fighting in the Falklands was at very close quarters: soldiers cleared positions with grenades and bayonets. The brutal, personal, and deeply frightening nature of the fighting was continually re-emphasised by those who were there. However, all were at pains to report how seamlessly they transitioned to caring for the Argentine wounded and treating the prisoners well. Indeed, some Argentine veterans whom we met by chance later in the tour stated that their time as prisoners was the first in which they were treated with dignity while in uniform. Simon Carew Price's account of how his Scots Guards veterans of Tumbledown set up a model PW camp and

John Crosland's account of his exhausted soldiers saving the lives of Argentine wounded after Goose Green made a particular impression on those who heard them. The contrast with incidents such as Sergeant Blackman's conviction in Afghanistan and the Baha Mousa case in Iraq led to much discussion of how the soldiers in the Falklands retained their discipline while some more modern ones did not. Many of the veterans held the view that the robustness of their training meant that their soldiers could process what had happened and continue to function, while the shock of going from very safe training to very dangerous operations led to modern soldiers' discipline breaking.

It was, however, acknowledged that 3 PARA suffered from a brief breakdown in discipline in some platoons in Port Stanley and that the continuous exposure to insidious danger in COIN presented a different challenge. In 3 PARA's case, some of the veterans felt that the suddenness of transition from extreme danger to relative safety was the problem; noting that order was restored with the application of strong leadership. Others felt that the combat troops were those who maintained discipline best on the cessation of hostilities,

and blamed disorder on other soldiers who had seen less combat. Nonetheless, psychological resilience as an underpinning part of the moral component was seen as a given. Syndicates discussed whether the shift in emphasis in recruitment and retention from old-fashioned concepts of duty and honour to a focus on 'the offer' contributed to this change. Was the drive to make training a more nurturing experience encouraging soldiers to be more reliant on the chain of command for moral support at the expense of resilience? The different psychological needs of millennial soldiers from the Falklands generation must be understood and drive training design, especially as 'grey zone' conflict will deliberately target the moral component.

'Safe to fail' has become something of a mantra of training, but all too often 'failure' is created by overmatch. Simply being overwhelmed is a limited learning opportunity for a commander. Instead, the veterans spoke much more about the importance of being able to deal with the unexpected – landing in the wrong place, seeing troops where none were expected, resupplies not materialising, blue-on-blue encounters etc. Instead of knowing that one is over-matched and hence becoming fatalistic, the ability to deal with uncertainty might do much to develop the type of resilience that all ranks displayed in the Falklands. In contrast, the pressure on modern exercises to achieve specific training objectives within a fixed time and within limited space works against playing through an unexpected scenario – instead we re-set to comply with drivers' hours policy and start the next serial in order to satisfy the next item on an inflexible Main Events List (MEL). BCS offers an invaluable opportunity to train for its own sake, rather than to meet a prescribed set of criteria to achieve the next collective training level.

Introducing the truly unexpected (a spoiling attack while unloading vehicles before the expected start of the exercise, no enemy on a position that is reported to be strongly held, a live firing phase that is not in the published MEL; above all, an enemy that is truly given the freedom and resource to fight unpredictably and realistically, with a licence to win – more force-on-force training than the usual 3-to-1 friendly-enemy ratio, fighting battles through to a resolution beyond planned exercise timelines) would do much more to develop commanders than a predictable crushing. We must be comfortable assessing tactics against their effectiveness in a given situation. Only by assessing performance in context, rather than simply marking adherence to drills will we understand what has succeeded and failed in a tactical exercise. Robust, entrepreneurial leadership (the

type of which ATLANTIC LEGACY revealed) is essential to ensure success against the odds. In order to generate this leadership style, the comfort blanket of being able to plan in detail must be removed, the demand for constant situational awareness should be reduced (something that will prepare us well to operate against an enemy with decent electronic warfare capability), and junior leaders must be being given clear outcomes to achieve.

The Household Cavalry's experiences of STRIKE experimentation have heavily underlined the need to operate dispersed, with greater application of Mission Command, a fundamental necessity. Moreover, in a major change from Iraq and Afghanistan, potential adversaries' electronic warfare capabilities mean that an all-informed net may not only be denied, but is also likely to present a targeting opportunity to the adversary. To operate effectively in this environment, junior commanders have had to become used to operating with no new direction for extended periods, and more senior commanders have had to make decisions based on comparatively sparse information and limited ability to communicate – all problems that had to be overcome in the Falklands.

CONCLUSION
STRIKE experimentation shows that the future battlefield will be very different to our recent operational experiences. Op ENTIRETY, as its name suggests, re-shaped the whole Army to optimise for COIN. A similarly determined effort will be required to shape us for the next fight. Integrating capabilities at every level in training will help us build the mutual understanding that we need to be able to fight effectively and quickly, with each element understanding its role in enabling the wider group. This will enable us to operate without the precise control to which we have become used in recent years. Indeed, a contested information environment will force us to operate with little and often uncertain information: junior commanders must be comfortable in seizing the initiative and senior commanders will relinquish control. STRIKE has this kind of mission command at its heart. Finally, in the absence of information and operating at reach, all ranks must be comfortable with operating with profound uncertainty, yet knowing that their actions can be seen across the world and influence a whole campaign. We must be sufficiently robust to make do with little support, while being able to retain our humanity.

The lessons that emerged throughout Ex ATLANTIC LEGACY were overwhelmingly based around the ideas of training as we fight, building resilience and risk appetite, and being comfortable with uncertainty. As CFA has made clear in his direction on the context for which we

The Road to Port Stanley: Leading elements of the student body of the Battlefield Study during Ex ATLANTIC LEGACY approach Port Stanley where the Argentine forces surrendered. **Photo: Army News Team, Army HQ, Crown Copyright**

are to train, we are very unlikely to have the luxury of a structured battlefield in which communications work. We must be prepared to fight with deeply imperfect knowledge, in hastily organised teams, and in a hugely uncertain environment. Commanders need to be prepared to operate with limited knowledge of their subordinates' precise actions; we must therefore train commanders to issue orders which are broad enough, but with clear enough boundaries, to allow their subordinates to operate without continual reference to their headquarters.

The Falklands generation did this, and achieved extraordinary success that seemed very unlikely at many points. They did so with humanity, based on little training but on a profound sense of the nobility of the profession of arms that cannot be taken for granted in modern society. We must think deeply about how we instil the Falklands spirit in modern officers and soldiers if we are to make best use of their experiences. Books such as Iain Gardiner's *The Yompers* and the post-operational reports make an excellent starting point, but the experience of talking to veterans was one that the author found to be extraordinarily humbling, challenging, and inspiring.

This panorama image shows the principle objectives for the battle for Port Stanley. From left to right is Mount Longdon, Wireless Ridge, Two Sisters with Tumbeldown in the background along with Mount William and Mount Harriet.
Photo: Army News Team, Army HQ, Crown Copyright

The Falklands Conflict: Early lessons

Graham Thomas looks at the key lessons that were identified right after the end of the Falklands Conflict.

A British sentry wearing full camouflage defends the landing site at San Carlos with a 7.62mm General Purpose Machine Gun. A landing craft from HMS FEARLESS is in the background. *© Crown copyright. IWM (FKD 169)*

While elsewhere in this edition of BAR we have an article on the Lessons identified from Ex ATLANTIC LEGACY, a staff ride to the Falklands that took place in March 2018, we don't have the lessons from the conflict as identified almost right afterwards. There were several reports written a few months after the conflict that could provide some interesting insights to the 21st Century BAR reader. I have tried to distil some of those lessons in order to provide an historical look within a 21st Century context.

The Falklands War is unlike any of the campaigns the British Army has been involved with since that time. Although the first Gulf War and the second Iraq war were similar in that both conflicts were much more conventional in origin. However, in both Iraq wars and subsequent campaigns the British Army was part of a much larger coalition and enjoyed an air supremacy that they did not enjoy in the Falklands. In addition, the land campaign for the Falklands began with an amphibious landing on a large scale, making it unique amongst recent conflicts.

Unlike Afghanistan and Iraq, there was a clear choice of principle that helped to strengthen the UK's resolve and show the Argentine leaders the extent of their international isolation. In some cases, this support came in the form of materiel that was directly beneficial to the task force.

The Falklands Conflict saw the British forces outnumbered on land and in the air. What follows are some of the lessons learned shortly afterwards.

COMMAND AND CONTROL AND CRISIS MANAGEMENT

At the very senior level a small group of ministers, chaired by the Prime Minister, met daily to manage the crisis. Indeed, it was this group that coordinated diplomatic, economic and military strands effectively, establishing clear military guidelines to give commanders conducting the operations a sound foundation, without actually trying to direct the battle from 8,000 miles away.[1]

Men of 2 Parachute Regiment wait on board the ferry NORLAND before the landings at San Carlos.
© Crown copyright. IWM (FKD 851)

One key lesson learnt was the need for good communications between the UK and the task force. This meant that effective satellite communications was of vital importance to the operation. 'There were times during the Falklands Conflict when the flow of signal traffic to the task force threatened to exceed the capacity of the available systems. This never delayed the transmission of important operational messages but it did affect some other traffic.'[2]

What became clear to the task force as the conflict intensified was the need for detailed situation reports from the area of operations, 'both as general background for decision makers in Whitehall and as the essential basis for early and accurate announcements to Parliament and the media on events in the South Atlantic.'[3] As the pace and tempo of battle increased hard-pressed commanders were often not able to transmit as regularly or as quickly as they needed to.

> *It will not, of course, be the intention to impose any detailed direction of actions in the field, which must remain the responsibility of the commander on the spot.*[4]

1   *The Falklands Conflict: The Lessons, London, The Stationary Office, December 1982*
2   *Ibid*
3   *Ibid*
4   *Ibid*

IMPORTANT FACTORS: PERSONNEL

Another important lesson learned shortly after the Conflict was that the resolution, skill and stamina of individual serving personnel had a large part to play in the success of the operation. The Conflict illustrated the importance of physical and mental toughness in each soldier and officer and was amply demonstrated in the battle of Goose Green, the determined defence of the San Carlos beach head, and the night attacks on Argentine positions around Port Stanley that ultimately led to the surrender of the Argentinian forces. It can also be seen in the contributions of the Harrier and helicopter pilots. All of this taking place in extreme weather conditions.

AMPHIBIOUS WARFARE

The lesson of extensive training in amphibious warfare by the Royal Navy and Royal Marines paid off in spades in the landings at San Carlos. The landings demonstrated the Navy's ability to launch and support amphibious operations as well as the ability to adapt merchant shipping to supplement the logistic shipping and the landing ships. This was of vital importance in the Falklands Conflict and 3 Commando Brigade supported by 2 Para and 3 Para were ideally suited for this type of amphibious warfare. 'The success of the Falklands Conflict bore out our confidence in the ability of British amphibious forces to react swiftly and effectively to emergencies in and away from the NATO area.'[5]

LAND OPERATIONS

As already stated one of the key factors in the land operations was the high state of individual mental and physical fitness of the troops on the ground, especially so in the junior officers and NCOs who displayed extraordinary leadership and initiative. The importance of aggressive patrolling and night operations were also seen as a key factor in the success of the land operations. This can be seen in the series of attacks around Port Stanley against a well-prepared and dug in enemy with a clear field of fire. Anti-tank weapons such as Milan proved to be highly successful against enemy prepared positions as was the support from artillery and naval gunfire.

The ability of the 105mm light guns to bring down instant and accurate fire at night or through smoke and fog contributed significantly to the final collapse of Argentine morale. The importance was underlined of all ranks being trained and able to call for fire.[6]

The landings at San Carlos. Soldiers of 5 Infantry Brigade disembark at a jetty from one of HMS INTREPID's LCVP Landing Craft.
© Crown copyright. IWM (FKD 931)

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5   Ibid
6   Ibid

SPECIAL FORCES

Special Forces played a crucial role in the Falklands Conflict. Operating in advance of the main forces they gathered intelligence and conducted harassing raids against the Argentine forces, confusing and disorganising them. Their work in assisting the landing force to come ashore virtually unopposed is a good example of this tactic.

> *The combination in a single patrol of intelligence-gathering skills and the capacity to mount highly destructive raids gives military commanders a flexible and potent weapon. Experience in the Falklands confirmed this, as well as providing useful lessons for the future, particularly about improvements in equipment.*[7]

AIR DEFENCE

Another key lesson was in air defence, where, in the case of the Falklands the battle for air superiority was crucial. The task force faced an Argentine air force of more than 200 frontline aircraft. The Sea Harriers were outnumbered 6 to one, and there was a lack of Airborne Early Warning (AEW) aircraft. Instead, there was a reliance on a mix of different systems for air defence including electronic detection systems, fighter aircraft, ECM, medium and short-range missiles, medium-calibre guns and close-ranged defencive systems such as hand-held missile launchers and rapid-firing guns. 72 Argentine aircraft were shot down using these systems with a further 14 damaged. 'By the time of the final assault on Port Stanley the Argentine air force had been effectively neutralised as a fighting force.'[8]

The medium range air defence missile, Sea Dart, proved its worth in the eight kills it achieved as well as the many attacks it deterred that forced the Argentine aircraft to fly at low altitude making them easier targets for other air defence capabilities.

Before the operation the threat of the Exocet, a sea-skimming missile, was already known and some counter measures existed to try to deal with the threat.

In terms of ship-borne air defence some areas identified for improvement just after the Conflict included:

A Rapier FSB 1 surface to air missile battery operator defending Task Force ships in San Carlos Water keeps watch for Argentine aircraft.
© Crown copyright. IWM (FKD 168)

- *The need for a point defence weapon system for high value units such as Phalanx and other low-level air defence guns and missiles.*
- *The need for more realistic training with the requirement for all Royal Navy ships to be fitted with on-board trainers to optimise high technology systems performance.*
- *Up to date ship-borne command, surveillance radars and weapon control systems.*

In terms of land-based air defence, Rapier was deployed after the landings on the 21st May. Although the conditions for Rapier were severe it was able to provide some low-level land based air defence without its second line support. Although most Argentine air attacks on the task force took place below 100 feet, in poor light and through mist-shrouded valleys, Rapier was able shoot down 14 aircraft and damage another 6.[9]

In addition to Rapier was Blowpipe a man-portable missile system with limited range designed to be carried by one man. In the Falklands it was used against fast-crossing targets, which it was not designed for. Subjected to much rougher conditions than it was designed for it managed to bring down nine enemy aircraft and damaged two more.[10]

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7   Ibid
8   Ibid
9   See The Falklands Conflict: The Lessons, London, The Stationary Office, December 1982
10   According to The Falklands Conflict: The Lessons, London, The Stationary Office, December 1982

LAND WARFARE

Most of the equipment used by the land forces was able to withstand the severe weather conditions and rough treatment during the Falklands Conflict, specifically:

- *Mobility. The ground forces were heavily dependent on helicopters and tracked vehicles for mobility. Scorpion and Scimitar, tracked combat reconnaissance vehicles, performed very well in boggy conditions, covering an average of 350 miles each. 'One vehicle withstood a shell that landed 10 metres away; another ran over a mine that severely damaged the vehicle but left the crew unharmed.' In the demanding conditions of the Falklands the Combat Engineer Tractor proved essential. One notable problem was the extensive use of minefields by the Argentine army. Prior to the Conflict an extensive assessment of the Army's ability to breach these minefields had been rapidly set in motion.*
- *Artillery and Naval Gunfire Support. The 105mm light gun provided the main land-based artillery support for ground forces and was, with its ammunition, mainly deployed by helicopter. Its performance was outstanding and between the five batteries deployed nearly 17,500 rounds were fired with some guns firing more than 500 rounds in 24 hours. Naval gunfire provided excellent support for the ground forces, firing more than 8,000 rounds accurately on Argentine ground targets.*
- *Anti-Armour and Personal Weapons. Effective small arms fire was provided by the general purpose machine gun and the self-loading rifles despite the physical and logistical problems on such difficult terrain presented by the weight of the weapons and ammunition. 'These problems will be eased considerably by the new small arms which should enter service in the mid-1980s. The Simm mortar proved versatile and effective. Although not used in their primary role, anti-armour weapons such as Milan were very effective against strong defensive positions.'*
- *Night Fighting. The Conflict highlighted the need for more night-fighting capability and since the end of the Falklands conflict general purpose night fighting equipment has become much more prevalent throughout the Army.*
- *Combat Clothing. The Conflict took place in harsh and demanding conditions in the Falkland Islands winter showing up several deficiencies in clothing and personal kit.*[11]

AIR-TO-GROUND WARFARE

Several lessons emerged in air-to-ground warfare from both UK operations and Argentine operations most significantly being:

- *Attack on Airfields. Vulcan bombers, flying the longest range bombing missions at the time, attacked Port Stanley airfields with 1000lb bombs, which did not close the runway for more than short periods, underlining the need for much larger, more effective airfield attack weapons.*
- *Defence Suppression. There was a lack of enemy defence suppression capability that exposed Harriers to accurate and heavy ground fire, despite combat aircraft being quickly fitted with ECM equipment, flares and chaff. Radar installations close to Port Stanley were successfully attacked by Vulcan bombers using Shrike anti-radiation missiles.*
- *Close Air Support. The method of forward air control of close air operations was shown to be of limited effect in the Falklands Conflict. During the later stages, ground based laser target marking was used that enabled laser-guided bombs to make direct hits on their targets.*
- *Air Reconnaissance. Another shortcoming of the Conflict was the lack of dedicated air reconnaissance capability that resulted in an absence of precise information on enemy positions. This presented an additional hazard to the ground forces.*
- *Sea-Skimming Missiles. The potential for air launched sea-skimming missiles was identified shortly after the Conflict ended.*[12]

LOGISTICS AND PERSONNEL

Logistics in this operation was crucial and required the specialised skills of many technicians, engineers and managers performing a multitude of roles that did not require detailed direction but were essential to success. Indeed, they were able to respond quickly using well-established procedures and improvisation whenever it was needed. Four lessons stand out:

- *First rates of usage, particularly of ammunition, missiles, and anti-submarine weapons were higher than anticipated.*
- *Second the level of logistic support maintained for 'out of area' operations needed to be considered. All the demands of the task force were met, but only by giving it first call on resources and by using some stocks earmarked for NATO operations.*
- *Third, air-to-air refuelling proved vital in supporting long range operations. For example, using tanker support RAF Harriers flew non-stop from Ascension Island to the South Atlantic. For each Vulcan, Nimrod and Hercules sortie, a large proportion of the Victor tank fleet had to be used because of the relatively small amount of fuel the aircraft carried.*

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11   Ibid
12   Ibid

A Westland Sea King HAS.2 of 825 Naval Air Squadron lowers supplies to men of J Company 42 Commando Royal Marines after transporting then from Port San Carlos to Darwin on the 28th May 1982. **© Crown copyright. IWM (FKD 267)**

- *Finally, the significant contribution of the civil resources was brought home in the smooth and rapid implementation of existing contingency plans to use merchant shipping to support operations, which proved to be a major success story. From passenger liners to trawlers and trade vessels some 45 ships were used in the operation providing vital support across the whole logistic spectrum. Fuel for aircraft, land forces and ships was carried by tankers while liners such as the Canberra and QE2 were transformed into troop carriers along with ferries. Heavy equipment, stores, helicopters and Harriers were carried by cargo ships while others were used as hospital ships, repair shops or tugs. All of them manned by volunteer, civilian crews augmented by small RFA or Naval parties.[13]*

MEDICAL SUPPORT

In the medical and casualty evacuation systems the dedication of doctors and medical staff on board ship or out in the field was outstanding. Within six hours or less, casualties were in surgery and as a result of the skill and expertise of the medial teams more than 90% of the wounded survived. Extensive use was made of helicopters and hospital ships. In the aero medical role VC10 jet liners were used to return casualties quickly back to the UK although within the initial planning of medical support for operations there were some difficulties.

PRISONERS

British forces captured 11,400 Argentine prisoners of war by the end of the conflict. Despite the climate and the operational situation that increased the difficulties in handling so many prisoners, due to the shortage of buildings and the loss of tentage for 4,500 men that went down with the *Atlantic Conveyor*, all prisoners received adequate food, clothing and medical attention. Although many prisoners had to be accommodated in ships, the procedures laid down in the Third Geneva Convention were closely followed. Indeed, this was judged as reasonable by the International Committee of the Red Cross under the circumstances.[14]

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13   *Ibid*
14   *The statistics are from The Falklands Conflict: The Lessons, London, The Stationary Office, December 1982*

Argentine prisoners, carrying their kit, walk out to the airfield at Port Stanley, where a temporary prisoner of war camp was set up by British forces after the Argentine surrender. © Crown copyright. IWM (FKD 367)

Further lessons learned shorty after the conflict included:

- *Despite the enemy having local air and in some cases artillery superiority, more troops on the ground and, where, for the British task force resupply was difficult, night attacks offset these disadvantages.*
- *The state of the enemy should be exploited for psychological operations. In the case of the Argentines their morale ranged from bravado to despair but the opportunities to exploit this were not taken up.*
- *Shock action is required against prepared positions as attacks will not succeed unless they are supported by a heavy weight of fire delivered at a high rate.*
- *Patrolling needs to be meticulously coordinated at formation and unit Headquarters.*
- *Forward in the battle area the light helicopter is crucial for casualty evacuation and ammunition resupply.*
- *An organic flexible reconnaissance capability is required for all infantry battalions.*
- *The fitness and basic skills of the fighting forces, especially of the Marines and Paratroopers, showed how important the training regimes and emphasis on physical training really was.*

- *In order to prepare for war, formation exercises need to be frequent and realistic*
- *At the time, it was noted that there was a serious need to enhance the mobility of non-mechanised infantry.*

CONCLUSION

Perhaps most of all, the success of the Falklands conflict illustrated superb quality and commitment of British forces, the Merchant Navy, civil servants and British industry all of whom pulled together, working tirelessly and unstintingly in support of the operation and the task force. The ingenuity and capacity for improvisation was shown by the Services, defence establishments and British industry along with the quality and reliability of the equipment in harsh conditions.

The Falklands Conflict also showed a government and people of the day united in the will and resolve to resist aggression along with the fortitude to withstand casualties and setbacks. The question is, could we do it again?

The scene at Estancia House during its occupation by 3 Battalion, Parachute Regiment, 31 May - 11 June 1982. Scimitar tanks, Sea King helicopters and civilian transport can be seen in the foreground. Mount Kent is in the centre background. © *Graham Colbeck (IWM FKD 2759)*

Operation CORPORATE - Report of Proceedings

This Report of Proceedings written a few months after the Argentine surrender by Major General Jeremy Moore, then Commander-in-Chief Fleet for Operation CORPORATE, briefly outlines some of the lessons learned from the Falklands campaign from his perspective.[1]

A Wessex 5 and a Gazelle helicopter manoeuvre in close proximity above Goat Ridge while 2nd Battalion Scots Guards dig in during the advance towards Port Stanley. *© Crown copyright. IWM (FKD 320)*

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1   *Operation Corporate, HQ Land Forces Falklands Islands, Report Of Proceedings Overview by Commander-In-Chief Fleet, Major-General Jeremy Moore, 18 October 1982, Army Historical Branch, Ministry of Defence. Originally Restricted but downgraded to Unclassified by Army Historical Branch, August 2018*

What follows here is an overview of a Report of Proceedings of forces under my command during Operation CORPORATE between 2 April and 14 June 1982.

I believe the report points up all the main issues and thus provides a basis for further study where appropriate. Those matters that I wish to stress are:

- **Mounting:** *Whilst 3 Commando Brigade mounted out in a period of three days, a commendably short time, it should not be forgotten that it had available to it all movement resources under the control of Headquarters United Kingdom Land Forces. Its ability to meet its outload deadline of seven days in a general war scenario has not been proved.*
- **Amphibious Shipping:** *The lack of specialised amphibious shipping for Operation CORPORATE caused risks to be taken, and led to considerable complication, particularly during the initial landing, which requires no further amplification here. However, I am particularly concerned about the lack of shipping with multiple spot platforms, the only satisfactory means of achieving really efficient ship-to-shore helicopter operations, which could be as critical in any future amphibious operation as it was during CORPORATE. This observation in no way diminishes my high regard for the performance of both Ships Taken up from Trade and Landing Ships Logistic, all of which supported us admirably within their own capabilities.*
- **Air Defence:** *Of the lessons learnt from the operation that relate to a European scenario, the lack of air superiority is the most prominent in my mind. The fact that an amphibious force is at its most vulnerable from enemy air during the offload period however, is not a lesson learnt from Operation CORPORATE. It has been well known for years. That the United Kingdom/Netherlands Landing Force has no area air defence weapon system with which to assist in the defence of both the amphibious shipping and the landing force is an omission which I believe must be corrected at the earliest opportunity, notwithstanding the expense in manpower and equipment that will be incurred. Operation CORPORATE reminded us of the appalling shipping losses that can be suffered from even unsophisticated aircraft and weapon systems.*
- **2 Star Headquarters**: *Although my Headquarters was hurriedly assembled and lacked the benefit of any work-up, I believe it performed well during the operation, and this is a tribute to the high quality of my staff. Whilst I*

RFA SIR GALAHAD on fire in Fitzroy Cove after an Argentine air attack. Thirty three Welsh Guardsmen were killed in the attack. The ship was later towed into deep water and sunk as a war grave.
© Crown copyright. IWM (FKD 359)

understand the Army is under remit to provide a 2 Star Headquarters for 'out of area' operations I believe that any 2 Star Headquarters that may be required for future amphibious 'out of area of operations' should be based on Major General Royal Marines Commando Forces where the amphibious expertise lies. The contingency 2 Star Headquarters must be properly established.

- **5 Infantry Brigade:** *It was unfortunate that 5 Infantry Brigade had little opportunity to work-up prior to its deployment and to its disadvantage that it was unable to deploy with two of its own battalions (2nd and 3rd Battalions, The Parachute Regiment). As the brigade earmarked for 'out of area' operations its logistic support units, hastily assembled for this operation, were sadly lacking. Attention must be given to the logistic support of 5 Infantry Brigade and, if it is likely to be deployed by sea, staff officers and commanders must attend the Amphibious Warfare Planning Course.*
- **Support Helicopters:** *There is no doubt that support helicopters were a primary contributing factor to the success of the campaign. The professionalism of the pilots exceeded even my high expectations. The command and control of helicopters was not good and their efficiency was degraded as a result. It would appear that a lack of control cells, not only at squadron headquarters but throughout the landing force is the cause. Unless this problem is rectified we will continue to suffer in the future.*
- **Naval Gunfire Support:** *I, in common with the Landing Force as a whole, fully appreciate the contribution made by gunships to the campaign. We are also aware of the sacrifices made. There is no doubt that Naval Gunfire Support caused enemy casualties but more significantly it*

The Battle of the Mountains. Walking wounded of the Scots Guards move toward a Scout helicopter for evacuation.
© Crown copyright. IWM (FKD 317)

achieved a steady reduction in his morale. The operation confirmed 148 Commando Forward Observation Battery's role and the need to retain guns in the ships of the future.

- **Artillery:** *The enemy did not counter-attack during Operation CORPORATE. Had they done so latterly and in our rear they would have found 40 Commando defending the Force Maintenance Area, including all support helicopter assets, without artillery support. The importance of having one battery per infantry unit cannot be overstressed.*

- **Training:** *The lengthy and tough initial training carried out by the Royal Marines and the Parachute Regiment combined with formal Non Commissioned Officer command training was without doubt a major contributing factor to their success. Hopefully, this will be a continuing reminder to those who may, in the future, consider cutting training to achieve short term economies.*

- **Command and Control:** *The common thread throughout most Annexes of this report is deficiencies in command and control. My own Headquarters in Plymouth suffered during the mounting phase from inadequate telephone facilities. Military orders and information were difficult to disseminate due to the lack of radios in Ships Taken up from Trade and Landing Ships Logistic during transit. The offload was complicated for the same reason. The efficient use of support helicopters was degraded by the lack of a proper command structure and insufficient control cells and offensive air support was hampered by poor communications.*

One of the key aims in writing the report was to set out the more critical deficiencies in equipment, organisation and procedures with a view to rectifying them. In doing so a degree of criticism is inevitable but it should be taken in the context of a highly complex operation which was successfully executed. I would be remiss if I did not formally record my appreciation of the magnificent support given to the land forces principally by the Royal Navy but also by the Royal Air Force.

Camouflaged gun positions of 29 Commando Regiment Royal Artillery outside Port Stanley © Crown copyright. IWM (FKD 2029)

An exhausted Royal Marine Commando with his SLR rifle and 140lb pack rests at Port Stanley after completing a remarkable 40 mile march across the Island. The route from the west coast to the east took the Royal Marines through marshes and mountains, included night time marching and was at that time the longest march in full kit in the history of the Commando force. © Crown copyright. IWM (FKD 157)

The Falklands Conflict: The Story

Graham Thomas provides a narrative of the Falklands conflict, concentrating on the land campaign with a short precis building up to the landings.

A Royal Navy Westland Wessex HU.5 (XT755) of 'B' Flight, 847 Naval Air Squadron delivers mortar ammunition to the front line during mountain battles above Port Stanley. **© Crown copyright, IWM (FKD 117)**

BACKGROUND

On 2 April 1982 Argentine forces invaded the Falkland Islands and then South Georgia the following day. Argentina's actions were immediately condemned by UN Security Council Resolution 502 that called for an immediate withdrawal of Argentine Forces occupying the Falklands and for a peaceful settlement. Shortly after the invasion, and with diplomatic tensions rising, HMS *Hermes* and HMS *Invincible*, heading up one of the largest task forces in recent UK history, set sail from the UK for the South Atlantic.

Gradually, the net around the Argentine Forces on the Falklands was tightened. The UK warned the Argentine Government on 23rd April that any approach by the Argentinians on British forces would be seen as a threat and dealt with.[1] It soon became clear, however, that the only way to liberate the islands was by force.

DEPLOYMENT

Despatching a task force in the short space of time available to the UK was, in itself, a remarkable achievement. It was the result of close cooperation between the Services, the Merchant Navy, the Royal Dockyards and commercial ports, the stores and transport organisations of the Ministry of Defence, and Industry. The task force had to be stocked and provisioned for at least three months at sea and included 44 warships; 22 from the Royal Fleet Auxiliary (RFA); and 45 merchant ships whose civilian crews were all volunteers.[2]

The Falklands are situated 8,000 miles south-west of the UK and over 3,500 miles from Ascension Island; but only 400 miles from the Argentine mainland. Self-sufficiency in food, water, fuel, ammunition and all other military materiel was crucial for the Task force if they were to succeed. In addition to this, self-sufficiency, sound transport and logistic planning were hugely important. Crucial to the survival and success of the task force were the ships of the Royal Fleet Auxiliary, the Merchant Navy and the transport aircraft of the Royal Air Force.

Nearly 9,000 personnel, 100,000 tons of freight and 95 aircraft were transported to the Falklands by Merchant shipping with the fuel supply chain transporting more than 400,000 tons of fuel. Indeed, ammunition, dry cargo and fuel were transferred by RFA support ships more than 1200 times throughout the operational period, with an additional 300 transfers by helicopter. At Ascension Island, a joint forward operating base was set up by the British forces. More than 5,800 people and 6,600 tons of fuel were moved through the Ascension

Abandoned Argentine Rheinmetall 20mmAA gun at Goose Green © Crown copyright. IWM (FKD 2841)

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1   *The Falklands Campaign: The Lessons, London, The Stationary Office, December 1982*
2   *Ibid*

Island base by RAF transport aircraft, VC10 and Hercules. 40 supply drops were made by the Hercules to the task force requiring mid-air refuelling for round-trips that lasted in some cases up to 25 hours or more. All of this logistic effort enabled the task force to operate continuously without its ships and aircraft having to return to distant bases for resupply.[3]

FIRST ACTIONS

On the 25th April 1982 Royal Marines along with Special Forces (SAS and SBS) retook South Georgia that had been captured by the Argentines. The first air attacks on the Falklands took place on 01st May, when a Vulcan, accompanied by Sea Harriers attacked Argentine positions. The first Argentine aircraft were shot down on this day as well.

The following day the Argentine cruiser, *General Belgrano*, escorted by two destroyers, was detected by the submarine HMS *Conqueror* and sunk by torpedoes. From that point onwards Argentine naval ships took no further part in the conflict.

The first major British loss took place on 4th May when HMS *Sheffield* was hit by an Exocet missile fired from an Argentine Super Etendard aircraft. *Sheffield's* fuel tanks were hit when the missile slammed into the ship starting several serious fires and sending acrid smoke throughout the central section. With the fires increasing in ferocity, four hours later the Captain ordered everyone to abandon ship. Twenty of the crew were lost.[4]

In order to retake the islands it was necessary for the task force to undertake amphibious landings and San Carlos was chosen as the best site for this task as it provided a good anchorage and was lightly defended. The low hills surrounding the inlet made it difficult for Argentine aircraft to mount effective counter-attacks. For several days members of the Special Forces had been reconnoitring East and West Falkland relaying intelligence back to the task force. On 15th May, under the cover of a naval bombardment, SAS units attacked the airfield at Pebble Island, destroying 11 Argentine aircraft on the ground.[5]

3 Battalion, Parachute Regiment disembark from a landing craft during the landings at San Carlos. © *Graham Colbeck (IWM FKD 2744)*

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3   *Facts and figures within this paragraph are taken from The Falklands Campaign: The Lessons, London, The Stationary Office, December 1982*
4   *Ibid*
5   *Ibid*

THE BATTLE OF SAN CARLOS

On 21st of May under the cover of darkness, keeping to strict radio silence and supported by Naval gunfire, members of 3 Commando Brigade Royal Marines, and 2nd and 3rd Battalions, the Parachute Regiment landed on four beaches in San Carlos Waters. Overhead, helicopters operated continuously, moving stores, materiel and personnel in order to secure the beach head. Before the arrival of dawn and clear blue skies the landing force had established defensive positions and set up anti-aircraft Rapier units. However, the fine visibility also brought sustained and protracted air attacks on the beaches by the Argentine Air Force.

There were several layers of defence for the task force. The outer layer of defence was provided by the Sea Harriers flying combat patrols. The next layer was the 'missile trap' a pair of ships positioned off the northern entrance to Falkland Sound. Then there was the 'gunline' usually a group of three or four ships, bringing to bear every gun they had against incoming Argentine aircraft. The anchorage was the next layer where there would often be up to eight supply ships at any one time. Nicknamed 'bomb alley' small arms and Sea Cat missiles from HMS *Intrepid* and HMS *Fearless* assault ships, along with Blowpipe missiles, machine guns and the Rapier fire units provided this layer of defence.[6]

During the first few days after the landing, the task force suffered loss and damage to its ships from extensive enemy air attacks. HMS *Ardent* and HMS *Antelope* were lost on 21st and 23rd May with 24 casualties. Between the 21st and 24th May six other task force ships were damaged. However, the Argentines did not go unscathed. British forces shot down 15 attacking enemy aircraft on 21st May and another 10 were shot down on 23rd May with a further 18 being destroyed the following day.[7]

The 25th May, saw the Argentine air force redouble its efforts against the task force. Paired with HMS *Broadsword*, HMS *Coventry* was positioned north-west of Falkland Sound.[8] Both ships were to act as decoys to draw enemy aircraft away from the ships at San Carlos Bay. She managed to shoot down three attacking Argentine aircraft before both ships were attacked by two waves of two Skyhawks. Each aircraft of the first wave carried one 1000lb freefall bombs while each aircraft of

the second wave carried three 250kg bombs.[9] The enemy aircraft flew so low that *Coventry's* radar was unable to lock onto them. HMS *Broadsword* was also unable to lock onto the first wave of aircraft. The first bombs to be released bounced off the sea, smashed into the Lynx on *Broadsword's* flight deck, completely destroying it although the bomb did not go off. The second wave of Skyhawks attacked HMS *Coventry*. The ship's 20mm Oerlikon gun had jammed leaving only rifles and machine guns for air defence. Three Argentine bombs from the two Skyhawks slammed into her port side just above the water line. The first bomb destroyed the operations and computer rooms. The second bomb blasted an open space between the forward and aft engine rooms causing uncontrollable flooding.[10] The third bomb did not explode. 19 men died in this attack, however, HMS *Broadsword* rescued the survivors. After this day enemy air attacks on the beach head were much less frequent as the British forces were firmly established ashore and moving forward.[11]

The same day as HMS *Coventry* was lost the merchant ship *Atlantic Conveyer* was hit by two Exocet missiles fired from Argentine Super Etendard aircraft. North east of the Falklands, the ship was carrying much needed supplies to the task force, including several Chinook helicopters. The ship was set on fire when each missile slammed into her. The fires quickly spread throughout the ship and she was abandoned with the loss of 12 lives.

LAND OPERATIONS: DARWIN AND GOOSE GREEN

Once the bridge head was secured, the advance on Port Stanley became the next objective. However, there was a significant threat to any flank attack on Port Stanely from the Argentine garrison and airfield at Darwin and Goose Green. The task of dealing with these two significant enemy positions was given to the 2nd Battalion the Parachute Regiment (2 PARA). Camilla Creek House was secured on the night of 26/27 May by one company of 2 PARA.

As the Battalion closed on Camilla Creek it had its first taste of the enemy as the Argentinians fired a harassing shoot over on the left flank. A daylight reconnaissance of the enemy positions was made, and a Harrier strike

6   Ibid
7   Ibid
8   See Wikipedia entry, HMS Coventry (D118) https://en.wikipedia.org/wiki/HMS_Coventry_(D118)
9   Ibid
10   Ibid
11   The Falklands Campaign: The Lessons, London, The Stationary Office, December 1982

The battlefield at Darwin after the heavy fighting between men of 2 Parachute Regiment and Argentine forces on 28 May. The battlefield is littered with debris, including helmets and blood stained field dressings. It was during this action that 2 Para lost 17 men including their Commanding Officer, Colonel H Jones.
© Crown copyright. IWM (FKD 355)

carried out, during which the FAC party captured the enemy recce platoon commander. It was assessed that there was a strong battalion position controlling the three ridge lines astride the narrow isthmus to Darwin, and as a result the CO planned a 6 phase noisy night attack designed to defeat the enemy in the hours of darkness, leaving the capture of Darwin and Goose Green until daylight. Fire support consisting of HMS Arrow was available until 2 hours before first light, 3 guns from 8 Bty Fd Reg RA located near Camilla Creek and 2 of the Battalion 81mm mortars. Harriers were also to be available from first light.[12]

The assault began on 28th May at 0200hrs with HMS *Arrow* firing on the first line of enemy defences.

The initial assault by A Coy, started at 0635hrs against the enemy platoon at Burnside House, who rapidly withdrew under cover of artillery fire which accurately shelled the main approach to the isthmus. The Battalion main effort was then switched to the right flank with B Coy crossing their start line at 0710 hrs, to attack down the west side of the isthmus. B Coy cleared two positions as they progressed south while D Coy, who were required to pass through B Coy in fact did

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12   *The Falkland Islands Campaign, The Second Battalion The Parachute Regiment History*

not due to enemy small arms fire from positions astride the track by-passed B Coy. D Coy put in an immediate assault and destroyed these positions.[13]

At about 1100hrs, half an hour after first light, the leading two companies, having probably only penetrated a strong screen, had reached a line just short of the Argentinian main defence line; it had not been possible to locate the enemy artillery, which continued to severely harass the Battalion and affect ammunition resupply; it was now daylight and as there was very little cover; HMS Arrow had departed; the weather was too bad at sea for Harrier support: and so the whole momentum of the attack began to slow down as the tide of battle began to turn in favour of the defence. Despite all this A Coy with two platoons fought an intense and bitter battle for the next 2.5 hours to gain a firm foot hold on the Darwin Hill. The method was to systematically destroy each trench in turn using the GPMGs and 66mm LAWS. The limited mortar ammunition ran out, the high wind prevented accurate and safe artillery support and progress was slow…..[14]

D Coy were then inserted down the extreme right flank crawling along the shelving to the beach. A coordinated assault was then launched onto Boca House with Milan the GPMG(SF)s and indirect fire being used to support D Coy. The attack was successful, and at about the same time the defence on Darwin Hill collapsed.[15]

By mid-afternoon the settlement had been secured but now the battalion had to face an advance on Goose Green across open ground of a narrow isthmus against a strongly dug-in, well-defended enemy. Harriers then attacked the Argentine positions in an attempt to soften them up for the advancing Paras. However, Pucara aircraft attacked the battalion and one was shot down by a Blowpipe missile. The Paras faced strong resistance from the Argentines as they advanced. However, they managed to push the enemy back into the settlement where they were attacked again by Harriers that provided much needed support to 2 Para. As daylight faded the situation was assessed:

Captured Argentine prisoners are marched away from Goose Green under guard. **Copyright: © IWM (FKD 363)**

13   Ibid
14   Ibid
15   Ibid

The simplest operational solution was to destroy the settlement and then using rifle companies clear it of enemy. This option was removed when a patrol returned from Darwin with the news that there were 112 civilians locked up in the community Centre in Goose Green. It was clear contact would have to be made with the Argentinians to release the civilians before any siege took place. A plan based on two options was made. The first option would be to offer an unconditional surrender and if that failed then the second option was to continue the siege…

An ultimatum was then written giving the enemy commanders two options a) to surrender and b) to accept the military consequences, but in either case to release the civilians. Two captured Argentinian Warrant Officers were briefed to move down at first light with white flags. Soon after the 2 Argentinians returned and the Acting Co, Bde Liaison Officer, the BC, the Royal Marine interpreter walked down to the airfield, to meet the 3 Argentinian Commanders, who agreed to surrender the Garrison after being allowed to parade.[16]

The mission had been achieved but at the cost of 16 killed and 36 wounded. In the course of the fighting 2 Para killed 250 enemy, captured 1400 POWS, and a variety of heavy weapons and large quantities of ammunition. The civilians locked up the Goose Green Community Centre were released unharmed.

THE ADVANCE TO PORT STANLEY

On 30th May, Douglas Settlement and Teal Inlet were captured by 45 Commando and 3 PARA after a gruelling 50 mile march in inhospitable conditions over difficult terrain.

At first light, we moved in a tactical formation in fighting order only, X Company leading, the remaining 12 kilometres to Douglas Settlement. We took it around 1600hrs, unopposed. The enemy had fled. We dug in a defensive perimeter around the settlement in case of air attack and made best use of a large sheering shed to keep as many as possible out of the biting wind.[17]

On Mount Kent, meanwhile, the SAS had secured a forward patrol base while 42 Commando, using whatever

helicopter lift was available managed to leap-frog forward to secure this position as well as Mount Challenger, the western approaches to Port Stanley. That same day command of all land operations was assumed by Major General Jeremy Moore replacing Brigadier Julian Thompson. He continued with the plans left behind by Brigadier Thompson.[18] The 5th Infantry Brigade (5 Bde) came ashore the following day. They were tasked to advance towards Port Stanley from the South. Argentine forces had evacuated Fitzroy and this enabled 2PARA to secure the area.

The advance continued with soldiers of 1st Battalion 7th Duke of Edinburgh's Own Gurkha Rifles and the rest of 2 PARA moving by sea and air while *the 2nd Battalion Scots Guards, the 1st Battalion Welsh Guards and logistic support units were trans ported to Fitzroy by sea*.[19] Moving large amounts of men and materiel by sea was the fastest way since the loss of the Chinook Helicopters on the *Atlantic Conveyor* meant that bulk air-lifting could not be carried out. This movement by sea kept the momentum going and helped to prevent a major Argentine counter-attack. Elements of the Welsh Guards and the Scots Guards were moved successfully by HMS *Intrepid* and HMS *Fearless* on the nights of 5th and 6th June.

Appalling weather thwarted the deployment of the balance of the Welsh Guards on these nights. However, the following night, 7th June, RFA *Sir Galahad* sailed with support units and the remaining Welsh Guards. As daylight approached on 8th June the cloud lifted and before the last troops had left the two landing ships, RFA *Sir Galahad* and RFA *Sir Tristam* unloading in Port Pleasant off Fitzroy, they were attacked by Argentine Skyhawk aircraft each carrying three 500lb bombs. Both ships were abandoned. At 1400hrs, RFA *Sir Galahad*, still with a large number of men from the Welsh Guards on board, was hit by three bombs that caused several explosions and set the ship on fire.[20] More than 48 crew and soldiers were killed in this attack of which 32 were from the 1st Battalion Welsh Guards.[21]

Sir Galahad was hit at least twice; one bomb/rocket appeared to come in through the open deck hatch and explode on the tank deck: the other hit astern possibly coming through the wardroom and recreation room on

16   *The Falkland Islands Campaign, The Second Battalion The Parachute Regiment History*

17   *Gardiner, Captain I.R., A Personal Account of Operations On the Falkland Islands: X Company, 45 Commando Royal Marines, July 1982*

18   *This reference is from the entry, Jeremy Moore, Wikipedia that cites the obituaries for General Moore in The Times (17 September 2007), The Guardian (18 September 2007), The Daily Telegraph (18 September 2007) and The Independent, (26 September 2007) amongst other sources.*

19   *The Falklands Campaign: The Lessons, London, The Stationary Office, December 1982*

20   *See the Wikipedia Entry, RFA Sir Galahad (1966), https://en.wikipedia.org/wiki/RFA_Sir_Galahad_(1966)*

21   *The Falklands Campaign: The Lessons, London, The Stationary Office, December 1982*

105mm guns of 4 Field Regiment Royal Artillery fire from camouflaged positions on Sapper Hill, two kilometres south west of Port Stanley.
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the starboard side. The effects were devastating, two large explosions, a blinding flash, intense heat, thick black choking smoke and the cries of anguish from horribly burned and wounded men.[22]

Greater loss of life was prevented by the courageous actions of the ship's captain, Philip Roberts who waited until the last minute before leaving the stricken ship, along with her crew and the helicopter pilots who again and again flew into the flames and blinding smoke to save as many as they could.[23]

There was a moment of panic before order was restored. Wounded men were carried up onto the deck followed by the uninjured. Helicopters appeared as if from nowhere to start the rescue operation. Lifeboats and rafts were launched and the evacuation began. All was achieved in a remarkably short time with survivors mustering in company groups at Fitzroy, while 16 Field Ambulance processed and treated the walking

wounded, with assistance from the two Welsh Guards doctors who had flown to Fitzroy from battalion HQ.[24]

THE BATTLE FOR PORT STANLEY: PHASE 1

The first phase of the main battle for Port Stanley began on the night of 11th June despite the loss of men and equipment, particularly helicopters. It began with 3 Cdo Bde attacking Argentine positions while targets to the east were simultaneously pounded by naval gunfire. Initially, British troops surprised the Argentine forces as a result of their vigorous and aggressive patrolling tactics and after a night of fierce fighting 3 PARA captured Mount Longdon, Two Sisters was captured by 45 Cdo and Mount Harriet was taken by 42 Cdo. *British casualties were 22 killed and 44 wounded.*[25] The enemy were not idle and while these positions had been secured they were subject to considerable artillery fire from the Argentines the following day. However, while the enemy attacked with artillery they also received heavy bombardment from British naval guns and artillery fire.

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22   *Battle Account of the 1st Battalion Welsh Guards Falkland Islands 2 June – 14 June 1982*
23   *The Wikipedia entry RFA Sir Galahad (1966),cites a crewman, Chiu Yiu-Nam as rescuing ten men from the bowels of the ship who were trapped by fire. This crewman later received the George Medal. https://en.wikipedia.org/wiki/RFA_Sir_Galahad_(1966)*
24   *Ibid*
25   *The Falklands Campaign: The Lessons, London, The Stationary Office, December 1982*

Men of 2nd Battalion, the Parachute Regiment, march through Port Stanley after the Service of Thanksgiving which took place in Christ Church Cathedral on the Sunday following the Argentine surrender.
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BATTLE FOR PORT STANLEY: PHASE 2

The night of the 13th June saw the beginning of the second phase in the advance on Port Stanley. To the north, 2 PARA executed a very successful night attack and captured Wireless Ridge. At Tumbledown Mountain further south the Scots Guards engaged a regular Argentine Marine Battalion. The fight lasted for several hours with the well-defended dug-in Argentine machine gun emplacements putting up a fierce resistance before the Scots Guards finally secured their objectives.

The assaulting sections moved forward firing 66mm and M79's as they went. The attack became fragmented, and groups of 4 to 6 men moved through the rocks, covering each other and destroying the enemy with grenades and bayonets. The enemy positions were well prepared and supported each other, making the assault a hazardous affair. At one point, Lt Lawrence was wounded in the head and pulled back to safety by LCpl Rennie while under covering fire from 2 others. By about 0815hrs, the company was secure and Tumbledown Mountain was in the hands of the Battalion.[26]

From there, the Gurkhas moved through and took Mount William to the south-east. 20 men were lost in this final phase of the battle.

Shortly afterwards the Argentines began to abandon their positions and discard their weapons. Arriving at the outskirts of Port Stanley British troops were ordered to

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26 *Scott, Lieutenant Colonel M I E., The Battle of Tumbledown Mountain – 14 June 1982*

halt and only fire on the enemy in self-defence to avoid fighting amongst the civilian population in the town. White flags were reported flying over Port Stanley soon after and the Argentine surrender was later accepted by General Moore.

The operation was a remarkable achievement; 28,000 men in more than 100 ships were assembled, sailed 8,000 miles and retook the Falklands in the space of seven weeks. This included the effective neutralisation of the Argentine navy but, perhaps most remarkable, the task force fought off regular air attacks by frontline combat aircraft that outnumbered British combat jets by more than six to one. In hostile weather conditions, under the threat of heavy air attack, the task force put more than 10,000 men ashore, fought several hard bloody battles against a well-dug in and equipped enemy and managed to bring them to surrender in three and a half weeks.

The remains of an abandoned Argentine Tigercat ground to air missile launcher surrounded by its three missiles and their covers, photographed after the Argentine surrender. The system was intended for defence against low flying aircraft. © *Crown copyright. IWM (FKD 875)*

Light instead of Heat: The Gerasimov Doctrine Part One

In this first part of a four-part article, **Dr Steven Main** of the Russian Military Studies Office, examines the Military and Political views of the Russian Chief of the General staff, Valery Vasilyevich Gerasimov.

A Russian T90A Main Battle Tank running through a series of trials at the Second International Forum Engineering Technologies Exhibition held in Zhukovskiy near Moscow June 27 to July 1, 2012. Photo: Vitaly Kuzmin, Creative Commons Attribution-NonCommercial 4.0 International license, Copyright Vitaly Kuzmin, www.vitalykuzmin.net

For too long, there has been much speculation concerning the meaning and importance of one of the articles penned by the current CGS of the Russian Armed Forces, General Valery Gerasimov, namely, *The value of science lies in its foresight. New challenges demand a re-think of the forms and means of conducting military operations.*[1] Obviously, anything written by the Russian CGS should be read and analysed carefully, but this article, unlike many of his, has been poured over at great length and, even today, some five years after its publication, is still the cause of debate and concern for a Western audience, as analysts continue to ponder over its precise meaning.[2] A number of Western analysts have even claimed that it is a 'doctrine' although no Russian analyst has ever apportioned that particular tag to the article in question. Russians are very careful in their choice of terms and it is understandable why the word 'doctrine' is used much more sparingly there than here. Semantics aside, given the impact the article has had on Western analysis of the current activities of the Russian Armed Forces, it is important that not only should it be placed in the broader context of the published writings of Gerasimov, but also examined in terms of the organisational changes which have taken place in relation to the General Staff itself over the past five years.

This should help place Gerasimov's 2013 statement in a clearer light - removing some of the 'heat' in the debate on the precise meaning of the article - and simply reinforce Gerasimov's words to Russian President, Vladimir Putin, in 2012, on accepting the appointment as the new Russian CGS:

> Comrade Supreme Commander! Permit me to thank you for the high trust you have shown me. I think that the entire activity of the General Staff must be directed towards the achievement of one aim - maintaining the combat capability of the Armed Forces at such a level that will guarantee the fulfilment of all tasks placed upon them. And I will do all that I can in order to achieve this [emphasis mine].[3]

In placing the January 2013 address in a slightly broader context, it would be instructive to examine an earlier address of Gerasimov, made in 2010 at the annual conference of the prestigious Russian Academy of Military Science, on which his article is based, delivered on the occasion of the 55th anniversary of the end of the 'Great Patriotic War' (1941-1945 Soviet-German War) - and, obviously, significantly pre-dating events in Crimea, never mind Syria. The 2010 address reveals how Gerasimov, even then as Commander of the Moscow Military District (MD), was thinking long and hard not only about the nature of future war, but how the country needed to learn from its past mistakes, particularly in relation to the opening period of the Soviet-German War, which almost brought about the near destruction of the USSR west of the Urals.

In his opening remarks, he stated that:

> Throughout the development of military art, the military have always had to face two main problems: first of all, correctly predicting the nature of future war and, alongside this, determining the content ('soderzhanie') of military training i.e. what the soldiers need to know and, secondly, how to instruct them, searching out those forms and methods of training, ensuring the practical implementation of the developed views…on the conduct of operations and combat activities.[4]

This being the case, from the point of view of the contemporary Commander of the Moscow MD, the main lesson of the initial period of the war was that it had

1   Gerasimov, Valery, V., 'Tsennost' nauki v predvidenii. Novye vyzovy trebiiut pereosmyslit' formy i sposoby vedeniia boevykh deistviy', Voenno-promyshlenniy kur'er, vol.46, no.8, 26-2-2013; based on his January 2013 address to the Academy of Military Science and largely quoted from by other commentators

2   McDermott, R.N. 'Does Russia have a Gerasimov doctrine?' (Parameters, 46 91) spring 2016, 97-105; Bartles, Charles K., 'Getting Gerasimov right', Military Review, January-February 2016, 30-38; Mc Kew, M., 'The Gerasimov doctrine', Politico, September-October 2017, http://www.politico.com/magazine/story/2017/09/05/gerasimov-doctrine-russia-foreig...Accessed 20-9-2017); Foy, H., 'The General with a doctrine for Russia', The Financial Times, 16-9-2017.

3   Khairemdinov, L. 'Naladit' partnerstvo s OPK', Krasnaia Zvezda, 9-11-1012.

4   Sodoklad komandiushchego voiskami Moskovskogo voennogo okruga general-polkovnika V V Gerasimova. Opyt voiny i puti sovershenstvovaniia podgotovki voisk v sovremennykh usloviiakh', Vestnik AVN, no2, (31), 2010, 41-44; 41.

Russian T80U tanks are ferried across a river on pontoon ferries during the Army Games 2016 Open Water Competition. **Photo: Vitaly Kuzmin,** *Creative Commons Attribution-NonCommercial 4.0 International license, Copyright Vitaly Kuzmin, www.vitalykuzmin.net*

begun in a way which the country's Armed Forces had not specifically trained for:

> *The most dramatic reason [for the debacle of 22nd June 1941] was that the war began in a completely different strategic and operational-tactical environment… compared to the environment in which we had carried out all our pre-war exercises and manoeuvres. Thus, it transpired that our soldiers were not trained in what was demanded by war, particularly in the opening period. Once again, this demonstrates how important it is in peace-time not to lose sight of the fact that war is a two-sided phenomenon, that you cannot proceed solely on the basis of what is desirable and advantageous to you. It is absolutely imperative to take into account the fact that the opponent may adopt measures least suitable for you.*[5]

Particularly for those present at the conference, his remarks that the troops then were not sufficiently well-enough trained to meet the Germans would strike a very deep chord in their collective Russian military psyche, harping back to an older tradition in Russian military

training, dating back to the days of A.V. Suvorov, Russian field commander par excellence of the 18th century, who advised teaching the soldiers what they needed to know in order to fight, nothing more and nothing less. Referencing the experience of the Great Patriotic War, however, Gerasimov continued:

> *When war broke out, some military leaders were victorious, whilst others endured defeat, this depended on a variety of reasons: political aims and economic possibilities of the warring states, the size, method of manning and equipping the armies, their training and morale-fighting qualities, the level of development of military art, the capabilities and organisational skills of the senior military leaders and a number of other concrete factors. But amongst all these, one of the most important factors in determining victory, or defeat, is the level of military training of the troops, matching the nature and demands of the conduct of battle.*[6]

In other words, separating victory from defeat remains, in part, due to the combat training carried out, effectively, in peace time. Further referencing the debacle of June 1941 for

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5   *Gerasimov, Sodoklad…, ibid., 41-42.*
6   *Gerasimov, Sodoklad…', ibid.*

the USSR and its Armed Forces, Gerasimov again placed great emphasis on the importance of the right training:

> A number of objective and subjective factors were not factored in the training of the troops for war and this played a key role in the German Army, in a very short space of time, reaching Moscow.[7]

In other words, train the men in the possibility of having to fight the unexpected, as well as obviously training them in the more conventional, traditional, aspects of combat operations. This is even more important now than it was in 1941, given the very unusual look and feel of contemporary warfare. No army can train simply on past successes, but has to be trained and equipped, physically, psychologically and intellectually, in the non-traditional, non-conventional, ways of fighting war. In the same address Gerasimov outlined how, once the Red Army had recovered from the catastrophic disasters of 1941-1942, it re-learnt how to fight:

> In two years of war, our army…learnt how to fight and the highly-organised and trained German Army, with its educated officer corps, began to suffer one defeat after another.[8]

Towards the end of his address, Gerasimov also pointed out the necessity of:

> Taking into account the experience of local wars of the past few decades, particularly the experience of the two wars in Iraq, NATOs' war against Yugoslavia in 1999... In comparison with the Great Patriotic War, local wars, particularly the wars of recent decades, have a significantly new content ['soderzhanie']… evident by the new ways and means of using military operations. It should also be noted that each successive local war is different from the previous one. This has been brought about, in the first instance, by evolutionary development of the means to wage war, the appearance of newer strike weapons, based on the latest achievements in science and technology, which automatically introduce changes in the content of the means and forms of armed conflict.[9]

Thus, like many of his past predecessors in the post-Soviet General Staff, Gerasimov was simply re-stating much of what had already been discussed and written about: adapt to the new ways of waging war, or risk

suffering a modern re-run of June 1941: the 'near national death' military catastrophe, which almost brought about the destruction of one of the world's great powers in the matter of a few months. In his concluding remarks, he stated:

> In concluding my address, I wish to emphasise that today, when the nature of armed conflict is changing, when new means for preparing and conducting combat operations are being developed, one cannot avoid taking into account the experience of the Great Patriotic War.[10]

For many in attendance, such a statement would be simply re-stating the obvious: do not repeat the mistakes of the past, but learn from them and adapt the training to meet the potential new threats, as revealed by the previous military conflicts of the past 20 years, or so. This blend, involving studying and analysing past military mistakes, as well as the more modern experience of combatting and conducting military and conflict operations in today's world, is something which most Western military observers of Russian military affairs either do not understand, or simply ignore.

In many ways, the West commits a big interpretive mistake in understanding contemporary Russian military thinking, constantly undervaluing the importance of analysing Soviet military experience in the development of Russian military thought and practice in the early 21st century. The largest country in the world, one of the major military powers pre-1941, with a developed military capability, centralised military-political and political-economic machine, was almost destroyed by a non-nuclear, conventional military attack. This is neither the time nor the place to detail how this near national catastrophe came about, or how it was averted, but there can be little denying the importance and significance *still* of those events on the Russian military and political psyche. Political hue aside, the 1941 contemporary political and military leadership of the USSR was culpable in almost bringing the country to its knees and the brink of national extinction. Thus, it should come as no great surprise that, even today, there is so much in place, both physically and *intellectually*, to prevent such a repeat of the events of 1941. The lack of intellectual readiness was one of the features in his address to the Academy of Military Science in 2013, subsequently known better here as the 'Gerasimov doctrine'. By this stage, Gerasimov had already been appointed CGS,

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7   Ibid., 42.
8   Gerasimov, Sodoklad… Ibid., 43.
9   Gerasimov, Ibid., 44.
10   Gerasimov, ibid.

following the removal of both Serdiukov (Minister of Defence) and Makarov (CGS) at the tail end of 2012.[11] It is worth reflecting again on the full title of his address, as it hints at the need for military thinking to focus on meeting future security challenges: 'the value of science lies in its foresight. New challenges demand rethinking the forms and means of conducting military operations.'[12]

Within the first few opening sentences of his 2013 address, Gerasimov outlined the overall *leitmotif* of his presentation:

> *Wars are already not declared and, once they have begun, no longer follow the traditional path.*[13]

Postulating that the 'Arab Spring' could be an example of the new type of warfare, (remember that the address was delivered in 2013), he was quick to emphasise that the consequences of the non-traditional type of warfare could be just as costly as the more traditional variant:

> *In terms of the scale of victims and damage [inflicted], the catastrophic social, economic and political consequences, such conflicts of the new type are comparable with real war itself and 'the rules of war' themselves have changed in essence. The role of non-military means to achieve political and strategic aims has grown and, in a number of instances, in terms of their effectiveness, significantly exceeded the force of arms.*[14]

As shown in his 2013 address, Gerasimov was very keen to emphasise, once again, the important role of training and psychologically preparing the Army for future conflict:

> *What is contemporary war, how should we train the Army, how should it be armed? Only when we have answered those questions can we then define the parameters for the construction and development of the Armed Forces for the long term. In order to achieve that, we will have to clearly define the means and methods of their future use.*[15]

Analyse, train and implement. For instance, in another section of the address, he quoted how the Soviet Army had learnt from the experience of partisan units in the 'Great Patriotic War', how the Russian Army had learnt

from the experience of combatting irregular military units, operating in Afghanistan and Chechnya. In relation to the experience of the Soviet Army in Afghanistan, for instance, he stated that:

> *I want to underline that, in the course of the war in Afghanistan, specific ways and means of conducting military operations were born [there]. At the heart of the latter were surprise, high-tempo [of operations] going forward, skilful use of tactical air drops ['desant'].*[16]

Thus, whilst many in the West may only think about, and interpret accordingly, the *failure* of the overall Soviet military intervention in Afghanistan, the likes of Gerasimov *et alia* see value in analysing where things not only went right, but where they went wrong. It would appear that, through a combination of examining historical interpretation and analysis, Gerasimov has been and is still pursuing a course of not only making the Russian Armed Forces an effective fighting force, in the conventional sense (Syria), but also in a non-conventional, conflict situation (Crimea). In the relevant sub-section, analysing Soviet military thought on the eve of the outbreak of the Great Patriotic War in June 1941 entitled, 'you cannot order the generation of ideas', he stated:

> *It is impossible to compare the [current] state of native military science with the flowering ['rassvet'] of military-theoretical thought [which took place] in our country on the eve of the Second World War.*

> *Of course, there are objective, as well as subjective, reasons and it would be wrong to blame one concrete figure…It was not said by me that it is not possible to generate ideas by order. Whilst I agree with this, I cannot but recognise another fact: then there were no Doctors [of Military Science], no candidates [of military science], no academic schools [of thought], no tendencies ['napravleniia']. There were extraordinary individuals with clear ideas. I would dub them fanatics of science, but in the best [possible] sense of the word. Perhaps today we lack such people.*

> *Take, for example, divisional commander Isserson who, despite the prevailing pre-war view, published a book [entitled] 'new forms of warfare'. In it, this Soviet military theoretician, warned: 'war is no longer*

11   Khairemdinov, L., 'Naldit' partnerstvo s OPK', Krasnaia Zvezda, 9-11-2012.
12   Gerasimov, 'Tsennost'…ibid.; 1-7.
13   Gerasimov, ibid., 1.
14   Gerasimov, 'Tsennost'…' ibid., 2.
15   Gerasimov, ibid.
16   Gerasimov, ibid., 4.

*This image shows Russian paratroopers dropping from an Il-76 aircraft during one of the stages of the 137th Guards Airborne Regiment, 106 Guards Airborne Division tactical exercises. This stage included over 800 personnel and 6 vehicles undertaking parachute landings from IL-76MD aircraft. Photo Vitaly Kuzmin, Creative Commons Attribution-NonCommercial 4.0 International license, **Copyright Vitaly Kuzmin, www.vitalykuzmin.net***

declared. It begins much earlier than deployment of armed forces, mobilisation and concentration [of forces] takes place…not after…the declaration of a state of war, as took place in 1914, but unnoticed, gradually taking place long before [formal declaration].[17]

Not heeding Isserson's prophetic warning cost the country dear:

Tragic was the fate of 'the prophet in his own land'. Our country paid a heavy price in blood for not listening to the conclusions of the Professor from the General Staff Academy. From this [event] one can conclude that a dismissive attitude to new ideas, the non-standard approach, [dismissive attitude] to a different point of view in military science is unacceptable. No less acceptable is a dismissive attitude towards science from practitioners [of the military art].[18]

As stated earlier, ever-mindful of the opening period of the Soviet-German War, Gerasimov was also

critical of the contemporary (remember the article was published five years ago) state of Russian military thinking. Quoting from Isserson's work of 1940 allowed Gerasimov to berate the poverty of Russian military thinking in 2013, further proof of how, even amongst the senior Russian military command, the past can be used to instruct the present, never mind the future. Isserson's work was also used as a clear indictment not only of the current state of Russian military thinking, but also as a warning of the potentially very dangerous consequences of poor strategic and tactical thinking: psychologically disarmed and tactically poorly trained for the upcoming conflict, the Russians were caught out by the German invasion of June 1941 and, as a direct consequence of that, almost lost Moscow itself within the space of four months of the launch of 'Operation Barbarossa'. Despite the Blitz, London was not going to collapse, (unless there had been a full-scale land invasion to complement the brutal and prolonged German aerial onslaught), but the Russians came within a hair's breadth of losing Moscow.

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17   Gerasimov, 'Tsennost'… ibid., 7.

18   Ibid.

In emphasising how close the country came to losing its capital, Gerasimov is also subconsciously, referring back to an older fear in the country's military-political thinking: the fear of the danger of stagnation or, worse, lagging behind the advanced countries both in terms of theory and practice in developing new ways of looking at and, more importantly, waging war, especially in today's rapidly changing geo-strategic environment. In his view, not only was it a question that the Russian Armed Forces had to be physically and technically ready for the new battlefield, but also *psychologically* and *intellectually*. In other words, war is fought, more so now than ever before, not only between bodies and machines, but also between hearts and heads. Further, as the experience of the 1941-1945 Soviet-German War clearly testified, the 'combatant' does not necessarily have to be a man or woman in uniform, but could easily be a 'civilian'. This is dangerous, as it distinctly implies that anyone can now be labelled a 'combatant' and that all could be legitimate targets, if the state feels threatened, either internally or externally. Social media, as demonstrated in the so-called 'coloured revolutions', which broke out in so many ex-Soviet republics in the 1990s-2000s, 'proved' that no regime was safe from potentially regime-changing force. Ever since becoming CGS back in 2012, Gerasimov has been keen to emphasise the importance of the military academies

A BTR-82A Personnel Carrier moves forward during the 03 May rehearsal for the Moscow 2018 Victory Day Parade. Photo: Vitaly Kuzmin, Creative Commons Attribution-NonCommercial 4.0 International license, Copyright Vitaly Kuzmin, www.vitalykuzmin.net

to think 'out of the box', so to speak, so that, in future, the country's military and political leadership are not caught out by any crisis, internal or external, and have all *information* to hand in order to adopt an appropriate response, hence the creation of the National Defence Management Centre of the Russian Federation.[19]

In the form of the USSR, Russia already has the historical experience of knowing what a de-capitating, conventional strike is all about; to put it mildly, it has no intention of being caught out like that again. Thus, since the parameters of war have changed, so too must the tactics and training of the officers and men: both Crimea and Syria show how much has qualitatively changed in Russian military thinking and operational use since Gerasimov took over as CGS in 2012: the next part of this series will detail Gerasimov's most recent statements on the nature of war and conflict in the 21st century.

*Mi-28N Helicopters of the Russian Air Force aerobatics team, Berkuti, show off their skills during the 100th anniversary of the Russian Air Force at the Zhukovskiy LII airbase August 2012. **Photo: Vitaly Kuzmin, Creative Commons Attribution-NonCommercial 4.0 International license, Copyright Vitaly Kuzmin, www.vitalykuzmin.net***

19   *Steven J Main, 'Is Russia preparing for War?' (British Army Review, No.164, autumn 2015, 27-35).*

Ambiguity: The Kremlin's Timeless Weapon

Captain Robert Atchison, HQ ARRC, provides an analysis of the way the Kremlin in Russia uses ambiguity and information as weapons.

The Russian Institute for Strategic Studies in Moscow.
Photo: by Tempus, Creative Commons CC0 1.0 Universal Public Domain Dedication, Wikipedia

Ambiguity is defined as 'the quality of being open to more than one interpretation; inexactness'.[1] Numerous modern warfare journals refer to the 'hybrid' nature of Russia's contemporary, full spectrum, multi-level strategies and tactics. Stating they are hybrid suggests they are new; they are not. What is new is the way the Kremlin has harnessed modern technology to challenge the West in an area it has dominated since 1991 - the information environment. The Kremlin's strategic theme is more accurately described as 'ambiguous warfare'.

When the Kremlin looks to the West, it sees a centre of gravity in our ability to form military alliances to protect our vital, collective interests. The purpose of ambiguous warfare is to damage or degrade this capability. It encourages the West to view its adversaries as undefined, constantly morphing, unique entities. To effectively counter attack, responses must be tailored and targeted to be effective. The Kremlin's rule of Russia is authoritarian[2,3] enabling dynamic action at a geo-strategic level. The West, however, is ruled by consensus. Delays are common due to the democratic nature of decision-making. These delays are exploited to divide public opinion, leading to a greater demand on resources from contributing nations. The extra demands lead to the degradation of public and therefore political consensus that manifests itself in slower political decision-making.

The West has seen in Syria over the last three years how Russian media, controlled by the Kremlin, has told untruths about its campaign, telling the wider world one story and the Russian people another. For example, the Kremlin repeatedly highlights how accurate its weapons are via state controlled media (RT and SPUTNIK), however in reality 80% of all Russian munitions dropped or fired are 'dumb' and have no guidance systems.[4] Taking these two themes further, the establishment of context is vital to understand how the Kremlin divides the information domain. Control of context enables the planning of information operations, critically including

the assumption that information given to one target audience will proliferate to another, rarely controlled and not always by design. There is an acceptance that the informational effect may evolve both positively and/or negatively[5]; it is this uncertainty that is relished within the Kremlin, where the West seeks to avoid it at all costs.

The Kremlin has successfully established echo chambers[6] at every level, from the geo-strategic to personal and tactical, simultaneously messaging into all of them. Importantly, their modern cyber soldiers are given extensive freedoms to prosecute their mission[7]; the Kremlin is, however, not the exclusive customer. Global use is increasing, both state and non-state sponsored, as their tactical utility becomes evident through a number of nations' and organisations' experimentation. They are not constrained by international law or obliged to tell the truth, something their opponents are subject to. Figure 1 depicts a personal echo chamber. Critically every person has one and it can be affected if targeted correctly. Secondly, the Kremlin does not seek to convert the world to its own way, but to any other than the current. Business theory conceptualises this in FUD[8]; Fear, Uncertainty and Doubt. Spread mistruths about a competitor's product to undermine consumer confidence. In political theory this is understood as 'divide and rule'.

Figure 1

1   Definition provided by Google define
2   Global State article, 'Putin's new authoritarian Russia'
3   Article - Authoritarianism and Foreign Policy: the twin pillars of a resurgent Russia
4   The Guardian article, 'Russia suspected of using dumb bombs…Syria War Crimes'
5   Gibson, Dennis, and Moore, Stephen, 'Retaking the high ground'.
6   Forbes Are You In A Social Media Echo Chamber? How To Take An Objective Look, https://www.forbes.com/sites/quora/2018/02/28/are-you-in-a-social-media-echo-chamber-how-to-take-an-objective-look/#67050ca561f9
7   Time, This KGB Chief Rang the Alarm About Russia-U.S. Cyberwars. No One Listened, http://time.com/5210728/russia-u-s-hacking-cyberwar-kgb-soviet-union/
8   Changing Minds, Fear, Uncertainty and Doubt (FUD), http://changingminds.org/disciplines/sales/articles/fud.htm

*Moscow Kremlin and Bolshoy Kamenny Bridge in the late evening. **Photo: Andrey Korzun, Creative Commons Attribution-Share Alike 4.0 International License, Wikipedia.***

The scale at which The Kremlin operates is well known, however, its behaviour in the information domain draws distinct parallels to Mao's three phased insurgency tactics[9], these phases are; organisation and preparation, terrorism and guerrilla warfare and conventional warfare.

PHASE ONE

The Kremlin has created capable organisations, both nationally and internationally, that enable the preparation of the 'cyber ground'. Information is fed into echo chambers already established in targeted audiences (countries, social demographics, ages, social media channels, to name but a few), introducing, reinforcing or manipulating narratives depending on the mission and at a time of their choosing. The mission's time scale is often irrelevant, it can vary from hours to years. An enemy will seek to set conditions that are favourable in a battle space that is yet to be realised. The preparation conducted by cyber soldiers relies on the fact that information must remain relevant to the target audience[10], sometimes even allowing counter information to propagate and 'trend' in the information space. Context is subjective; a simple example is the use or misuse of punctuation: the panda eats, shoots, and leaves versus the panda eats shoots and leaves. Context one is violent and loud, the second simply calorific consumption. Correct punctuation is now almost voluntary[11] and with its decay, misunderstanding spreads and leads to ambiguity.

In Syria the Kremlin understood that after years of conflict, many media users were ready to support anyone with a consistent and believable message no matter how abhorrent it might be.[12] The use of chemical weapons was a red line for President Obama's administration[13]; the repercussions on those who used such weapons clear. However, after numerous chemical

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9   Parallel narratives, 'The three stages of Mao's revolutionary warfare', https://parallelnarratives.com/the-three-stages-of-maos-revolutionary-warfare/

10 Marchetti, Jen, Entrepreneur, How Marketers Must Evolve to Remain Relevant in a 'Post-Millennial' World, https://www.entrepreneur.com

11 Seen in todays printed press headlines, http://littlecalamity.tripod.com/Text/Newspaper.html

12 Post operation interview with Capt Richard Luckyn-Malone 77X.

13 Engel, Pamela, Why Obama reportedly declined to enforce red line in Syria after Iran threatened to back out of nuclear deal, Business insider, http://uk.businessinsider.com/obama-red-line-syria-iran-2016-8

Members of the Massachusetts Air National Guard participate in an interactive combat simulation in the Virtual Reality Center at the University of Arkansas at Little Rock, May 2, 2014. Senior leaders from the National Guard toured the University's Emerging Analytics Center and learned about the partnership to allow students at the National Guard Professional Education Center an opportunity to earn their bachelor's, master's or post-doctoral degrees in information technology. Photo: Captain Kyle Key, Released

attacks on civilians little physical action followed. Furthermore, the West's diplomatic position was often too complicated to be widely understood and remained unconvincing to the Syrian population. In contrast, the Kremlin synchronised its information campaigns with compelling and convincing physical action. This linkage of the physical and informational domains gave the Kremlin more credibility and a larger share of the regional audience.

PHASE TWO

Terrorism and guerrilla warfare: Terrorism[14] is 'the unlawful use of violence and intimidation, especially against civilians, in the pursuit of political aims'. The initial deployment of Russia's 'little green men'[15] during the annexation of the Crimea in 2014 was, by the definition above, an act of terrorism. Executed at a time when the West was focused on the withdrawal from Afghanistan[16]; the 'ground' was prepared. The West's public had little appetite for foreign intervention, empowering the Kremlin to act in an expansionist manner towards its neighbours. Strategic action supported by the Kremlin's cyber soldiers, using methods targeted at the tactical level (individuals or small groups), extortion, kidnapping, bribery to name a few; all are highly effective in part thanks to today's, social media effected, information space. The 'weaponising' of information facilitates the continuous dynamic targeting of an adversary's moral component; its reach almost unlimited as global information consumption increases.

PHASE THREE

Conventional Warfare: The Kremlin is currently subject to UN and EU sanctions[17] that are crippling its economy; economic warfare is a tool of conventional warfare for the West as it is one of its strengths, for Russia it is not. The virtual domain (which includes cyber activities) enables a new form of warfare, not visible to many, to be waged at scales that are unimaginable. The enduring nature of economic war[18] indirectly effects the global population in the cyber and information domains, both of which remain conceptual.[19] The modern aggressor lacks a physical presence, meaning any act is often difficult to attribute in a timely manner to an individual let alone a state.[20] During the Cold War there were proxy conflicts, conventional by nature but detached from the superpowers' populations by geography. We see the same today in Georgia, Ukraine, Moldova, Yemen, Syria, Lebanon and Libya to name a few. The superpowers are often on opposing sides, both geographically and ideologically, however the effect of geography is negated more than ever due to the speed at which information proliferates.

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14   *Google definition*

15   *See Engel, Pamela, Why Obama reportedly declined to enforce red line in Syria after Iran threatened to back out of nuclear deal, Business insider*

16   *Author deployed on Op HERRICK 20 (2014), monitored situation.*

17   *International sanctions during the Ukraine Crisis, Wikipedia, https://en.wikipedia.org/wiki/International_sanctions_during_the_Ukrainian_crisis*

18   *Henderson, Hazel, Building a win-win world: Life beyond global economic warfare, McGraw Hill Education, New Edition, October 1997*

19   *Nearly impossible to define in a physical sense or make easily relatable*

20   *Rid, Thomas and Buchanan, Ben, 'Attributing cyber-attacks', Journal of Strategic Studies, Vol 38, 2015*

Critically, as Mao did, when the Kremlin finds a weakness in the information space it exploits. When it finds strength it adapts, harassing and seeking another avenue of attack (changing it's narrative until it finds traction). This tactic allows the Kremlin to out-manoeuvre the West in the information space, leading to the erosion of public confidence in leaders and organisations, paralysing the enemy's decision makers.[21] CGS's RUSI speech, 22 Jan 18, spoke about the speed of recognition, the speed of decision-making and the speed of assembly: one of the first commanders to recognise this need in the information space. Without it we will give the Kremlin a victory, potentially before Western soldiers leave their barracks.

Op CABRIT 1 saw the establishment of the UK-led enhanced Forward Presence Battle Group (eFP BG) Estonia in Tapa. The deployment was, according to the Prime Minister of Estonia one of the four most important events in Estonia's recent history and is a statement reinforcing NATO's indivisible nature and willingness to act. The BG's understanding of Estonia was low, as expected, but what was lower was the understanding of the information environment and the role the 'media' played. The Future Force Concept (FCC) states:

Russian Forces Railway exercises saw 38 separate railway brigades construct a floating NZHM-56 railway bridge with a length of 1 km across the Volga. Photo: Ministry of Defence of the Russian Federation, Creative Commons Attribution-Share Alike 4, Wikipedia

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21   Schectman, Captain Gregory M., USAF thesis, 'Manipulating the ooda loop: the overlooked role of information resource management in information warfare',

In particular we lag well behind in our ability to exploit the information environment and in the full integration of space and cyber domains.

Enabling joint action across the five domains is the baseline for operations in all future conflicts. The UK's layered operational design eases planning from BG to Army level by dividing the battle space and giving each an area of responsibility. The key is the deep battle. The deep battle degrades a numerically superior enemy to a point at which success is likely. How do you use cyber/information in the deep battle? The controlling and manipulation of physical traffic patterns[22] is a simple example (assuming most conflicts will be either littoral or urban due to population dispositions). To hamper an enemy's logistics, a commander may attack convoys from the air. However, the air domain is contested by 5th generation aircraft on both sides and attacks may be costly.[23] Therefore the commander may instead choose to change traffic patterns; sowing chaos into the civilian population, consuming the enemy's combat power and forcing him to reallocate resources to ensure MSRs are kept clear. Add a localised misinformation campaign and the enemy could face choreographed chaos in the population and in some cases amongst its troops. The enemy is subjected to 'Black Mist'[24] - the temporary psychological disorientation of a group through the delivery of deliberately ambiguous information to create chaos (controlled or otherwise) giving the commander time to act.

The Kremlin's strength lies in its patience and ability to collect information. For example; the eFP BGs were subjected to Kremlin misinformation after the North Atlantic Council announced the BGs would receive the Freedom Award in 2017.[25] The Kremlin controlled channel, SPUTNIK, released an article that stated that in one week BG soldiers were caught drunk, had caused damage to public property, had rolled a vehicle and finally had been shot at by a local farmer during a pan NATO exercise. The events SPUTNIK highlighted took place over 4 months, not 7 days[26]; the details of such events were and still

are mis-reported. The story gained little traction across all internal Russian audiences and failed to proliferate into western media. After a week it had little more than 300[27] shares on Facebook. The MoD and NATO did not counter the article publically. The reason - on average, basic Kremlin botnets are between 150 and 400 'profiles' in size.[28] It was therefore assessed that the content was circulated by a botnet with very little human interaction. Countering the story would have compounded its effect and provided the conduit for the message to reach audiences it would not have otherwise.

Information operations are the marketing of an idea.[29] NATO and the British messaging must be timely and targeted. This granular detail enables planners to focus on incremental gains that, when planned in tandem with conventional operations, will not only enable manoeuvre but also prepare the ground for future operations. Ambiguity will remain a part of the future battle space as practitioners have a limited intellectual capacity[30] and are subject to numerous physical factors - examples are emotions, fog of war and fatigue. Ambiguity is not always misinformation. Utilising ambiguity in the face of the enemy will be a significant capability in future deep operations, its utility extends from the reinforcement of tactical deception to the enabling of strategic dialogue (feints to peace talks).

Ambiguity is timeless, unconstrained and is subject to simultaneous interpretation. When information is interpreted, it is done so subjectively and based on the interpreter's experiences, group social norms and moral state.[31] The timeless and uncontrollable nature of ambiguity is at odds with peoples' view that everything has constraints, for example the truth is a constant. It is assumed that when the truth is established then the discussion is complete. However, today the Kremlin continues narratives past this point and creates ambiguity, which can then become self-perpetuating. Just as intelligence has counter-intelligence, so too must future information operations. For example - the

22   *Human, ground vehicles, aircraft, shipping, etc*

23   *UK Government, Joint Concept Note 3/12, Future Air and Space Operating Concept, replaced by JCN 1/17, Future Force Concept (OS) published by DCDC, July 2017*

24   *Author defined*

25   *Sputnik, 'Medal for Knavery, Estonia to award rampaging NATO troops with military honours', https://sputniknews.com/europe/201707061055293887-estonia-nato-medal/*

26   *Author was manager of event in 5 Rifles BG and tracked live media feeds.*

27   *Author's research during event*

28   *Author worked with EST, UK and FRA OGDs on assessment*

29   *Davis, Ben, 'What exactly is marketing ops?', Econsultancy.com blog, 20 Jan, 2017*

30   *The Intellectual 'Bell Curve'*

31   *Fanguy, Will, 'Seeing is believing: 5 studies about visual information processing', Piktochart.com blog, https://piktochart.com/blog/5-psychology-studies-that-tell-us-how-people-perceive-visual-information/*

Chinese fleet sailing to St Petersburg to take part in joint exercises with Russia's Baltic fleet during the summer of 2017.[32] The Kremlin chose to release articles highlighting its 'special' relationship with China, with whom it shares military technology and to a degree ideology. However, the UK has a close relationship with Beijing, focused on economics primarily but military exercises have taken place. The ambiguity of the Kremlin's message in this case was that Russia has a uniquely special relationship that others do not but without stating directly its exclusivity, merely suggesting it. To combat this messaging, a cross government/alliance response is required. This broad response adds credibility and maximises the use of channels already open to consumer audiences. For example, the UK could highlight its operations with the Chinese Navy off the coast of Somalia.[33] Immediately the Kremlin's message is diluted and consumers are encouraged to investigate alternative views. Even so, some audiences remain incredibly difficult to reach. These are populations that fundamentally believe messages they receive from the Kremlin. Through long term planning and better targeting, the selected audiences can be equipped with the tools to look elsewhere for their alternative truths.

Ambiguity will endure, however the weaponised form used by the Kremlin can be countered in a number of ways. Firstly, by controlling the context in which information is interpreted. For the Kremlin to succeed it does not need to convert audiences to its worldview, simply any other than the current. Divide and rule. When the West addresses Russia it addresses Russia as a whole - all audiences, populations, ethnic groups - suggesting that the West thinks Russia is one homogenous mass. The Kremlin's approach is more sophisticated; it singles out organisations or people, making it personal. The Kremlin succeeds in subtly signposting the audience's attention to where they want it to be, manipulating and misinforming as needed.

Secondly, the West must continue its transparency when combating ambiguity. The UK and the West must avoid criticising Russia as a whole and instead target and refine responses, failing to do this highlights insecurities and a fundamental lack of understanding of Russia and its people. In Russian politics, a strong Russia is seen as a stabilising force in the world. They will only be content when Russia feels respected by the rest of the world.

Lastly, the West must be equipped at every level to co-ordinate efforts and embrace the complexity of ambiguity. As the Chief of Swedish Defence Forces, Major General Karl Engelbrektson stated, 'war is a contest of will'[34] or as stated by General John 'Mick' Nicholson 'war is staying power'.[35] Maintaining public support is crucial as it is indivisible from political will. The five domains must act in synergy across all military, government and alliance levels to contest and win future conflicts. The information war manifests itself as the passage of information, by any means, to the public on both sides of future conflicts. Owning at least part of this domain will affect all future conflicts and should be a key tenant of strategic planners.

32   Russia Today, Chinese military vessels enter Russia's Baltic for 1st time as joint drills kick off, https://www.rt.com/news/397096-china-russia-sea-drills/

33   Lanteigne, Marc, Fire Over Water: China's strategic engagement of Somalia and the Gulf of Aden crisis, The Pacific Review, Volume 26, 2013

34   Speech as part of the 2018 International Armoured Vehicles Conference London.

35   Nocolson, General John W., US Army General's speech on Op INHERENT RESOLVE during the 2018 International Armoured Vehicles Conference London.

On command exercises an antenna module is set up by 175-control brigade for command-and-staff teaching (EXERCISES) for connection of the southern military district. **Photo: Ministry of Defence of the Russian Federation, Creative Commons Attribution 4.0 International license, Wikipedia.**

In God we Trust: Others must bring data

Captain Michael Chapman, SGMI, provides a unique insight into the manipulation of data analysis and statistics, recommending that important and relevant insights can be generated using only simple mathematics and the tools available to any staff officer.

Scientists at the Defence Science and Technology Laboratory (Dstl) are continuing to work with a range of industry partners to develop the Army's Future Soldier Vision (FSV), showcasing the personal equipment that soldiers could be using by the mid-2020s.
*DSTL Porton Down Photographer, Crown Copyright*

There is a long history of military data analysis and statistics. Florence Nightingale pioneered the use of data visualisation to improve conditions for soldiers in the Crimea and then in India during the 1850s.[1] William Farr, one of the founders of medical statistics, lectured at the Royal United Services Institute on *The Application of Statistics to Naval and Military Matters* in 1859.[2] During World War II, analysis of economic data informed targeting and planning, with the result that the problem of estimating equipment production based on observations of serial numbers is commonly known as the 'German tank problem'.[3]

Abraham Wald's work on where to add armour to aircraft is a famous example of the importance of common sense in statistical analysis.[4] Wald conducted detailed modelling work but his key insight was that the distribution of damage to returning bombers represented the areas where they could survive hits. Armour should be added to the areas where returning aircraft were undamaged - aircraft hit in those areas had not made it back.

Modern technology gives us access to much larger and richer sources of data than those available to Nightingale or Farr. And while Wald and colleagues would have relied on manual calculations, we have powerful tools for manipulating and displaying data available on our desktops. If used appropriately this can enhance decision-making, focusing effort where it can have greatest effect and identifying trends at a stage when an effective response is possible. However, quantitative information can be intimidating, especially when presented in bulk. This can lead to overly superficial analysis or to 'analysis paralysis' where ever-increasing, and often irrelevant, work is requested.

This doesn't have to be the case. A few basic principles - shown in Box 1 - can help focus effort and act as a handrail to help increase confidence. The example of irregular migration to the European Union (EU) illustrates these principles. It suggests that they are applicable not only to understanding our environment but also to addressing the challenges facing the Army and Defence more broadly:
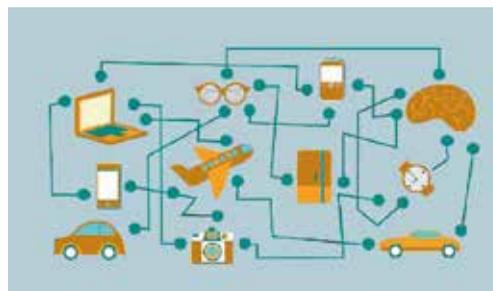
Principles for effective use of data:

- *Have a clearly stated question.*
- *Keep a sense of perspective.*
- *Understand how sensitive the system is to change.*
- *Examine the rate of change.*
- *Value accuracy over precision.*
- *Triangulate and sense check.*

HAVE A CLEARLY STATED QUESTION

Selection and maintenance of the aim is as important in analysis as in any other area. Governments, international agencies, Non-Governmental Organisations, academic groups and corporations publish a vast array of data. While it is tempting to ask, 'what does the data tell us?', it is almost always more productive to investigate a specific question. A good test is whether the question can be stated as a hypothesis for which supporting or contradictory evidence can be sought.

Irregular migration into the EU across the Mediterranean and through the Balkans was one of the major political priorities during 2015 and 2016. Although the number of illegal border crossings (IBCs) detected is now far below its peak, the number remains above the historic trend. Figure 1 shows the main migratory routes into the EU.

1 Lewi, P. J., (2006), Florence Nightingale and Polar Area Diagrams, in Speaking of Graphics, http://www.datascope.be/sog/SOG-Chapter5.pdf
2 Farr, W., (1859), The Application of Statistics to Naval and Military Matters, Royal United Services Institution, Journal, 3(10), 209-224, doi:10.1080/03071845909425448
3 Ruggles, R. & Brodie, H., (1947), An Empirical Approach to Economic Intelligence in World War II, Journal of the American Statistical Association, 42(237), 72-91. doi:10.2307/2280189
4 Mangel, M. & Samaniego, F. J., (2012) Abraham Wald's Work on Aircraft Survivability, Journal of the American Statistical Association, 79:386, 259-267, doi:10.1080/01621459.1984.10478038

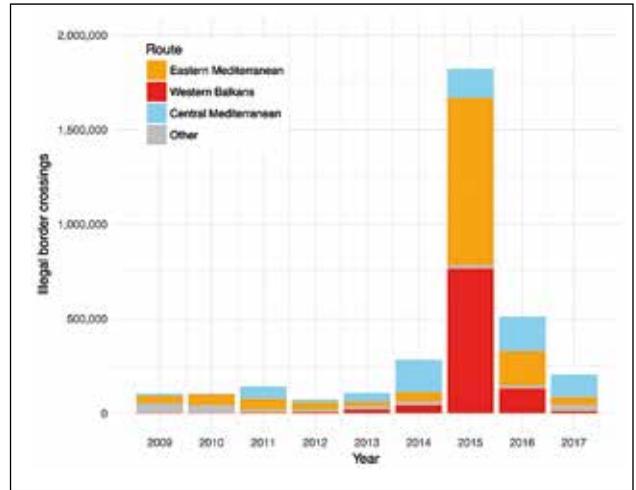Figure 1: Major migratory routes into the EU, Copyright FRONTEX

Figure 2: Annual illegal border crossings into the EU, Source: FRONTEX Detections of illegal border-crossings statistics download (updated Mar 2018).

We might usefully ask whether the rate of irregular migration to the EU has stabilised and whether the current rate is likely to pose a significant challenge. Two specific hypotheses to test are that the actions taken have stabilised the rate of migration and that this is now small in comparison to other migration to the EU.

KEEP A SENSE OF PERSPECTIVE

Alongside answering a specific question, analysis should be set in the wider context. Three areas to consider are: the scale of the system; any limits within which it operates; and the distribution of values within it.

The scale of the system relates to 'how many zeros' and gives a sense of the kinds of changes that may be important. Fluctuations measured in thousands are irrelevant when considering national budgets measured in billions but may be highly significant in other contexts.

The boundaries on a system relate to how big or small this could become, and are valuable in considering what change might be possible. The height of individuals varies within relatively small bounds - it is unheard of to be 10 times taller than average height of a person - but there is much greater variation in wealth - Christino Ronaldo earned $93m in 2017,[5] around 1,000 times the average income in Spain.

Focusing on irregular migration, around 3.35 million IBCs into the EU were detected from 2009 to 2017 (Figure 2).[6] Of these, 1.82 million (54%) occurred during 2015 when large numbers of migrants entered the EU. Roughly 90% of migrants during 2015 arrived via the Eastern Mediterranean and Western Balkans routes. A further 8% arrived via the Central Mediterranean route.

Putting this into perspective, in 2015 there were 2.4m immigrants into the EU and 20.7m people living in the EU who were not citizens of an EU country.[7] So in 2015, irregular migration made up a large fraction of new arrivals into the EU and newly arrived irregular migrants represented nearly 10% of the total immigrant population.[8]

It is also worth considering the potential limits on migration. The top countries of origin recorded during 2015 were Syria (594,059 IBCs; 32.6% of the total), Afghanistan (267,485; 14.7%) and Iraq (101,275; 5.6%). No other country made up more than 5% of the total, but nationality was unspecified in 30.5% of cases. Taking Syria as the largest source, in March 2018 there were 5.6 million registered Syrian refugees, including over 3.5 million in Turkey.[9] In the absence of improvements to conditions in Syria, migration could continue at current rates in the medium term and has the potential to increase substantially.

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5   Forbes (2017) The world's highest-paid athletes 2017
6   Unless otherwise specified data are from FRONTEX, Detection of illegal border-crossings statistics: https://frontex.europa.eu/assets/Migratory_routes/Detections_of_IBC_2018_03_05.xlsx
7   Eurostat, Migration and migrant population statistics: http://ec.europa.eu/eurostat/statistics-explained/index.php/Migration_and_migrant_population_statistics; Excludes immigrants who were citizens of another EU country
8   Rules relating to the definition of an immigrant and variation between EU countries in whether they record refugees and asylum seekers in their figures mean that these cannot be directly compared to the number of IBCs.
9   UNHCR, Syria Regional Refugee Response Inter-agency Information Sharing Portal: http://data.unhcr.org/syrianrefugees/regional.php.

UNDERSTAND HOW SENSITIVE THE SYSTEM IS TO CHANGE

As well as considering the size of any change in the context of the scale of the system, it is important to understand how sensitive the system is to change. That is, how much will a change affect the outcome of interest? Some systems may be highly resistant to change, with even quite large changes having little effect. Others are much more sensitive. For example, a processing system operating with no spare capacity will quickly accumulate a backlog if input increases.

By 2014 the capacity of Greek and Italian authorities to handle large numbers of migrants was already under strain. The Arab Spring, in particular, produced a spike of increased migration across the Mediterranean. Greece's facilities for managing irregular migrants had been operating at well above capacity for years.[10] And, in July 2013, the UNHCR again raised concerns about the capacity of Italian authorities to receive large numbers of irregular migrants.[11] There was certainly not spare capacity to handle larger numbers of arrivals.

EXAMINE THE RATE OF CHANGE

Static systems may be important - the current state may not be desirable - but require little analysis to understand. So the focus of analysis tends to be on changes to a system. As well as considering how fast a system is changing, it is instructive to ask whether this change is accelerating or decelerating.

In general, something growing or shrinking at a constant rate may become important over time, especially if the rate of change is large. But something changing at an increasing rate is very likely to become significant. The power of compound interest is well known, and the effects of Moore's law on computing power have changed society. In both cases growth by a percentage of the current value, rather than a fixed amount, leads to a larger change in each successive time period.

Figure 3 shows the cumulative total of IBCs from 2009 onwards. Ignoring any removals or repeat crossings, this roughly represents the number of irregular migrants arriving in the EU. Examining the slope of this chart (the rate of change) shows three phases:
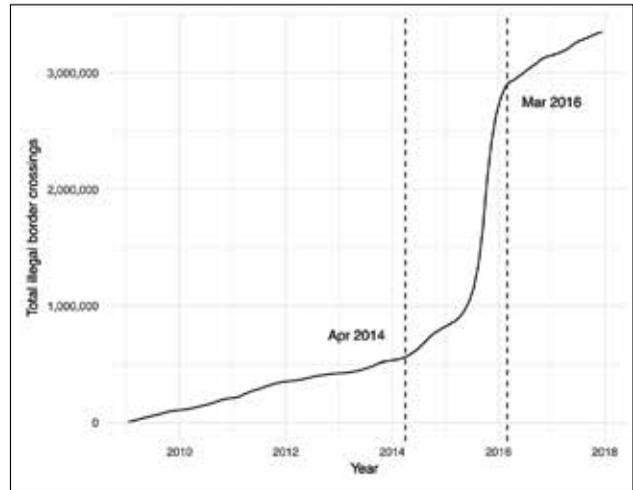

Figure 3: Cumulative total of illegal border crossings into the EU since 2009, Source: FRONTEX Detections of illegal border-crossings statistics download (updated Mar 2018)

- *A relatively steady rate of migration until early 2014, averaging around 9,000 IBCs per month;*
- *A increase in the number of illegal border crossings during 2014 followed by a rapid rise between April 2015 and March 2016;*
- *A return to a relatively steady rate from March 2016 onwards, though now at an average of 20,000 IBCs per month.*
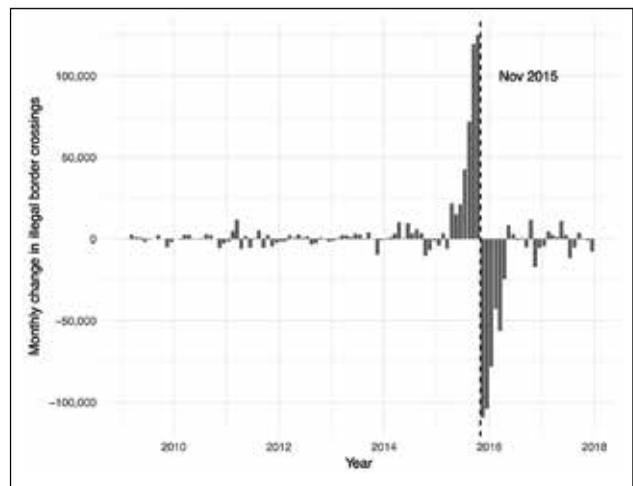

Figure 4: Month-on-month change in the number of illegal border crossings into the EU, Source: FRONTEX Detections of illegal border-crossings statistics download (updated Mar 2018)

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10 McDonough, P. & Tsourdi, E., (2012), *Putting solidarity to the test: assessing Europe's response to the asylum crisis in Greece*, New Issues In Refugee Research, Research Paper No. 231. Available from http://www.unhcr.org/uk/research/working/4f269d5f9/solidarity-test-assessing-europes-response-asylum-crisis-greece-paul-mcdonough.html

11 UNHCR (2013) *UNHCR Recommendations on important aspects of refugee protection in Italy*. Available from http://www.unhcr.org/uk/protection/operations/500950b29/unhcr-recommendations-important-aspects-refugee-protection-italy.html

To help identify what might be causing changes in the rate of illegal migration, Figure 4 shows the month on month changes in the number of IBCs detected. Positive values mean that more IBCs were detected than in the previous month and negative values mean fewer IBCs detected.

Figure 4 shows a marked trend of increasing numbers of IBCs each month from April to October 2015, followed by declining numbers from November 2015 until April 2016. This shows that, while the total number of irregular migrants has continued to grow, the rate of growth began to fall from November 2015 onwards. An 'S' shaped curve like the one seen in 2015 is often characteristic of growth reaching a natural limit. This might indicate that by the end of 2016 most of the migrants accumulated on the EU's borders who were willing to risk crossing the border illegally had done so. After this the system would return to a steady state reflecting the number of new irregular migrants.

However, it is also worth noting that during October 2015, the EU's Operation SOPHIA began and a draft deal between the EU and Turkey was agreed.[12] While it is possible that these actions simply co-incided with a decrease in the number of irregular migrants, it seems likely that they were at least somewhat effective in reducing the number of IBCs. The formal agreement that came into effect between the EU and Turkey on 20 March 2016 seems to have had little additional effect.

VALUE ACCURACY OVER PRECISION

A common objection to analytical results is that the data available are imperfect in some way. It is of course important to understand the nature and weaknesses of the data being used but, in most cases, conclusions that are important tend to be robust to small errors. The exact size of an effect is usually not that important in determining a response and trends that are lost in the noise are probably not significant (yet) worth responding to. Overall, it is generally better to be 'vaguely right than exactly wrong'.

In this case, the data for IBCs depends on crossings being detected. We also cannot adjust for people who are removed and then cross the border again, or those who cross the border multiple times during their journey (for example those crossing the Eastern Mediterranean and then the Western Balkans) as data about individuals' history of border crossing is not recorded.

With these caveats in mind, we can return to our original questions: whether the rate of illegal migration to the EU has stabilised and whether the current rate is likely to pose a significant challenge. Our high level analysis shows that the rate of IBCs into the EU has stabilised at around 20,000 per month. This seems likely to be at least in part due to the actions of EU countries, particularly agreements with Turkey. This rate is roughly twice that observed before 2014.

The large number of migrants who arrived during 2015 and 2016 will continue to pose a challenge until they are returned to their country of origin or integrated into EU countries. Although recent figures for total EU migration are not available from EuroStat, comparing the current rate of IBCs of around 240,000 per year to the approximately 1.6 million non-EU immigrants suggests that illegal migration still makes up a large proportion of immigration to the EU from non-EU members.

Given the large numbers of Syrian refugees in Turkey and other Mediterranean countries rates of illegal migration could increase significantly again if the barriers to migration are lowered or other factors, whether 'push' or 'pull', increase their desire to reach the EU.

TRIANGULATE AND SENSE CHECK

Much more common than errors due to imperfect data are errors resulting from misunderstanding what the data represent. Analysis rarely exists in isolation and should be combined with other information and subject matter expertise. Ideally, separate sources of data should be used to check that results are consistent and the results of analysis should be combined with expert opinion to form a full picture.

Much has been written on the EU migration crisis. A report from the House of Lords European Union Committee suggests that while Operation SOPHIA has played a vital humanitarian role in saving lives at sea it is dealing with symptoms rather than addressing the root causes of migration.[13] The Committee is more positive about the agreement with Turkey, citing this as having been effective in reducing the number of arrivals. Interestingly, the President of the European Council, Donald Tusk, is quoted as attributing a sharp reduction in migration flows from late - March to late April 2016 - to the agreement with Turkey, which was formally implemented at that time. However, FRONTEX figures

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12   European Council, Timeline - response to migratory pressures, available at: http://www.consilium.europa.eu/en/policies/migratory-pressures/history-migratory-pressures/

13   House of Lords, Operation Sophia, the EU's naval mission in the Mediterranean: an impossible challenge (HL 2015-2016 (144)). Available from: http://www.publications.parliament.uk/pa/ld201516/ldselect/ldeucom/144/144.pdf

Image of a concept high-tech helmet with a state-of-the- art built-in communication systems from the Defence Science and Technology Laboratory (Dstl) where scientists work with a range of industry partners to develop the Army's Future Soldier Vision (FSV). Photo DSTL Porton Down Photographer, Crown Copyright

show the reduction starting in November 2015, when the deal was agreed, suggesting that the deterent effect and action by the Turkish authorities may have begun earlier.

KNOW THYSELF

This article uses a geopolitical issue as an example, but the value of a quantitative approach applies to understanding ourselves as much as the environment in which we operate.

In a recent BAR interview, Commander Field Army identified deployability as one of his major challenges.[14] This type of problem is ideally suited to an analytical approach, which would serve to inform and to sense check the ideas for improvement that will now be being generated up and down the Field Army.

We know the size of the issue - over 20% of the Field Army is non-deployable - but do we know

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14   *The Field Army: Ready To Go (2017) The British Army Review 170, 5-11*

the composition of our non-deployable population (age, length of service, rank, employment, time non-deployable) and how this is changing over time? Do we know what is driving any changes? For example:

- *Are our medical entry standards too low, meaning that personnel with marginal passes quickly become non-deployable?*
- *Are personnel being injured in ways that could be mitigated (e.g. what proportion of non-deployability is due to training or sporting injuries)?*
- *Are we becoming more risk adverse in our assessment of deployability?*

A purely analytical approach can never hope to answer all of these questions but it can help us to ask the right ones and focus our attention on the actions that will have greatest effect. Records in JPA and the Defence Medical Information Capability Programme that could shed light on these questions are used by Defence Statistics (Health) to generate the MOD's official statistics. We should be making use of this data and the experts in using it.

CONCLUSION

This simple analytical approach can be used on most problems where we have data and, in the 21st Century, that means most problems. Posing clear questions, finding some basic facts and figures and working through some simple questions - How big is this? How is it changing over time? What does that change mean? - can yield valuable insights. In contrast, ignoring the data can mean missing valuable insights or drawing inaccurate conclusions.

In most spheres a purely qualitative analysis would get little hearing and Defence should be no different. We must work to increase our confidence in quantitative analysis of our environment and ourselves, remembering that, 'In God we trust, others must bring data'.

Headquarters 20th Armoured Infantry Brigade train on the snowy Sennelager Training Area, Germany, in readiness for the UK's Vanguard Armoured Infantry Brigade (VAIB) that saw HQ elements of 3rd (United Kingdom) Division deploy to Germany to test 20 Armoured Infantry Brigade on Exercise SPECULAR. Here elements of 20 Bde HQ forward are preparing to move to a new location, this involves breaking down equipment and moving in their Bulldog armoured vehicles. Photo: Dominic King, Crown Copyright

Kautilya's Arthashastra and its relevance to Contemporary Strategic Studies

This article by **Colonel Pradeep Kumar Gautam** (Ret'd), was originally published in the Journal of the United Service Institution of India in 2017 and is reprinted here by their kind permission. The article provides an analysis of the *Arthashastra* explaining issues and concepts on learning, the intellectual part of strategic thinking, warcraft and hybrid warfare, and understanding strategy and how it resides in the dynamic *Mandala* theory.

Indian Army Infantry Combat Vehicles move onto the firing range at Camp Bundela, India Oct. 26, 2009. Soldiers from the 2nd Squadron, 14th Cavalry Regiment, based out of Hawaii traveled with 17 of their Strykers to India for two weeks to train with the Indian army.
Photo: Fred W. Baker III, U.S. Army, Released

The normative setting of Kautilya's *Arthashastra* is the political unification of common cultural Indian subcontinent. Within this, the *Arthashastra* has a twofold aim. First, it seeks to show how the ruler should protect his territory. Second, is how territory should be acquired. The end or primary goal in the *Arthashastra* is *Yogakshema* protection, security and stability of the State. Today, political unification of common cultural Indian subcontinent as in the text is no more applicable as India is a sovereign nation-state less parts of Afghanistan, Pakistan and Bangladesh. However, many theoretical concepts and ideas in the text can be applied in internal and external matters related to strategic studies and also contribute to strengthen the Global International Studies from enduring Indian traditions. The concepts that need to be realised, are not only for waging war/application of force, but can also be used in strategic vocabulary in all disciplines of social science including peace research - a task yet to be undertaken by contemporary scholars.

In recent times, there has been a steady growth in literature on the defence, security, and international related aspects of *Kautilya's Arthashastra*.[1] This trend has now made it possible to go beyond the primary stage of just introduction to the various basic concepts and vocabulary in the text. The topic of Comprehensive National Power also has been analysed by many scholars satisfactorily.[2] As the study, debate and scholarship on revisiting and reinterpreting Indian heritage gains momentum, other levels of analysis emerge, which now need to be examined. In this regard, strategic thinking and 'how to think' assumes importance and this paper attempts to introduce this aspect related to contemporary strategic studies. It explains issues and concepts on learning, the intellectual part of strategic thinking, warcaft and hybrid warfare, and understanding strategy and how it resides in the dynamic *Mandala* theory.

LEARNING, TRAINING AND EDUCATION

Kautilya begins by explaining the necessary conditions which must be met in learning and education.

The student must also have a desire for learning or spirit of inquiry. Four subjects to be studied in progression are: (a) *Anvikshiki*, (b) the three Vedas (theology), *trayi*, (c) economics, production, manufacture *(vartta)* and (d) science of politics, *danda-niti*. While today there seems to be clear understanding of the second, third and fourth sub-disciplines, not much enquiry has taken place on the first or the 'preamble' or the 'mother of intellectual training' called *Anvikshiki*.

Anvikshiki or 'the Science of Enquiry' is based on the Indian schools of philosophy of *Samkhya*, *Yoga* and *Lokayata*. The third sub-discipline listed by Kautilya is *Lokayata* which is heterodox, that is, it is not purely based on the Vedas and is materialistic. It is also called *Charvaka*. This demonstrates that in prescribing the syllabus, Kautilya was not influenced by any ideology of the moment. He was thoroughly liberal and unbiased and did not reject any knowledge tradition that was then extant. Today, any good teacher in his reading list to his students cannot be selective, and so was Kautilya. This is a continuity of Indian tradition. *Anvikshiki* is similar to what we now term 'how to think' or 'theory of reason' (hetu- *shastra/hetu - vidya*). It is important to remember that *Anvikshiki* got bifurcated and was treated as two subjects, viz. the soul and the theory of reason. Kautilya focused only on *hetu*, or theory of reason, and did not incorporate the soul or *Atma- vidya*, which is now part of Indian philosophy called *Darshan*.[3]

Kautilya is very clear on the need for philosophy *(Anvikshiki)* and explains that (philosophy) confers benefit on the people, keeps the mind steady in adversity and in prosperity and brings about proficiency in thought, speech and action. Philosophy is ever thought as the lamp of all sciences, as the means of all actions (and) as the support of all laws (and duties).[4]

INTELLECTUAL ASPECTS OF STRATEGIC THINKING

Kautilya's main argument is that the leaders must be steeped in the above four disciplines and only then can

1 Available at http://www.idsa.in/history/publications. Accessed on 28 May 2017.
2 Malay Mishra, 'Unique Approach to Comprehensive Power through the Lens of Kautilya's Arthashastra', Journal of the USI of India, Vol. CXLVII, No. 607, January- March 2017, pp. 60-73.
3 Satis Chandra Vidyabhusana, A History of Indian Logic : Ancient, Mediaeval and Modern, Delhi, Motilal Banarsidass, (first published in 1920), 1971, reprint 2010, pp.5-7.
4 RP Kangle, The Kautiliya Arthasastra, Part II: Translation with Critical and Explanatory Notes, Delhi, Motilal Banarsidass Publishers Private Limited, Second Edition, Bombay University, 1972, 7th Reprint, 2010, as extracted from Sutra 1.3.11-12, pp. 6-7.

Indian soldiers from 6th Battalion of the 6th Kumaon Regiment, bound forward to assault a target with 1st Brigade, 2nd Infantry Division Soldiers, while conducting company movement procedures during the exercise Yudh Abhyas 15 culminating training event at Joint Base Lewis-McChord, Wash., Sept. 21, 2015. Yudh Abhyas is an annual, U.S. Army Pacific-sponsored Theater Security Cooperation Program bilateral exercise and the first one held at JBLM. **U.S. Army Photo: Sgt Daniel Schroeder, 5th Mobile Public Affairs Detachment, Released**

they be successful leaders, managers and commanders. A study of the text reveals that there are latent meanings which guide how to think and carry out appreciations including intelligence appreciations. These are also grounded in Indian philosophy and ethics. Some of the important ones can now be summarised briefly as under:-

- ***Self-Development and Self Discipline.*** *Kautilya's Arthashastra gives guidance on morals, including the most fundamental and enduring aspect of morals in human affairs, that is, abstaining from injury, non-violence or Ahimsa and control over senses.*[5] *The text says:-*

  - *Duties common to all are: abstaining from injury (to living creatures), truthfulness, uprightness, freedom from malice, compassionateness and forbearance.'*[6]

- *Control over the senses, which is motivated by training in the sciences, should be secured by giving up lust, anger, greed, pride, arrogance and fool-hardiness. Absence of improper indulgence in (the pleasure of) sound, touch, colour, taste and smell by the senses of hearing, touch and sight, the tongue and sense of smell, means of control over senses; or, the practice of (this) science (gives such control). For, the whole of this science means control over senses.'*[7]

The above help in preparing the leader to weigh up right from wrong and have the capacity to do clear thinking not encumbered by fatigue, hubris, and anger. It is clear that one has to be in command over oneself with self-control and self-discipline before one can think of commanding and controlling troops and engage with the enemy in dialectical mind game.

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5 *Ibid, (Sutra 1.3.13 and 1.6.1-3), p.8, p.12.*
6 *Ibid, p.8.*
7 *Ibid, p.12.*

Notions of victory or defeat, it is common military knowledge, lies in the mind of the commander. Thus, the three sub-disciplines of Anvikshiki helps the leader to acquire and understand the dual (Samkhya and Yoga), and materialistic (Lokayata or Charvaka) aspects of reality.

- ***Intellectual Honesty Derived from Scientific Thinking.*** *Kautilya seems aware of the desire of the governments to expect intelligence to support their policies and the intelligence to be supportive. He, thus, ensures that only objective intelligence is provided and nothing subjective or a-priori intelligence gets generated and only 'scientific' methods are employed.[8] Today, this central argument of intellectual honesty assumes great importance. Theoretically, this is not new. Field Marshal FM Slim who defeated the Japanese Army in India's Eastern Front during the Second World War had likewise argued to give due importance to the moral courage and its spiritual and intellectual aspects.*

- ***Power (Shakti) the Currency of Statecraft in Three Categories and Priorities.*** *Kautilya defines and prioritises power and insists that all three must exist but ideally they need to be in the following priority :-*

  - ***Priority 1*** *- Mantra-shakti or Mantri-shakti (power of counsel and diplomacy). Kautilya is cognizant that war is not the top priority and is the last resort and thus has this dictum as the top priority.*
  - ***Priority 2*** *- Prabhav-shakti (power of treasury and army). This is clearly what we understand today as economic might and military capacity.*
  - ***Priority 3*** *- Uttsah-skakti (power of personal energy). This is what may be now given in any leadership and management manual.*

- ***Perception and Knowledge.*** *Kautilya divides perception into three categories - directly perceived or immediate knowledge, unperceived or mediated, indirect knowledge as reported by human intelligence, experts etc., and inferred.[9] 'This statement about the three variants of knowledge in statecraft in the Arthashastra is the most significant with respect to the methodology of intelligence analysis, assessment and estimates as well as strategic planning.'[10] Kautilya further*

recommends that any information must be deliberated by a group and must not be left to one individual who may be biased towards intuitive knowledge and hunches. In other words, the need for collective deliberation.[11] These time tested concepts or should we say maxims are applicable today as they were in the past, and are considered to be the most important tool for strategic thinking.

Indian Army T-90 Main battle tanks in action. **Photo: Cell105, Creative Commons Attribution 2.0 Generic License, Wikimedia**

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8   *Dany Shoham and Michael Liebig, 'The intelligence dimensions of Kautilyan statecraft and its implication for the present', Journal of Intelligence History, 2016, p.13, p.15*

9   *RP Kangle, op cit, 1.9. 4-8, p.17.*

10   *Michael Liebig, 'Statecraft and Intelligence Analysis in Kautilya's Arthasastra', in Pradeep Kumar Gautam, Saurabh Mishra and Arvind Gupta (eds.), Indigenous Historical Knowledge : Kautilya and His Vocabulary (Volume III), New Delhi, IDSA/Pentagon Press, 2016, p. 47.*

11   *Ibid.*

- ***Learning from the Others.*** *Liberal education and wide ranging inquiring mind is a perquisite. It needs to be appreciated that since ancient Indian traditions, much can be learnt from an adversary or any other culture or civilisation. In this regard, Indian philosophy as expounded by Kautilya, has this important idea embedded:-*

'*Learning from the enemy or the asuras (demons) is an interesting ancient concept. The preceptor of the asuras is Sukra and that of devas, Brahspati. Kautilya's Arthashastra begins with a mangala: 'Om, Salutation to Sukra and Brahspati.' In combat, the best teacher is the enemy. Likely adversaries and belligerents also interact in a way of structuration. In other words, it is not only the Chinese who may read Sun Tzu but so could others. One does not have to be a German to understand what Clausewitz wrote about the fog, friction and role of chance in war.*'[12]

WARCRAFT
Unlike in the Sinic traditions of Seven *Military Classics* which include Sun Tzu's *Art of War*, there is : 'Hardly any literature dealing exclusively with military science or the art of war during ancient and medieval periods. But it has to be remembered that warcraft was then regarded as of statecraft and so the various works on statecraft deal also with the art of war.'[13]

Covert wars are seldom declared and continue to be part of statecraft in terms such as hybrid warfare, generations of warfare (4th, 5th and 6th generation etc.), asymmetrical warfare, proxy war and so on. What is important to note is that unlike in the case of these modern terminologies which are rooted in historical narratives, Kautilya's *Arthashastra* does not refer to any historical episodes or it is a-historical. It deals with concepts and a vocabulary. There seems to be continuity in the ancient with the modern.

In the 21st Century, interestingly the context of what Kautilya wrote for his times now assumes importance as the very character of war has changed to war amongst the people and emergence of non-state actors and so on, and cyber wars. Surely war-craft, statecraft and diplomacy are now conjoined as was in the time of Kautilya in the 4th Century BCE. Yet, as India has ongoing territorial disputes it may be dangerous to assume that capture or defence of

territory will not be expected. We need to understand that this is an ongoing issue of *janapada/rastra* or territorial integrity and sovereignty.

HYBRID WARFARE OR MATCHING OLD WITH THE NEW
Today the international buzz words are hybrid war, new generation war, war amongst the people etc., where there is an overlap of military and non- military means. According to General Gerasimov of Russia, 'non-military measures are occurring at a ratio of 4:1 over military operations'.[14] It is very interesting to see that a similar concept exists in the *Artha* text which has an origin thousands of years ago.

12   *Pradeep Kumar Gautam, Understanding Dharma and Artha in Statecraft through Kautilya's Arthshastra, IDSA Monograph Series No.53, July 2016, pp.96-97.*

13   *Jagadish Narayan Sarkar, The Art of War in Medieval India, New Delhi, Munshiram Manoharlal Publishers, 1984, p.1,4.*

14   *Timoty Thomas, 'Russia's Military Strategy and Ukraine: Indirect, Asymmetric and Putin-led', The Journal of Slavic Military Studies, Vol.28, No.3, July- September 2015, p. 455.*

In a recent research, Kautilya's core concepts about war are analysed to be a mixture of warfare and diplomacy. The foreign policy operations discussed seem not to refer to a classical war. Rather it appears that Kautilya has a combination of diplomatic pressure, political subversion, covert operations and military threats in mind. Such an approach for achieving foreign policy objectives is clearly favoured by Kautilya. Key for the successful conduct of foreign policy are (a) adequate intelligence on the adversary state, (b) rapid information about the execution of one's own operations and (c) collective deliberation and the ruler's decision-making based upon (a) and (b).[15]

In the above, three principles stand out. The first and central is intelligence. It is not only its collection but analyses in an era of 'humungous' overload of data. The second is akin to the well know OODA (Observe, Orient, Decide and Act) loop - theorised by a fighter pilot in the Korean War in the 1950s. The third, there is a need for a feedback and collective deliberation. Kautilya likewise presses for a similar proactive argument and his famous *sutras* at the conclusion of his Book VIII on The Six Measures of Foreign Policy as: 'He, who is well-versed in the science of politics, should employ all the means, viz., advancement , decline, and stable conditions as well weakening and extermination. He who sees the six measures of policy as being interdependent in this manner, plays, as he pleases, with kings tied by the chains of his intellect.'[16]

A mix of Indian army tanks and infantry vehicles onto the firing range at Camp Bundela, India Oct. 26, 2009. The final live-fire demonstration offered up both the conventional battlefield power of the Indian's T-90 tanks with the high-technology precision of the U.S. military's Javelin.
Photo: Fred W. Baker III, U.S. Army, Released

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15   *Subrata K.Mitra and Michael Liebig, Kautilya's Arthshastra – An Intellectual Portrayal, NOMOS, Baden- Baden, 2016, p.84.*
16   *RP Kangle, op cit, Sutras 7.18. 43-44, p. 384*

UNDERSTANDING STRATEGY AND MANDALA THEORY

James L Cook defines strategy, like that in Kautilya's aphorism or *sutras*: 'strategy is designed to link ends (national interests), *ways* (concepts that describe how something might be done) and *means* (resources that are employed as capabilities)'.[17] Lukas Milevski argues that the primary source of character of war is strategy and strategy's two main relationships are that between military power and political consequences, and between interacting adversaries.[18] Lawrence Freedman in his book *Strategy* (2013) argues that strategy remains the best word for expressing our attempts to think about actions in advance, in the light of our goals and our capacities. What these authors are explaining is interestingly embedded in Kautilya's *Arthashastra*.

In the Kautilya's *Arthashastra*, the entire process of a strategic and intelligence appreciation has been made into discreet and logical parts in a 'scientific' manner to be thought through. This is a comprehensive *Mandala* theory. In the ultimate analysis, the end state in Kautilya's *Arthashastra* is *Yogakshema*. Historically most disasters happen when final aim is not clear and states get sucked or dragged into enduring conflicts. Kautilya advises that this needs to be avoided. In the circle of competing states which Kautilya constructs as a *Mandala*, there is the need to know, establish and measure one's own capability and also that of the adversary or adversaries including what is the state of 'power' or *Shakti*. This capability is the measure of the constituent elements of a state - seven in number, also called *Saptanga* (seven limbs) or the seven *Prakrits* or constituent elements of a state : (a) *Svamin* (king or ruler), (b) *Amatya* (body of ministers and structure of administration), (c) *Janapada/Rastra* (territory being agriculturally fertile with mines, forest and pastures, water resources and communication system for trade and people), (d) *Durga/Pura* (fort), (e) *Kosha* (treasury), (f) *Danda/Bala* (army), and (g) *Mitra* (ally).

We can relate this to Chapter 3 (Attack by Stratagem) of Sun Tzu's *Art of War* which is about intelligence and knowledge. In its first sentence it counsels, *'Hence the saying: If you know the enemy and know yourself, you need not fear the result of a hundred battles.'*[19] In contemporary intelligence studies, this is a function of professionalism in having the capacity and capability of gaining proper knowledge and assessment by way of academic rigour, regional and cultural studies, diplomatic means, open source literature and a combination of intelligence of various types like diplomatic, military, and technical.

All the above intellectual aspects have to be practiced. What policy or ways and means that are to be applied are given in the four *Upayas* or methods that is: *sama-dana- bheda-danda* or conciliation, gifts, rupture and force. These have to be integrated with the six measures of foreign policy called *Sadgunya* which are (a) *Samdhi*, making a treaty containing conditions or terms, that is, the policy of peace, (b) *Vigraha*, the policy of hostility, (c) *Asana*, the policy of remaining quiet (and not planning to march on an expedition), (d) *Yana,* marching on an expedition, (e) *Samsraya*, seeking shelter with another king or in a fort, and (f) *Dvaidhibhava*, the double policy of *Samdhi* with one king and *Vigraha* with another at the same time. In sum, one of the six measures or its variation combined with the application of any of the four *upâyas* has to be thought through; issues of morality, justice, and legitimacy *(dharma)* have to be catered for as well. The text tells us repeatedly that, serious issues of war and peace and application of force or *danda* has to be legitimate and in contemporary understanding, it cannot be outsourced to artificial intelligence and robots. In short, the text has guidelines on strategic thinking on how to think, what to know or measure and what to do.

CONCLUSION

This article has summarised some enduring aspects of strategic studies from Kautilya's *Arthashatra*. It is a good manual for leadership development, education and training. Foremost is its rich repertoire of the 'science of enquiry' or how to think. It shows that intellectual honesty is derived from scientific thinking. Its focus on warcraft is relevant today seeing the blurring changes in the character of war where both use of military force with diplomacy overlap. Its most unique contribution is the concept of a *Mandala* Theory which needs to be dynamically applied to issues of politics, diplomacy, statecraft, and even business and management. This theory is not just only 'India-centric' but has universal application.

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17   James L Cook, '2012 Defense Strategy Review and Financial Year 2013 Defense Budget Request: Strategy and Fiscal Constraints', Orbis, A Journal of World Affairs, Vol.57, No.1, Winter 2013, pp.41-58.

18   Lukas Milevski, 'The Nature of Strategy versus the Charter of War', Comparative Strategy, Vol.36, No.5, 2016, pp.438-446.

19   Sun Tzu, The Art of War, Collins Classics, London, HarperCollins Publishers, 2011, p.12.

T-72 Ajeya tanks of the Indian Army in action. **Photo: Vivek Patankar, Creative Commons Attribution 2.0 Generic License, Wikimedia**

The Thin Green Line

Tom Lagana, OCdt New College RMAS compares the current Army Leadership Doctrine with the practice of leadership of the Officers of Wellington's Light Brigade

The 43rd British regiment captured a French cannon at the battle of Sabugal, April 3, 1811.
Painting by Richard Simkin (1840-1926), Released

Between 1799 and 1804, General Sir John Moore oversaw the creation at Shorncliffe Barracks of what would become known as the Light Brigade, possibly the premier fighting formation of Wellington's army in the Peninsula.[1] The Light Brigade was a new concept in British military doctrine and was to be the first formation composed entirely of Light Infantry soldiers. It drew inspiration from continental European formations of a similar nature (Austrian *Grenz*, Prussian *Jager*, and French *Voltigeurs*, as well as from the experience of its commanders in fighting in North and South America and the Mediterranean.[2] Composed of the 95th Rifle Regiment and the 43rd and 52nd Light Infantry, the Light Brigade under Sir John Moore underwent a radically innovative system of training whose influence can still be seen in British Army doctrine to this day.

Indeed, there is a direct link between the current *British Army Leadership Doctrine* and the methodology employed by Sir John Moore and his subordinates Colonels Coote Manningham, Kenneth Mackenzie and William Stewart - a link that is particularly appropriate if we accept the anecdotal evidence that the current *Leadership Code* was originally devised by officers of the Rifles. As a reminder, the *Army Leadership Code* spells out the acronym LEADERS; its tenets are:

> *Lead by Example, Encourage Thinking, Apply Reward and Discipline, Demand High Performance, Encourage Confidence in the Team, Recognise Individual Strengths and Weaknesses, and Strive for Team Goals.*[3]

Lead by *example* is the first and, arguably, the most important tenet of the current *Army Leadership Code*. Its importance is obvious – soldiers will always be unwilling to do what their officers ask them to do but will not do themselves. Yet it is not a concept that found much space in 18th and 19th century British Army thinking, with its rigid differentiation between the officer corps and the rank and file. As a young officer in the Mediterranean, Moore was shocked to note that:

> *The officers wish to be advanced, to get more pay and have less duty. I see none, or at least very few, who have the smallest ambition to distinguish themselves. Little can be expected from men formed and led by such officers. They neither look up to them as officers, nor do they respect them as gentlemen.*[4]

Accordingly, when Moore was placed in command of the Light Brigade, he strove to overturn this way of thinking. Officers in the 95th, 43rd and 52nd were expected to lead from the front, in all things. In his *Regulations for the Rifle Corps*, Coote Manningham wrote that 'the officer must, however, remember that example is the most powerful of all preceptors, and he will find that what he does not himself observe, with regard to conduct, will not be attended to, to any successful degree, by those whom he commands.'[5] It was this ethos that imbued the officers of the Light Brigade.

A soldier from 5 RIFLES armed with an LMG takes part in a multinational (Canadians and Italians) exercise in Estonia as part of NATO's eFP (Enhanced Forward Presence). **Photo: Lance Corporal Craig Williams, Crown Copyright**

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1   Plenty of evidence exists to support the contention that the Light Brigade was an elite formation, not least the fact that they were selected to spearhead the assault into the breach at Badajoz, a role that should properly belong to Grenadiers, not Light Infantry. See Urban, M., Rifles: Six Years with Wellington's Legendary Sharpshooters. London: Faber & Faber, 2005. PP.87-88.

2   Gates, D., The British Light infantry Arm, 1790 – 1815: Its Creation, Training and Operational Role, London: B. Batsford Ltd, 1987. Pp.40-42.

3   Army Leadership Doctrine, Edition 1: Ministry of Defence Press, 2016. P.17.

4   Moore, J., The Diary of Sir John Moore, p.281.

5   Manningham, Regulations, I.10.

Another key aspect of the *Leadership Code* is to encourage thinking, and in this Moore and his subordinates proved remarkably modern. Although something of a generalisation, to a large extent the conventional tactics of the day demanded that infantrymen of the line go through the motions of their drill by rote.[6] This would not answer for the 'Light Bobs', whose position at the forefront of the battlefield, with minimal support, required officers and soldiers of all ranks to think on their feet and act independently. At the Battle of Sabugal, Lieutenant Hopkins of the 43rd spotted a French flanking attack that was in danger of turning the British line. With no orders from his Colonel, Hopkins took his company down to menace the French flank, successfully stalling the French attack. Rather than attracting censorship, his independent thinking was praised, with Sir Sidney Beckwith - another Light Infantry pioneer - commenting that 'so far as a man commanding one company could decide a battle, Hopkins decided the battle of Sabugal'.[7]

In applying reward and discipline the Light Brigade and its officer corps differed from the remainder of the British Army. Although the picture is not as bleak as popular history suggests, one could be forgiven for thinking that discipline during this period was enforced by terrorising the rank and file with the lash.[8] However, this was not the case at Shorncliffe. In his pamphlet outlining proposed army reforms, Stewart wrote that *'the frequent infliction of corporal punishment tends most strongly to debase the minds, and destroy the spirit of the soldiery. This abuse of martial law ought to be restrained… opprobrium should be attached to such sentence by every means in our power. A judicious use of prudential restraints is, in most cases, to be preferred to the actual infliction of punishment.*[9] Reward, too, was not forgotten. The 95th was one of the first units to adopt distinctive badges for its soldiers - a wreath surrounding the letters VS, short for 'Valiant Stormer, for those who had assaulted a defended breach; different coloured cockades for first and second class marksmen.'[10]

Death of Sir John Moore (1761-1809) 17th January 1809 from The Martial Achievements of Great Britain and her Allies from 1799-1815, by James Jenkins. Aquatint by Heath, William (1795-1840) engraved by Sutherland, Thomas, Wikimedia.

6   Dundas, D., Principles of Military Movements, Chiefly Applied to Infantry. London: T Cadell, 1788. P.II.
7   Levinge, R. G. A., Historical Records of the 43rd, Monmouthshire Light Infantry, London: W. Clowes & Sons, 1868. P.150.
8   Court Martial records indicate that a standard Line Infantry Regiment (44th Foot) conducted on average 20 floggings per year. See Steppler, G.A. "British Military Law, Discipline, and the Conduct of Regimental Courts Martial in the later Eighteenth Century". English Historical Review (1987) CII (405): p.882.
9   Stewart, W. (Brig-Gen. The Hon.) Outlines of a Plan for the General Reform of the British Land Forces. London: C.Roworth, 1806. P.21.
10 Fuller, J.F.C. Sir John Moore's System of Training. London: Hutchinson, 1924. P.138.

Pictured is a soldier from 1st Battalion The Princess of Wales's Royal Regiment (1 PWRR) Issuing orders to UK and visiting Estonian soldiers in the Sennelager Training Area in Germany. **Photo: Mr Dominic King, Crown Copyright**

High performance and the demands thereof were implicit in the difficult and dangerous role that was being asked of all ranks of the Light Brigade. Perhaps the most ruthless exemplar of this ethos was Brigadier General Robert 'Black Bob' Craufurd, who took command of the Light Brigade after the death of Sir John Moore at the Battle of Corunna. A notorious disciplinarian, Craufurd demanded and received high performance from his men. Whilst Wellington's army was engaged in fighting the Battle of Talavera, Craufurd marched the Light Brigade almost 70 kilometres (with loads in excess of 30 kilos) in just over 24 hours, marching all day and through the night to arrive in time to reinforce the beleaguered British troops.[11] Officers, too, were expected to perform to the highest standard. Moore, in setting up the Light Brigade,

was particularly ruthless with those he felt did not meet the required standard. In the words of one historian, *'he purged the 43rd and 52nd regiments of inefficient officers by making running up hill a regular and monotonous feature of his light infantry training; the fat and idle were soon glad to sell out'.*[12]

Insofar as there was a team - and the *esprit de corps* of the Light Brigade rapidly became notorious - the officers of the Light Brigade went out of their way to encourage confidence in it. Nowhere is this more obvious than in the marksmanship training that the Light Brigade and in particularly the Riflemen of the 95th, the British Army's elite snipers, received. Most regiments of the line paid lip service to the business of marksmanship, primarily

11   Chartrand, R. Talavera 1809: Wellington's Strike into Spain. London: Osprey Publishing, 2002. P.81.
12   Glover, R., Peninsular Preparation, Cambridge: Cambridge University Press, 1963. P.145.

due to a chronic shortage of powder and ball with which to train.[13] By contrast, the men of the 95th trained regularly with live ammunition, shooting at targets from 50 all the way up to 300 yards. As a consequence, they became lethally proficient. One observer recorded how '[an officer] himself was one of the best shots that I have ever seen. I have known him [and a Rifleman] to hold the target for each other at a distance of 150 yards, while the other fired at it, so steady and accurate was both their shooting.'[14] An unorthodox practice, perhaps, but one that certainly indicates how supremely confident officers and their subordinates were in each others' abilities.

One aspect of the current *Army Leadership Code* where, perhaps, the Light Brigade fell short was in the ability of the chain of command to recognise individual strengths and weaknesses. This is likely born of the leadership philosophy and general approach to treatment of the

13   Henegan, R., *Seven Years' Campaigning in the Peninsula and the Netherlands from 1808 to 1815*, London, 1846, P.346.
14   Surtees, W., *Twenty-Five Years in the Rifle Brigade*, T. Cadell: London, 1833. P.42.

Pictured is a soldier from D Company, 5 RIFLES operating on the edge of dense forest whilst taking part in a live firing multinational exercise in Estonia as part of NATO's eFP (Enhanced Forward Presence). **Photo: Lance Corporal Craig Williams, Crown Copyright**

individual during that period - although the Light Brigade was progressive, it still existed within the confines of a fairly unforgiving institution over 200 years ago. Accordingly, individuals were not always allowed to attain their true potential. A good example of this would be Rifleman Tom Plunket, famous for his outstanding marksmanship during the Corunna campaign[15], who was frequently singled out for praise as a soldier. Promoted to Sergeant, however, he developed a problem with alcohol that the chain of command failed to address - resulting in a drunken incident that led to court-martial, reduction to the ranks, and a flogging.[16] Had Plunket's problem been managed more effectively, he might have had a far more successful career.

The final aspect of the *Leadership Code* needs hardly detailing - it is obvious that the officers of the Light Brigade were trained to strive for team goals in everything they did. When the formation was created, prior to the Battle of Trafalgar, England was under genuine threat of invasion; the existence of the country itself was at stake. Their common goal, as was of all those who trained under arms during this period, was the defeat of the armies of Napoleon Bonaparte. Thus, we see commonality of effort at the root of all their undertakings, and indeed it underpins the tenets we have outlined above.

In conclusion, then, there are a remarkable number of parallels to be drawn between the current *Army Leadership Doctrine* - in particular the LEADERS code - and the ethos espoused by the officer corps of the Light Brigade. Although some minor differences must be allowed, given the difference in time and different attitudes to leadership, combat, and what we now term human resources, the basic tenets are eerily similar. Officers in the Light Brigade were encouraged to lead by example, by excelling at physical pursuits and performing soldierly skills with ease; to encourage thinking, by promoting independence of thought on the battlefield and off it; to apply reward and discipline, by offering incentives to going above and beyond the standard (including promotion, even to the rank of officer) and punishing infractions with justice and where possibly with leniency; to demand high performance, in all aspects of soldiering, of themselves and their men; to encourage confidence in the team, by showing their soldiers they were capable of more than they thought possible; and finally, to strive for the common goal of the defeat of France and the liberation of Europe.

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15   Plunket shot and killed French Cavalry General Auguste Colbert and his Aide de Camp at a range far exceeding those normally achieved in training.

16   Costello, E., *The Adventures of a Soldier*, London: Henry Colburn, 1841. Pp. 22-23.

Measuring the effectiveness of Defence Engagement

In this article **Captain Josh Sleeman** attempts to navigate the difficulties surrounding measuring the effect of UK training on host nation security forces

'Measurement of effect should provide succinct indications of change and effect. However, absolute, unequivocal measurement will rarely be achievable.'

Campaign Execution JDP 3-00 3rd Ed

Members of 2 LANCS train Iraqi and Kurdish security forces at 3 locations. The focus is primarily on developing the infantry, counter-IED and medical skills, with Royal Engineers providing mobility support using bridging and breaching. **Photo: Corporal Babbs Robinson, RAF, Crown Copyright**

The British Government believes in helping other states' justice and security systems when it is consistent with our domestic and international law obligations and useful, safe and in the national interest to do so.[1]

This underpins the overarching need for timely and effective Defence Engagement (DE) in which the British Army undertakes a significant role. However, it is not enough to simply deliver training, we must be seen to be delivering good quality training that makes real differences to the security forces we have been partnered with.

With honest concern for the quality of the training UK Forces have been delivering, we have long attempted to accurately measure the effect of short-term training teams (STTT) on host nation security forces (HNSF). The benefits of an accurate evaluation of training effect are clear, not least so commanders can analyse and report the direct consequences of UK DE, but also so we can hand over an honestly improved security situation to the country in which we sought to help. These results to date have been patchy. From security building in former Rhodesia to developing the Afghan National Army, the doctrine has attempted to evolve in order to meet the new challenges of monitoring progress in increasingly complex theatres. However, measuring effect using Doctrine Note 15/03 *Land contribution to Defence Engagement* or JDP3-00 *Campaign Execution* has, on recent operations, been a difficult process of gathering and interpreting data to mixed effect, rather than an exact science. Consequently, a number of recommendations have emerged from a great many tentative steps.

DEFINING AND PLANNING MEASUREMENT OF EFFECT (MOE)

Doctrinal guides for measuring effect are numerous, however, in order to ensure a solid start state prior to deployment a single methodology must be agreed upon and a plan put in place to gain the necessary information for analysis to take place. When DN 15/03 describes the creation of MoE as being an element that 'should be built in to the initial concept of the overall capacity-building activity, rather than as an afterthought'[2], we must

endeavour to understand not just that we are training the local forces, but critically, how well we are doing it. MoE is defined as being the assessment of the realisation of the specific effects, or 'did we do the right things?'[3] In this respect progress can often be most effectively confirmed by a simple statement resulting in a yes or no answer. This can be captured through internal validation (InVal) to get reflections from the students themselves, however it will not be clear until sometime later if the training was actually of use to those soldiers when they return to operations. This long-term nature of change will be harder to examine, especially considering the brief period of training delivered by most UKTTs to any one sub-unit. Whether or not true behavioural change has then persisted, despite the difficulty in measuring, should be pursued as part of the complete MoE.

To ensure accuracy, long and short-term measures should be used in the production of reports and returns to higher command and, in the case of Op SHADER, they were. The *difficulty*, is attempting to measure not just operational effectiveness but subtle operational *improvement* among the clutter of uncontrollable variables. Even if improvement can be measured there is then the serious issue of causality and the difficulty of drawing a line of effect between coalition training and the ability of the HNSF.

Without an early concept of MoE then its application will be haphazard at best. It is understood that badly explained, inconsistently defined or incoherently applied measures are divisive and sap commitment.[4] The direct consequence of this may be poor data collection resulting in inaccurate reporting on which misleading analysis will be based, therefore the process must be driven at the highest level. Engraining the idea of MoE at the earliest stage into UKTT program design will assist with buy-in at all levels and ensure the smooth collection of initial data when HNSF start training. Practitioners should seek to use the Defence Systems Approach to Training (DSAT) as a guide in this respect and treat evaluation of HNSF in much the same way as the British Army would look critically at its own practice; a background in training design and evaluation would be invaluable to those who will conduct MoE.

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1   *Overseas Security and Justice Assistance: Human Rights Guidance. HM Government, Page 4.*
2   *Doctrine Note 15/03 Director Land Warfare: Land Contribution to Defence Engagement (2015), The Development, Concepts and Doctrine Centre, Swindon.*
3   *JDN 2/12 Chapter 210, Page 2-6 & JDP3-00 Chapter 510, Page 5-5.*
4   *ABCA Publication 369, Edition 2, Security Force Capacity Building Handbook (2011), Page 8-4.*

British soldiers, deployed in support of Operation Inherent Resolve, examine a bridge that was built in Mosul, Iraq. The United Kingdom Bridge Training Team advises and assists Iraqi security forces in construction of an Acrow Poseidon bridge over the Tigris River. This effort is part of Combined Joint Task Force - Operation Inherent Resolve, the global Coalition to defeat ISIS in Iraq and Syria. **Photo: Pfc Anthony Zendejas, Released**

INFORMATION GATHERING BEST PRACTICE

'What is perceived as being quite inadequate by Western standards may be perfectly acceptable, or even superior, for local conditions'

ABCA Publication 369 Edition 2

A knowledgeable point of contact (PoC) and a good interpreter are the key components when creating any sort of MoE. The expert knows what questions to ask and the best medium for interaction and the interpreter will know what will offend or please students to illicit the most useful data. More than just translating, they can also conduct phone calls independently, pick up nuances in conversation and add manpower to data collection. However, as the process can be complicated and will always be time consuming, there are some things that should be considered prior to beginning.

Firstly, can the process be done another way? During Op SHADER NGOs such as YouGov were based in the local vicinity and were able to conduct online and phone polling. If there is someone else who can do the job better, or remove the burden of labour from your own team then this should be exploited. If not, can you devise your own online questionnaire? Emailing 100 participants is far quicker and easier than ringing the same amount of people although the chance of a reply reduces rapidly. Secondly, ensure you are asking the right questions and have them well prepared prior to making the first calls or sitting down with your first trainee. You can always test and adjust these to suit the culture or individual but don't just guess. Finally, a face-to-face discussion will always be the best way to garner the subtle intangible cues and expressions that distant contact cannot. This should be countered by the greater honesty that can be gained from two locals speaking on the phone about their experiences of training and operations without being 'observed' by the PoC.

Throughout this process the data collector should not forget the potential for the Hawthorn Effect which may lead behaviour to change in line with HNSF expectations.[5] This can be directly linked to a HN's cultural barriers to providing negative feedback however, anecdotal evidence from trainers suggest that after developing a good relationship, trainees are willing to provided constructive criticism. Ultimately what isn't

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5   *McCambridge. J., Witton. J. and Elbourne. D. (2014), 'Systematic review of the Hawthorne effect: New concepts are needed to study research participation effects' https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3969247/ [Accessed 10/11/2016].*

wanted is for the results to be skewed in a way that shows progress where there is none.

BEHAVIOURAL CHANGE
Fishbein et al.[6] concluded that, generally speaking, for a person to perform a given behaviour, one or more of the following must be present:

- *The person forms a strong positive intention or makes a commitment to perform the behaviour.*
- *There are no environmental barriers that make it impossible to perform the behaviour.*
- *The person possesses the skills necessary to perform the behaviour.*
- *The person believes that the advantages of performing the behaviour outweigh the disadvantages.*
- *The person perceives more normative pressure to perform the behaviour than to not perform it.*
- *The person perceives that performance of the behaviour is consistent with his or her self-image or values.*
- *The person's emotional reaction to performing the behaviour is more positive than negative.*

- *The person perceives that he or she has the capabilities to perform the behaviour under different circumstances.*

Conversely, UKTTs concentrate heavily on delivering the skills required for a trainee to use when they have already accepted the change to their usual way of doing things. This is only one of the eight potential motivators influencing an individual's decision making and is, arguably, one of the least powerful.

The other factors are commonly referred to as 'cultural barriers to change'. They are the ingrained beliefs held by the HNSF that must be either overridden or adjusted in order to have the desired effect not just in the near future, but in the longer term. This is important to understand as it will be within this area that most negative influences on MoE will be found. A lasting change among a body of people will only manifest itself through transformative changes in attitudes and behaviour of a critical mass of individuals.[7] To this end a critical mass must be instructed in order to create change, and large numbers of HNSF should be considered during any MoE sample.

Iraqi security forces receive instruction from a British army trainer during combat engineer course at the Besmaya Range Complex, Iraq. The Besmaya Range Complex is one of four Combined Joint Task Force - Operation Inherent Resolve building partner capacity locations dedicated to training partner forces and enhancing their effectiveness on the battlefield. Photo: Sergeant Tracey Mckithern, Crown Copyright

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6   *Fishbein. M., Triandis. H., Kanfer. F., et al. Factors influencing behaviour and behaviour change. Cited in: Baum. A., Tevenson. T. & Singer. J. (2001), Handbook of Health Psychology. Mahwah, NJ: Lawrence Erlbaum Associates. Page 70.*
7   *Doctrine Note 15/03 Director Land Warfare: Land Contribution to Defence Engagement (2015), The Development, Concepts and Doctrine Centre, Swindon.*

VALIDATION OF RESULTS

To build an accurate picture of MoE the use of one collection medium is clearly not enough. It is not satisfactory simply to conduct phone interviews as these are merely personal reflections on the operational capability of the unit. In order to gain a better idea of the honest progress of operations and any potential training effect, other measures must be used. Here, close ties with the J2 cell are invaluable and they should be utilised for their intelligence gathering ability and contacts. The use of multiple sources of information can then add weight to analysis with corroboration and support.

The use of local news sources, social media and anecdotal evidence from allied advise and accompany (A&A) units all help to build a picture of operational effect provided the trainer can follow the movements of a previously trained unit. Of huge benefit can be raw footage from the front lines, not screened through media portrayal. If this kind of evidence could be linked to a unit that has been tracked from training to operations, the individuals called for their opinions and A&A teams used as a source of further information, then a coherent picture can be built of a unit's ability and analysis can be drawn from it. This may well include lines drawn from what has been taught to the drills conducted on operations, although correlation does not necessarily infer causation.

It may seem obvious that the gold-plated solution is to provide UK A&A units to follow trained HNSF during operations and monitor their behaviour, but planning to measure MoE must always consider that this is unlikely. Due to risk appetite and requirement for permissions (this may change with the advent of Special Infantry Battalions), all other methods of data collection should be explored first so that MoE can still be analysed even when dislocated from trained units.

LONG TERM IMPROVEMENT OF HNSF

Do not try to do too much with your own hands… It is their war, and you are to help them, not win it for them.

T E Lawrence, 'Twenty Seven Articles',
Arab Bulletin, 20 August 1917.

A soldier from 2nd Battalion, The Rifles observes a jungle patrol by the National Parks Agency guards. The Rifles headed up a Short term Training Team (STTT) to the Gabon in Central Africa where they were mentoring the National Parks Agency, in basic military tactics over a five week course in the Mokekou Training Centre, (MTC), Lope National Park. *Photo: Graeme Main, Crown Copyright*

Given the inherent lack of revision or continuation training being conducted within some HNSF units, it can be assumed that the majority of those trained formations have suffered 'skill fade' equivalent to any person who has not revised or applied what they have learned.[8] This results in, according to Ebbinghaus' forgetting curve, a loss after one month of 80% of that which is taught.[9] This means that without continual training from coalition forces or a functioning cadre of HNSF instructors that most of what the coalition is delivering to indigenous soldiers will be lost, often before the soldier even arrives into battle. It is therefore encouraged to make contact with trained units for MoE data collection no sooner than one month after training completion to allow forgetting, or revision to take place. This must be tempered with the average length of operational tours and the pace of operations that the HNSF are involved in.

It is recommended that units are brought back for refresher training packages after spending time away to see how much they recall. It would also show if students identified and trained as instructors are still performing that task and how well they are doing. By programming this in to the training early it is more likely to result in returning students rather than an ad hoc call back arrangement. These refresher training periods also allow trainers to measure why it is that some things are remembered and some are not. For example, does knowledge of foot drill remain while marksmanship deteriorates and what does this say about the unit?

KEEP IT SIMPLE

'The goal of change to any HNSF is an accountable, self-sustaining, capable and credible force able to meet the security challenges faced by the HN and looked upon as legitimate by the population.'

ABCA Publication 369 Edition 2

It is important to note that there is often a tendency for units to overcomplicate assessments, including MoE[10] and as a direct result, sub formations can be overwhelmed by information requirements. MoE is no exception as many data points can be used to measure effect. Equally, oversimplifying the process can result

in poor analysis as the original statistics on which any analysis is based will be fundamentally flawed.

To correctly use the latter stages of the DSAT model takes a sound working knowledge of collection, recording and analysing data using methods that can be difficult to design, trial and fully implement over a geographically wide spread operation including a large number of troops and training programmes, all with commanders who have their own objectives, ideas and reporting chains, therefore simplicity is key. DN 15/03 demonstrates a seven-colour scale tied to indicators as an example of measuring effect in indigenous forces due to its ability to 'demonstrate subtle changes and nuances in performance.'[11] It does this deliberately to avoid the more 'ambiguous' four-colour system (red, amber, yellow, green). However, in the experience of 1 RIFLES on Op SHADER, it was far more complicated to judge the level of the participants than had been hoped. The subtle difference between 'some' and 'partial' or 'limited' and 'negligible' is almost impossible to comprehend when the basis for evaluation is purely subjective, a situation that may arise in other DE missions. In these situations, the four-colour system may prove to be an easier way to codify results. Always consider the burden on the training teams and the practicality of data collection.

CONCLUSION

No single element of MoE is entirely original or all that different from process the Army undertakes when conducting its own training. A great amount has been written on the subject and there are some good products that have already been created that can be transplanted directly in to a DE operation as if it were a training program for UK soldiers. It is the collecting and collating of data *after* the course has been delivered and measuring its effectiveness that is more difficult to conduct and document, both in the UK and on STTTs.

The most important element of MoE is the one which has been most extensively stressed, that it must not be an afterthought and must be well designed and fully agreed at all levels *prior* to arrival in theatre. It should not be neglected as a 'nice to have' and should be written in to the reporting process so that it is both mandatory and has

8   *JSP 822 Defence Systems Approach to Training – Direction and Guidance for Individual and Collective Training Version 2 (2016), TESRR, C DP, MoD.*

9   *Murre. J. & Dros. J. (2015), Replication and Analysis of Ebbinghaus' Forgetting Curve, https://www.ncbi.nlm.nih.gov/pmc/articles/ PMC4492928/ [Accessed 14/11/2016].*

10   *JDN 2/12 Assessment (2012), The Development, Concepts and Doctrine Centre, Swindon.*

11   *Doctrine Note 15/03 Director Land Warfare: Land Contribution to Defence Engagement (2015), The Development, Concepts and Doctrine Centre, Swindon.*

A member of the Nigerian Air Force stands guard over a British soldier during a role play exercise run by the British Military Advisory Training Teams Short Term Training Team at Kaduna Internatiional Airport in Nigeria. **Photo: Sergeant Ralph Merry ABIPP, Crown Copyright**

buy in at all levels. It must also be read and actioned by commanders so that those who collect and analyse the data feel it is not a futile task and most importantly, it must be kept simple. 'Knowing when HNSF are capable enough to allow transition of responsibility to occur will ultimately depend upon the ability to measure and assess their effectiveness at providing for their own security needs. Such measurements and assessments are best determined and conducted in partnership with the HN, but ultimately, the responsibility for carrying them out honestly and objectively rests with the CF [coalition forces].'[12]

- *Commanders must agree a definition, end state and initial plan to measure effect prior to deployment*
- *A single, knowledgeable point of contact is assigned prior to arrival in theatre*
- *MoE should concentrate on HNSF motivations as well as output to find shortfalls*
- *A&A teams are the gold standard of MoE collection*

however as many mediums as reasonably practicable should be employed as possible to measure effect
- *'Remind and revise' courses are an excellent source of MoE and offer training advantage to HNSF*
- *MoE must be kept as simple as possible*

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- *Draper. S (2016), 'The Hawthorne, Pygmalion, Placebo*

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12   *ABCA Publication 369, Edition 2, Security Force Capacity Building Handbook (2011), Page 8-1.*

British Royal Engineers, deployed in support of Operation Inherent Resolve, discuss the construction of a bridge with an Iraqi security force (ISF) member in Mosul, Iraq. The United Kingdom Bridge Training Team advises and assists ISF in the construction of an Acrow Poseidon bridge over the Tigris River. **Photo: Pfc. Anthony Zendejas, Released**

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Know Thyself: The Person, The Team, and doctrinal gaps in between

Major Mathew Bayliss, studies the expression 'Know Thyself' in terms of how the Army and each individual can maximise their leadership capabilities

*Royal Marine recruits take part in a sports afternoon at the Commando Training Centre Royal Marines (CTCRM) Lympstone. The Royal Marines training is the longest basic infantry training programme of any NATO combat troops. **Photo: LA(Phot) Jennifer Burn, Crown Copyright***

What does it mean to 'Know Thyself'? These words are prominently carved into an imposing double-width, full-length mirror, mounted in the Officers' Mess in Commando Training Centre Royal Marines (CTCRM). Carefully positioned between Young Officer cabins and the galley, trainees are compelled to contemplate this, for a brief introspective moment, as they progress from one 'evolution' to the next. As such, they are ingrained into every Young Officer's introduction to military leadership at Lympstone. And yet, lacking any context, their meaning may need exploring.

Some argue that to 'Know Thyself' has different forms: is this knowing how you appear to others, or knowing that part of you no one else can ever know, in other words, your soul?[1] Perhaps it is both? Or is it, rather, a warning of humility, designed to banish delusions of grandeur as a newly-minted Commando officer checks his appearance? Or could it be tactical advice? 'Know your enemy and know yourself, and fight a hundred battles without danger'.[2] Although, if it was inspired by *The Art of War*, then Sun Tzu may well feel aggrieved. As the book makes clear, 'Knowing Thyself' is simply not enough: 'Know yourself but not your enemy, and [you will] win one battle but lose another'.[3] By saying this, it essentially implies that being self-aware is good, but not good enough. Leadership doctrine, both Army and Navy, recognises this by urging all leaders, commanders, managers and team players to not only understand our own strengths and weaknesses, but also those around us. This is part of the well-known overlap between the team and the individual. But there is still something missing.

Before going further, it is worth explaining why this is relevant now. First, the incoming Chief of Defence Staff has clearly stated 'leadership' to be his main effort over a number of years.[4] This has manifested itself in numerous guises, from the 2016 and 2017 Army Command Plans, to founding the Centre for Army Leadership, and to 'CGS's Leadership Test 2016'.[5] Therefore, given the priority he gave it as CGS, it is highly likely that this will continue in his role as CDS. Second, if it is true that 'leader attribution error' means we have a tendency to overemphasise the role of the leader because often, in reality, they 'are less important than we imagine',[6] then what of the team that surrounds our key leaders? Or indeed any leadership position? How are the strengths of the team used to minimise the weaknesses of the individual, whilst simultaneously enhancing their talents? And in turn, what team should we build around ourselves to maximise our leadership?

Just as CTCRM has left 'Know Thyself…' hanging rather enigmatically for the observer to interpret, so too has an aspect of our leadership doctrine. When Army Leadership Doctrine talks of self-awareness, it talks of knowing your strengths and weaknesses, how others perceive you, and how to overcome this through continual development.[7] When it talks of building teams it talks largely of fostering cohesion, pride, and raising standards.[8] When it details employing people most effectively it says that leaders should 'ensure that each person is in the role where they can add most value'.[9] Finally, 'Leadership Behaviours' encourage leaders to know the strength and weakness of each team member so that s/he can be developed appropriately.[10] All of this makes sense.

However, what these publications do not make clear is that effective leaders are not only aware of their personal strengths and weaknesses, and that of the team, but they know how the two best complement each other. It is not enough to simply 'Know Thyself', or even the team, but to know how to build a team that maximises the strengths and minimises weaknesses of the leader, and vice-versa. In the words of Jo Owen, 'if you are lousy at tax

1   Avnon, Dan,, 'Know Thyself': Socratic Companionship and Platonic Community, Political Theory, Vol 23, No. 2 (May, 1995) pp304-329, Sage Publications, Inc.
2   Tzu, Sun, "The Art of War" translated by Peter Harris (London, Everyman's Library, 2018), 55.
3   Ibid.
4   Army Command Plan 2017 and 2016, CGS Intent, Para 13, 3-7.
5   AC 72029, Army Leadership Doctrine, 47.
6   Kellerman, Barbara, The End of Leadership, (New York, HarperCollins, 2012), 117
7   Army Leadership Doctrine 406(a), 45
8   Ibid., 49-52
9   AC 64547 Army Leadership - Developing Leaders, 2014, Chap 5, http://www.army.mod.uk/documents/general/rmas_ADR002383-developingLeaders.pdf.
10 AC72021, The Army Leadership Code; An Introductory Guide (First Edition), 2015, 18.

Royal Marine Commandos are pictured during a Green Ops exercise conducted over a two day period in various areas around Woodbury Common and Tregantle Ranges in Devon. **Photo: POA(Phot) Sean Clee, Crown Copyright**

management, hire an accountant'.[11] And whilst clearly the parallel of 'hiring and firing' does not always fit neatly into a military context, the underlying point remains: 'deal with weakness by building a team and delegating'.[12]

For the most part, the military already does this on a regular basis. For example, pairing an inexperienced subaltern with a seasoned SNCO is a well-established practice. This is all the more reason to document it in our doctrine. Particularly as acknowledging personal weaknesses, and looking to the strengths of others to cover our own shortfalls, whilst sometimes practiced, is rarely preached. But combining this self-awareness with team building can significantly improve the output of the team. Consider the two following examples.

First, is that of Gordon Brown when he was Prime Minister. In 2008, after 14 years of bitter feuding with his political adversary Peter Mandelson, Brown stunned colleagues and critics alike by appointing Mandelson, a pariah previously banished to a European trade commissioner post, into the very heart of his cabinet. The effect of bringing the two men together, whose relationship had long been likened to that of 'scorpions in a bottle',[13] was to 'save Brown's career'.[14] In Brown's case, he had long been struggling in front of both the media and large segments of his own party. He was facing successive leadership coups and predicted disaster in the coming election. Knowing this, his own weaknesses, and Mandelson's media-savvy strengths, Brown re-built his team accordingly, and successfully. With Mandelson's help he survived another coup attempt and, when most pundits predicted an outright Conservative majority, forced Cameron into a surprise coalition government.

The second is that of Field Marshall Slim. With refreshing honesty he openly described himself as 'a second-grade staff officer'[15] who was apprehensive as to why he had been re-assigned to Burma from Iraq:

My secret fear was that I was going to be told to take over Chief of Staff… [and] I had had enough experience anyway, to convince me, and I think others, that whatever I was like as a commander, I was certainly worse as a staff officer.

But Slim was not only self-aware and humble enough to know of his own shortcomings, but sufficiently shrewd to select someone to help; Major-General Snelling. As he recalls, shortly after assuming command of the fourteenth Army:

The transfers to other headquarters that now had to be made… gave me an opportunity to introduce some officers of my own choosing. Chief among these was 'Alf' Snelling, to whom I had said goodbye in the sandstorm on Lake Habbaniyeh eighteen months before. He came to me now as my Major-General in charge of Administration. I knew that the campaign in Burma would above all be a supply and transport problem, and I was determined to get the best possible man to take charge of that side for me.[16]

Here, Slim, having earlier acknowledged his own shortcomings as a staff officer, and upon realising the particular importance of transport and supply in Burma, actively sought an individual that could 'take charge of that side' for him. In effect, he purposefully built a team that minimised his weaknesses.

Of course, choosing your team is a luxury that not all those in leadership positions have. And as a counter-argument, Slim sounds a note of caution:

I do not believe in the system… of commanders when promoted taking with them from the formations they leave, the cream of their staffs. These travelling circuses, grouped around particular generals, cause a great deal of heart-burning and confusion. Not only is the subordinate headquarters skimmed of its best officers, but in the higher, a number of efficient and worthy officers are abruptly thrown out to make room… I am not at all sure either that the practice is good for the generals concerned themselves.[17]

However, a balance can be struck when building a team, as Slim showed to great success, in employing another's strengths to cover one's own weakness. These examples were chosen because the first is modern and political, and it is to the politicians that we ultimately answer, and the second is historical and military. The combination

11   Owen, Jo. *The Leadership Skills Handbook: 50 Essential Skills You Need To Be A Leader, 3rd Edition, (London: Kogan Page, 2012) 27.*

12   *Ibid.*

13   *Glendinning, L., How the feud between Gordon Brown and Peter Mandelson thawe, The Guardian, October 3, 2008* https://www.theguardian.com/politics/2008/oct/03/mandelson.labour2

14   *Richards, Steven. Whatever It Takes: The Real Story of Gordon Brown and New Labour, (London: Fourth Estate, 2010) 370.*

15   *Slim, Bill, Defeat into Victory, (London: Cassell & Company Ltd., 1956) 18.*

16   *Ibid., 169.*

17   *Ibid., 168-9.*

of the two shows that the point of this article is neither confined to the military context, nor the current climate. Instead, this link between self-awareness, team-awareness and how to optimise both, is an enduring theme that deserves greater prominence in our leadership doctrine.

In 2015 General Sir Nick Carter challenged newcomers to the General Staff, and effectively all those in leadership positions, to take his leadership test.[18] In it he asked a series of questions. These included: How well do you know your soldiers? Do you listen, do you encourage learning, and do you set sensible constraints and then allow soldiers to learn from honest mistakes? Have you ever wondered what your soldiers think of you? Do you care? What do you do to improve yourself as a leader? Do you live by the values and standards that you expect your soldiers to live by?

Whilst these questions, or questions like them, are no doubt asked by most in command, leadership or managerial positions, they still strike a chord for their simple clarity. But there may be space for one more: 'How does your team maximise your strengths and minimise your weaknesses, and how do you play to theirs?' To 'Know Thyself' is an important start, but from Sun Tzu to Slim, 'Knowing Thyself' is simply not enough. Knowing the limitations of yourself, and your team, and *how they can be tailored to bring out the best in each other*, is the key nuance, and is what our doctrine does not document. And while clearly in some quarters it is practised, it certainly is not much preached. It should be.

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18   *Army Leadership Doctrine, 47.*

Pictured is a member of 5 RIFLES issuing orders whilst taking part in a multinational (Canadians and Italians) exercise in Estonia as part of NATO's Enhanced Forward Presence (eFP). **Photo: Lance Corporal Craig Williams, Crown Copyright**

Hide and Seek: Opportunities for Camouflage and Concealment (CC)

Colonel Peregrine J Lewis provides analysis on the art of concealment and deception. This is in line with the article *The Plus Ca Change of Deception* by Captain Neil Verrall published in BAR 169 Spring 2017.

Pictured is the UK Main Battle Tank, Challenger 2 Theatre Entry Standard (CR2 TES) fitted with a Mobile Camouflage System (MCS). This platform is the reference vehicle for the British Army and it is held at the Armoured Trials and Development Unit (ATDU) in Bovington.
Photo: PO Owen Cooban, Crown Copyright

Hiding is back. After decades of COIN requiring us to deter by visible presence, we are now having to refocus on concealment to help protect ourselves from a peer conventional enemy. Deception, both at the Operational and Tactical levels (Camouflage, Concealment and Deception (CCD)), has regained interest and I was recently tasked by the Army Strategy Directorate to undertake a study of the potential and opportunities for CCD.

Unfortunately our foe is rather good at Seeking. Land Intelligence Fusion Cell (LIFC) recently concluded that there has been a significant change in the environment, with a volume and capability and full spectrum range of enemy sensors that makes our ability to deceive the enemy more difficult than ever.

This change may demand revision of the effects that we can try to have through CCD: at best we may be challenging our adversary's decision-making process and introducing dilemmas for this process and his collect resourcing.

DISPELLING SOME MYTHS
Myth 1: Camouflage & Concealment (CC) is Deception.
CC has much in common with Deception and they are complementary, operating within the Cognitive domain. But they are different.

Regardless of the tactical, operational or strategic level, deception is about simultaneously showing something whilst hiding something; this is also referred to as 'showing the false' and 'hiding the real'. Showing the false (which is overt) involves mimicking, inventing and decoying, whilst hiding the real (which is covert) involves masking, repackaging and dazzling. Barton Whaley, a deception expert, stated that *Both [showing and hiding] are always present together in any single act of deception. Nothing is ever 'just' hidden; something is always shown*

in its stead, even if only implicitly…It is the two in combination that misdirect the attention and interest of the target. Therefore, the fundamental model of deception possesses these two elements.[1][2]

However, emerging doctrinal thinking, in particular NATO's *Allied Joint Doctrine for Operations Security and Deception (AJP 3.10.2)*, does not distinguish between Deception, Camouflage and Concealment[3] and Countersurveillance.[4] Nor does CC consider counter-deception, which is an intelligence responsibility.[5] Therefore, whilst a combination of capabilities[6] would be needed to adhere to the principles of Deception, individual capabilities are recommended to deliver a Deceive effect, rather than Deception *per se.* So the recent Strategy study focussed on CC although the capabilities identified would be available to Operational Deception planners.

Myth 2: Deception saves lives. It is widely accepted that CC contributes to 'the onion of survivability'. Current modelling and training methods do not readily facilitate CCD. Ensuring a proportion of training is done against a live, free-thinking force would engender a more routine consideration of CCD.

Myth 3: It's against the law. Deception is covered by the Law of Armed Conflict (LOAC)[7] (para 5.17-5.17.3), 'Ruses of war are…measures taken to obtain advantage of the enemy by mystifying or misleading him. They are permissible provided they are not perfidious and do not violate an agreement.' Examples of acceptable ruses are 'the use of camouflage, decoys, mock operations and misinformation' and Army operational lawyers will advise on specific Tactics, Techniques and Procedures (TTPs).

LESSONS FROM THE PAST AND OTHERS
The Strategy study looked at a wide range of experience from the Second World War onwards, including Op

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1   Rothstein, H., & Whaley, B. (2013). The Art and Science of Military Deception. London: Artech House.
2   By deduction, OPSEC should receive equal and complementary attention.
3   Hereafter abbreviated as CC.
4   Paragraph 1.14: …demonstrations as a show of force to threaten, ruses to trick, or electronic deception to manipulate, simulate or imitate electronic signatures; 1.15: Camouflage and concealment. The principles of deception can also be applied to more general activity designed to create confusion, which are not targeted, J2 informed or measured.
5   AJP-2 Intelligence, Counter-Intelligence and Security (Feb 2016), whereby counter-deception is stated as one of the four core roles of intelligence, specifically, the analysis of acts of deception conducted by an adversary.
6   in order to have substantive effect CCD measures must be layered upon each other under the control and coordination of Info Ops.
7   http://defenceintranet.diif.r.mil.uk/libraries/library1/DINSJSPS/20110714.1/20130122-jsp383_loac_2004.pdf

A left front view of an M998 multipurpose wheeled vehicle, modified to resemble a Soviet armored personnel carrier, parked in the desert at the National Training Center at Fort Irwin, California, USA. The vehicle is operated by the 177th Armored Brigade in their role as an opposing force. Photo: US Army, Released

BERTRAM (El Alamein);[8] lessons from the Kosovo Allied Air campaign; the Op GRANBY 'left hook'; recent Russian operations in Ukraine;[9] and contemporary experiences from Ops HERRICK and SHADER.

In addition, note was taken of the recommendations of the Future Operating Concept; the lessons from the Agile Warrior series (notably The Future of Military Deception study at RUSI[10]); Dstl's (Defence Science and Technology Laboratory's) handbook setting out principles of *Deception; the Dstl Divisional Structure Manual Wargame Headlines Report* and the recommendations of a recent 1 Brigade 'Scrapheap Challenge'. So what opportunities are there? The review used the Barton Whaley principles to group opportunities into Show and Hide.

SHOWING THE FALSE

Mimicking: It is feasible to mimic real presence by inflatable and rigid replicas such as hessian/wood dummies[11], similar to those used on Op BERTRAM, but replicas of current relevant UK platforms do not exist. Inflatable Russian platforms such as the T72 have been procured for Air targets. The Russians have recently introduced inflatable Fencer aircraft[12] and other nations (including Germany) have invested in bespoke platform decoys. These are principally visual decoys and would need to be supplemented in the thermal and acoustic spectrum to be successful.

This multi-spectral approach is key and is considered technically feasible by Dstl. Indeed, Saab Barracuda

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8   As reported in British Army Review No 62 Autumn 2014/15. This contains an excellent summary of Examples of Battlefield Deception and Supporting Measures with Methods and Objectives.

9   In particular, the Russian demonstration of Maskirovka (Deception). Maskirovka is defined in the 1978 Soviet Military Encyclopaedia as 'A means of securing the combat operations and daily activity of forces; a complex of measures designed to mislead the enemy as to the presence and disposition of forces and various military objects, their condition, combat readiness and operations and also the plans of the commander....Maskirovka contributes to the achievement of surprise for the actions of forces, the preservation of combat readiness and the increased survivability of objects.'

10   The Future of Military Deception 6 Sep 16 Insights and Summary Notes: http://cui1-uk.diif.r.mil.uk/r/852/Concepts/03/06/160906-DFD-MILDEC-Workshop_Insights.pdf

11   1 Bde study.

12   source WWW.

AB have produced a number of tactical decoys for the Swedish military, based on military vehicles and aircraft with thermal, infra-red and radar signatures. But these options are immobile and there is an associated manpower and logistics cost that goes with them. What is uncertain is the deception effect: there is little, if any, empirical evidence needed to support their use and impact in the tactical battle in order to ensure that benefits warrant the costs.

The focus of this work has been on platforms but even an AI Battle Group has a significant, vulnerable footprint and points with a significant Electromagentic Spectrum (EMS)/Audio/Olfactory signature. The mimicking capabilities applied to platforms could be extended to protect HQs and vulnerable points.[13]

Electronic mimicking: During Operation Granby, 14 Signal Regiment contributed to the deception plan by manoeuvring whilst rebroadcasting pre-recorded signals traffic. Technological advances mean that today this would need to emulate different bearer signatures, the frequency bands and geolocation information amongst others. This is a significant undertaking, but would have significant benefit. Cyber enhancement could be added to the above approach by the use of live streaming apps such as Periscope™ to provide fake visual (re)broadcast options.

Manoeuvre to Support mimicry: The Serbian Army succeeded in Kososvo with false cratering on bridges and airfields, using rudimentary low cost techniques. In this case fires were lit 'inside' false craters to enhance the signature. Dummy concentrations of suitable repair vehicles and material, such as fascines and fake obstacles, might suggest alternative manoeuvre corridors. Dummy defence stores is also feasible, to enhance canalisation. However, all come with manpower and logistics costs.

Inventing and Decoys: UAS 'swarms' (whereby a single operator can control the overall movement of multiple systems, enabled by artificial intelligence) could potentially achieve a deception effect without the excessive manpower burden associated with the current 1:1 mapping of operators to unmanned systems. Such a capability does not yet exist, however, as part of a wider
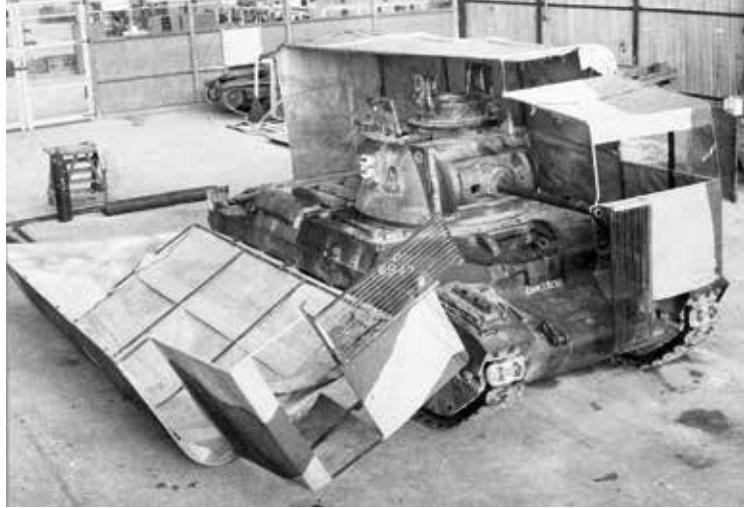
'Sunshield' split cover, one half on, one half off a tank in the workshops at Middle East Command Camouflage Development and Training Centre, Helwan, Egypt, 1941, as used in Operation Bertram. *Photo: British Middle East Command Directorate of Camouflage, Released.*

has funded a Defence and Security Accelerator (DASA) competition[14] to consider the technology and potential applications of swarming systems. Suitably enabled by multi-spectral mimicry, deception would be a potential application of interest.

Conventional ground based mobile dummies were discounted due to logistical demand[15], although the RAS approach could be applied to ground as well as air platforms. Holographic dummies do not exist yet[16] and are unlikely to be fielded anytime soon.

HIDING THE REAL
Masking: A key lesson from the 1 Brigade study was the need to relearn tactical concealment disciplines, such as track discipline, which were essential to concealment success. Mostly, these do not require additional capability but do require the practise of good fieldcraft. It is therefore unsurprising that Commander Field Army has driven the Battlecraft syllabus.

Static masking: It is possible to conceal a static vehicle but the absence of signature is a signature in itself (black holes). So static masking is most effective against a restricted sensor or when there are dummy positions to support masking. Personnel movement around the vehicle, which may be sufficient for identification, can

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13   *Cap Strat have suggested that committing to Masking would require a policy for every new LE capability that directed inclusion of a funded project for a deception fleet eg 10% of the 'real' Land Fleet Requirement.*

14   *https://www.gov.uk/government/publications/cde-themed-competition-many-drones-make-light-work*

15   *This information comes from a study conducted by the author concerning logistics, particularly the associated manpower and transport lift, concluding that the reallocation of currently allocated resources could not be justified.*

16   *Although Raytheon may have applied for a patent for 'battlefield hologram technology' in 2015.*

only be countered by sufficiently large camouflage sheet systems, burial[17] or individual protection (dealt with later). Dstl have investigated the performance of Commercial Off-The-Shelf (COTS) multispectral camouflage nets compared to the current in-service system. Results to date have not yet been conclusive, but operator skill has been identified as key to performance: it is possible that the ability to rapidly deploy and maintain a system to its fullest potential may be a crucial design driver. A specific benefit of a rapidly-deployable system may therefore be the ability to remain concealed at reduced Notice-To-Move (NTM) times.

Mobile masking: The need for improved AFV signature management is well accepted particularly when our potential enemies are well equipped with integrated contemporary Surveillance and Target Acquisition (STA) systems. Visual and Infrared (IR) signature are likely to be key enablers to Detection, Recognition and Identification in direct contact but Milimeter-Wave (MMW) radar systems cannot be discounted, particularly in the case of sensor-enabled weapons[18] and masking needs to be pan spectrum to be effective. Mobile Camouflage Systems (MCS)(applique) are designed to be fitted to the surface of military vehicles, with the aim of reducing signature in the visual, IR and mmW bands.

Dstl assessment of COTS MCS in a trial suggests that signature reduction and control must be conducted as part of a system-wide approach, and that 'applique' systems are often a poor substitute for good practice in base vehicle design. In particular, roadwheels, tracks, exhausts and engine cooling air outlets often remain as unmanaged sources of thermal radiation, and therefore significant cues to detection, and recognition. Given that this MCS technology is mature and in service with other nations, a limited acquisition (e.g. a Battlegroup set) for Field Army evaluation may prove beneficial.

The benefits of low-glint paint systems and films, which reduce the natural surface shine but benefits remain difficult to quantify. Anecdotally, the use of Rubber Band Track (RBT) is said to reduce the acoustic signature of tracked AFV and it is believed that the Armoured Trials and Development Unit (ATDU) plan to conduct a thorough assessment of over the next year. Wheeled platforms such as Stryker generate considerably less acoustic signature by comparison with tracked AFV and are therefore often able to achieve tactical surprise.

Personal protection masking: The efficacy of Ghillie suits against visual sensors is known. Dstl have assessed a number of enhanced signature-managed clothing systems, which have shown limited potential to minimise IR detection rates. There may be some benefit in issuing these systems to specialist teams (e.g. sniper pairs, CTR/OP teams); but wider issue across Dismounted Close Combat (DCC) may be limited by the associated disadvantages of increased burden on the soldier.

As with mimicking, the masking capabilities applied to platforms could be extended to HQs but electronic concealment is likely to prove very difficult on an information hungry battlefield. Contemporary Operational and Tactical CIS networks are likely to present a considerable electronic signature particularly when multiple networks are co-located at HQs. Exercise JOINT VENTURE 16 showcased an industry-derived 'HQ of the future' concept demonstrator with reduced electronic signatures and emissions. However, even this is unlikely to remove the need for HQs to disperse and move, setting up and stripping down rapidly.

Repackaging or Visual Modification (VisMod): 1st (Armoured Infantry) Brigade (1(AI)Bde) considered they had success in improvised imitation of alternative platforms against complex sensors, using only battlefield debris. Both A vehicles imitating other A vehicles and A vehicles imitating B vehicles was tried but success varied according to the complexity of the platform being imitated and whether it was static or mobile. It also required specialist skills such as metalsmiths. The BAR review of Op BERTRAM confirmed the complexity and support required for successful A vehicle imitation that probably makes it feasible for key signatures only. Using A vehicles to imitate B vehicles such as Mastiff or Support Vehicles is unlikely to be effective. The imitation of A vehicles by B vehicles is discounted due to vulnerability when targeted. 1 (Armoured Infantry) Brigade found that a dedicated repackaging kit would have utility, particularly in areas such as reducing weight and addressing the full ISTAR spectrum.

The UK has previously fitted VisMod kits to the BATUS OPFOR fleet, allowing CVR(T) to mimic enemy platforms such as T-80 and BMP. The DE&S in-service support team for CVR(T) could potentially offer a route to sourcing bespoke VisMod kits to reduce the burden on individual units and provide a more convincing signature across visual, IR and mmW spectra. Further studies would be required to confirm the priorities for VisMod kits.

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17   as recommended by 1 Bde
18   Brimstone has an active mmW seeker, as do a number of sensor-fused munitions deployed by Russian depth fire equipment

Pictured is a Russian inflatable T-72 dummy tank of the 45th Separate engineer-camouflage regiment. **Photo: Vitaly Kuzmin, Creative Commons** *Attribution-Share Alike 4.0 International License, @vitalykuzmin.net*

Dazzling: Most techniques address hiding but illusory camouflage (commonly, dazzle paint but also saccade[19]) was considered. In these cases a target is evident but it (or aiming points) is difficult to acquire either because of obscure silhouette or sight dazzle. This could be especially significant in built up areas: applique saccade armour could be developed for FIBUA.[20] The outloading and application also has potential for Deception.

Dazzling by chaff or sensor saturation (swarming) is feasible across a range of sensors. In all cases the effect is considered temporary (in the case of chaff, seconds) but may be sufficient to slow the enemy decision cycle by requiring the cross cueing of other sensors, or to achieve a temporary advantage. Possibilities are:

- *Audio. Use of tactical loudspeaker to broadcast audio of vehicle movement.*
- *EMS. Use of broadcast/rebroadcast signatures, possibly using blue force trackers or mobile phones (this use would require changes to current EMCON TTPs).*
- *Chaff. Remotely delivered by UAS, for example, while artillery chaff optimised against key sensors could produce a temporary 'smoke' effect. No such capability exists[21] and development is needed particularly to extend the duration of effect. Dstl and other nations have demonstrated the feasibility of multi-spectral obscurants (including opacity to mmW radar), but effects are typically very localised and very short duration. Understanding the benefits of conventional and novel battlefield obscurants in the context of Divisional warfighting against a peer enemy needs experimentation.*

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19   *Which generates movement from a static image Some of the best illusion work is produced by Akiyoshi Kitaoka at Ritsumeikan University in Kyoto, Japan and examples can be found at: http://www.ritsumei.ac.jp/~akitaoka/index-e.html*

20   *A QinietiQ study (Jones, R.J.M., Shohet, A., Serle, W., McSherry, I.R., Moorhead. (2009). Alternatives to Conventional Camouflage. QINETIQ/09/01018) did not yield conclusive results and of note such patterns may actually increase probability of detection against many backgrounds.*

21   *The Germans may have developed a pyrotechnic composition that produces a screen across the visual-IR-mm-cw bands but it is of very limited duration ie multiple payloads would be needed to provide solution.*

- *Swarming. The use of unmanned 'swarming' systems described earlier could also be used to achieve a 'dazzling' effect by saturating threat sensors with signatures. Ideally, the payload of such systems (which might include software-defined radios and active signature modification kits) could be 'tuned' to achieve the required effect. Such an approach is technically feasible, although its practical application will need to be proven.*
- *Cyber. The use of social media to broadcast images of vehicle movement is outside the scope of this study but feasible. It requires capture of suitable imagery.*

EMPLOYMENT, TRAINING AND MANPOWER

The British Army is out of practice in CC and cunning and imagination is lacking among many staff: it is not in our bloodstream unlike Russia where deception *(maskirovka)* is a national (cultural) characteristic. The sensor capability of our most capable enemy may need replication to develop this DNA. Reinvigoration requires emphasis, training, practice and exploitation of Suitably qualified and experienced personnel (SQEP) who practice CC. Tactically, introduction of any new capability will require development of TTPs and subsequent training. There is a need for more (and better) field trials, exercises and experimentation to be shoehorned into the crowded training programme.

Perhaps the Surveillance Target Acquisition, Night Observation and Counter-Surveillance Centre (STANOC) needs to be re-established as a centre of excellence for CC to provide informed input to doctrine, policy, training, and equipment x-DLODs.

1 Brigade suggested that an uplift in dedicated manpower may have merit but not at the expense of other fighting power.[22] Given the constraint on Army manpower, it may be specialists are required to achieve the best effect[23] and that civilian SQEP are desirable: consideration should be given to creation of a specialist unit, possibly hybrid or reserve.

Many recommendations come with significant logistics bills. For example, UAS will require Combat Service Support (CSS). Emitters will require Combat Support (CS) and Communications Information Systems (CIS) support. Dummy manoeuvre will require CS support and so forth. A new unit would not absorb these burdens and they will have to be borne alongside other tasks.

COSTS AND SUSTAINMENT

No funds have currently been allocated for future development of CC. Costs for the work in progress, such as it is, might be described as 'immature' and unfunded. For equipment, these are costs for introduction and initial issue only and as some recommendations identify single use, and some capabilities will have life limitation such as dummy structures and decoys while operating costs will be substantial. Further, there will be sustainment costs such as fuel and batteries that have not been

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22   1 AI Bde G2/Deception dated 5 Jan 17.
23   *The lack of SQEP (eg cunning, imaginative) staff in Info Ops is universally acknowledged. There may need to be future dedicated Deception planners training in which case a simplified version might be suitable for tactical employment.*

A Chinook comes into land firing flares on its approach in Helmand, Afghanistan. The decoys are designed to give a greater heat signature than the engines of the aircraft thus confusing any heat seeking missiles fired from the ground. Photo: Sergeant Will Craig, Crown Copyright

costed. So a key judgement must be 'what is the cost/benefit return compared to competing requirements?'

KEY DEDUCTIONS: A CALL TO ARMS

- *Camouflage and Concealment (CC) against a complex, pan spectrum ISTAR capability will need a multispectral approach and considerable resource to be effective. It must be complemented by development of OPSEC.*
- *At best, CC may only slow enemy decision making.*
- *CC must be included in all future platform procurement.*
- *The best opportunities over the next decade may be to enhance static masking by improved training*

and accelerated procurement of a replacement for the Mk7 Cam net and trials of a COTS ready Mobile Camouflage System.
- *Only some recommendations derive from existing work. The remainder require significant resource, including manpower, in a competitive environment. There is limited evidence to support resource allocation yet.]*
- *A low cost opportunity is the relearning of old skills and implementation through training. The reintroduction of STANOC could support this. Developing our own ISTAR capabilities may support developing appropriate human characteristics eg cunning.*

Down the chimney like Father Christmas

Major Mike Tickner looks at the challenges and lessons of Air Logistic Support during the Burma Campaign

An RAF dakota drops supplies to West African troops in the Arakan area, November 1944 © IWM (SE 2622)

*A*ir supply was used on a scale greater than any other theatre of war. Its success was due to the splendid integration, co-operation and energy of the air forces concerned and the various ground organisations all of which started from scratch with very little previous experience. This success has undoubtedly been one of the features of the campaign.[1]

Whenever possible during the Burma campaign, General Bill Slim would take breakfast with Air Marshall John Baldwin. Slim commanded the 14th Army and Baldwin was AOC 3rd Tactical Air Force[2] and both component headquarters were co-located, building upon the best practice they'd learned from the 8th Army and the Desert Air Force during the Western Desert campaign.[3] This close relationship between the Land and the Air components enabled an impressive level of cohesion. Slim's first experience of air resupply was in 1928 as a staff captain on India's North-West Frontier and he understood the potential but also the need for close cooperation between the Land and the Air components. Not only did this relationship in Burma deliver highly effective Joint Fires, but it also provided the ability to resupply and to move personnel and pack animals by air giving the Allies a strategic advantage over the Japanese that ultimately lead to victory.

THE CHALLENGE
North-East India and Burma provided one of the most challenging environments in which to conduct a major campaign. The border was covered with jungle and mountains and central Burma was a dry belt in a horseshoe of mountains extending up to China and the Himalayas. Major rivers up to 1½ miles wide and a network of tributaries led to the jungles of the Arakan tidal mangrove swamps[4] and then to the Bay of Bengal. The four month monsoon period would disrupt operations when up to 400 inches of rain could fall,

destroying roads, curtailing ground and air movement and leading to the increase in disease.

Burma and the remote border with India had minimal infrastructure to support the Allies' operations. Rail was the most effective means of long distance movement in India but the network was orientated to move raw materials to the ports, grain from the Punjab and to move troops from the ports via the garrison towns up to the North-West Frontier. The narrow gauge railways in remote North-East India were built to move tea from Assam to Calcutta for export. Rivers were the ancient transport arteries of Burma and the movement of goods and people between India, Burma and Malaya was by ship across the Bay of Bengal and along both coast lines. Consequently, prior to 1942, GHQ India did not consider that there was any threat of an invasion across the Burmese border.

Calcutta was a major rail hub and sea point of disembarkation with railways extending 600 miles eastwards up to the last railhead at Manipur Road in Dimapur but still 320 miles short of Chindwin River. All rail freight had to be transferred by hand from Indian broad gauge wagons onto narrow gauge trains and then had to cross the Brahmaputra River by a ferry which could only handle 125 wagons each day.[5] Few roads existed capable of serving as a main supply route. The limited routes and infrastructure were pressured further by 700,000 refugees from the Japanese invasion of Burma and Malaya, the wide scale civil dis-obedience of Ghandi's 1942 *Quit India* campaign and the effects of the tsunami and the subsequent Bengal famine[6] where it is estimated that 3 million people died.

The immediate response was to improve the efficiency of existing rail links and to build new roads. A dedicated headquarters was established to control the extensive lines of communication. The Tea Planters Association

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1   *Operations in Burma from 12th November 1944 to 15th August 1945, The London Gazette, 12 April 1951.*
2   *Slim, William, (1956), Defeat into Victory, (Cassell and Co Ltd), Page 244.*
3   *The 14th Army and 3 TAF did co-locate however, in the desert Monty insisted they shared an Officers' Mess that implies they were in close proximity.*
4   *The Arakan (or Rakhine State today) is tidal mangrove on the coast as well as a huge fertile forested area bisected by rivers. It covers 37,000 Km2.*
5   *Thompson, Julian, (1991), The Lifeblood of War: Logistic in Armed Conflict, (Brassey's London), Page 83*
6   *There was a major earthquake in the Andaman and Nicobar Islands in the Bay of Bengal in June 1941 which caused a tsunami and by 1942 food shortages had become significant. Adding to the problem was crop-blight and a cyclone in June 1943. All of these factors and more added to the problem.*

Troops of 5th Indian Division loading a jeep into a Douglas Dakota Mark III of No. 194 Squadron RAF, during the reinforcement of the Imphal Garrison. Known throughout the Burma Theatre as "The Friendly Firm", No. 194 Squadron maintained intensive troop and supply sorties into Burma, and Imphal in particular, between March and June 1944. © IWM (CF 145)

used their existing network to recruit 30,000 workers from across India to improve the existing road and extend it by 79 miles from Dimapur to Kohima and then Imphal. However, this would not be sufficient to sustain a major campaign and alternative means would need to be found.

SUPPLYING THE CHINESE NATIONALISTS

Chiang Kai-shek and the Chinese Nationalists had been fighting the Japanese since 1937. Following Pearl Harbour, America conducted a train and equip programme for the Chinese Nationalists to fix Japanese forces in a damaging counter insurgency campaign in China and away from the Pacific campaign. In addition, this programme would provide conventional Chinese forces that would ultimately be used for the re-conquest on Northern Burma.

Sustaining the Chinese Nationalists provided a significant challenge as a usable ground line of communication did not exist and so the Ledo Road was built to move materiel to support China. This 1,465 mile long route through jungle and mountains from India and through Burma to China became known as the *'Man a Mile Road'* because of the terrible death toll among the construction workers and would take 26 months to build but was too late to

meaningfully contribute to sustaining Chinese forces. Resupply by air provided a solution; flying a 1,000 mile round trip over the Eastern Himalayas, known as 'The Hump'. This was a dangerous task and 373 aircraft were lost flying a total of 685,000 tons of stores and 33,400 personnel into China. It was these US aircraft and their new airfields that would assist the 14th Army.

THE CHINDITS: SUSTAINING RAIDS

In April 1941, 1st Battalion King's Own Royal Regiment deployed from Karachi then in India to Shaibah in Iraq in the first strategic airlift of British troops[7] and the US had provided limited air resupply during the British retreat in 1942 but Air was not fully exploited until the Chindit operations. The brain-child of Brigadier Orde Wingate, Operation LONGCLOTH was the first Chindit operation in February 1943. A force of 3,000 men marched in columns[8] into and out of Burma and was resupplied by air despatch. Sustainment was austere, casualties had to be abandoned and resupply negligible, for example No 5 Column received only 20 full days' rations during their 80 days in Burma. Marching over 1,000 miles during the operation, only 2,000 Chindits returned to India and the survivors were decimated by disease and starvation with only 600 able to continue to serve as front line troops.

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7   *Lyman, Robert, (2006), Iraq 1941: The Battles of Basra, Habbaniya and Fallujah, (Osprey, Northampton), Page 29.*

8   *A task organised force with organic combat support and sustainment elements, RAF forward air controllers and mules. Columns were up to 400 men strong on Operation THURSDAY.*

Mistakes were identified and mainly resolved by the time of another Chindit expedition, Operation THURSDAY in March 1944, where Air-Land integration provided a key foundation. A force of 20,000 Chindits and mules deployed by Dakotas and gliders from No 1 Air Commando into strongholds[9] or operating bases with airstrips then, from there, launched operations into Japanese rear areas. They were resupplied by air and casualties were extracted by air to hospitals in India. Wingate explained his concept as:

> Have no L of C on the jungle floor. Bring in the goods down the chimney like Father Christmas.[10]

Operation THURSDAY was sustained by 758 sorties[11] and achieved much greater success than the first Chindit operation. However, when the force was extracted, 19 casualties from 111 Brigade could not be evacuated. Medics were ordered to ensure that these casualties were not captured alive by the Japanese.[12] 3,800 Chindits were either killed or wounded and half of those who returned to India were hospitalised for malnutrition and disease.

THE BATTLES OF THE ADMIN BOX, KOHIMA AND IMPHAL

Japanese tactics centred on envelopment and probing attacks into flanks to create the perception of, as much as the reality of, being surrounded. This had enabled them to force the surrender or flight of numerically superior forces during the invasion of Malaya and Burma in 1942. During the retreat, General Alexander came to understand that this tactic would fail if British and Indian troops stood firm but this would require:

> '…defended localities well stocked with reserves and supplies and ammunition'.[13]

He later employed this concept with defended 'boxes' in the Western Desert, for example the Knightsbridge Box at Battle of Gazala, but they were never resupplied by air.

In February 1944 the administrative area, or Admin Box[14], of the 7th (Indian) Division at Ngakyedauk in Burma was surrounded by the Japanese 28th Army's advance into the Arakan. A scratch force of combat troops and admin personnel established a 'box' and did not withdraw. During the 17 day siege, over 2,000 tons of

A wounded soldier, evacuated by air from the fighting in the Kalapanzin Valley, is lowered onto a stretcher by medical orderlies at an advanced airfield in the Arakan, as the ambulance aircraft, a De Havilland DH.83 Fox Moth, is refuelled. The pilot, a former London policeman , Flying Officer Edwin E Mackay of Carlisle, watches from his cockpit. © IWM (CI 612)

stores were dropped by 900 sorties into the Admin Box , but more significant was the evacuation of the wounded by air. A casualty, who might have previously died in the jungle, could now be in an operating theatre in India only a few hours after wounding. Psychologically this was a game changer.

These capabilities were exploited further during the battles of Kohima and Imphal two months later. Again the besieged forces were resupplied by air, receiving over 19,000 tons of stores. 12,000 men were flown in and 13,000 casualties extracted and resupply included not only combat supplies but magazines, newspapers, post,

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9   Wingate took his inspiration from the Old Testament - 'Turn ye to the stronghold, ye prisoners of hope' (Zechariah 9:12).
10   HMSO (1946), The Burma Campaign, Page 38.
11   Royal Air Force Historical Society (1995), The RAF and Far East War 1941 – 1945, (Fotodirect, Brighton), Page 52.
12   Masters, John (1956), The Road Past Mandalay, (Oldham's Press Ltd, Watford), Page 251.
13   Holland, James (2016) Burma'44 (Transworld Publishers, London) Page 109.
14   HSMO, Page 57.

rum and over 2 million cigarettes[15] with photographs of the battlefields clearly showing discarded parachutes hanging in splintered trees. However, resupply was not only dangerous to the aircrew but also to the soldier. The war diary of 4th Battalion Queen's Own Royal West Kents at Kohima recorded that soldiers were killed by air despatch loads[16] and that they received incoming fire from British 3' mortars when replacement tubes and ammunition were dropped by mistake to the Japanese rather than onto British positions. At all three battles, the Allies had not withdrawn and maintained combat power through regular and effective air resupply. The Allies won all three of these battles while the Japanese melted away into the jungle. By this time the Japanese supply chain was weak and was heavily reliant upon capturing Allies' stores.[17]

COMMAND AND CONTROL

An effective system of air logistic support was reliant upon an effective command structure. In December 1943, RAF Bengal Command and the 10th United States Army Air Force (USAAF) were combined into *Eastern Air Command* under the command of Allied Command South East Asia. The Combined Army Air Transport Organisation (CAATO) commanded the air heads with the Rear Area Maintenance Organisation (RAMO) receiving, configuring and preparing stores for dispatch and loading the aircraft and the Forward Area Maintenance Organisation (knows as '*FAMO*') unloading materiel for distribution. Coordinating delivery by air dispatch, or air landing was the responsibility of the Combat Cargo Task Force tasking Troop Carrier Command.

OPERATION EXTENDED CAPITAL: OFFENSIVE OPERATIONS

Following the defeat of the Japanese at Imphal and Kohima, the 14th Army launched Operation CAPITAL in November 1944 that was a limited advance into Burma. 4 and 33 Corps were to capture the Shwebo Plain, advance to the junction of the Chindwin and the Irrawaddy rivers north of Mandalay and then link up with the Chinese advancing from the north. Concurrently, 15 Corps would conduct amphibious operations along the Burmese (Arakan) coast to capture airfields at Akyab and Ramree, shorten resupply routes and reduce the requirement for US Air support. Opportunities were identified to extend
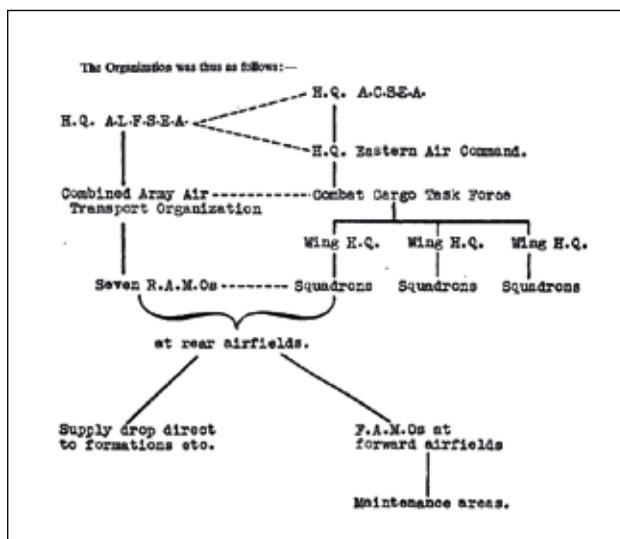
Figure 1: Source: The London Gazette. 12 April 1951

the offensive further, advancing into Burma's central plain to capture Meiktila and then advancing south to Rangoon, the capital of Burma and a major port. Named Operation EXTENDED CAPITAL, it was a tactical and a logistic high risk venture[18] and had to be completed before the start of the monsoon in April/May 1945 when air resupply would stop, road resupply would be restricted and the 14th Army would have had to withdraw to a geographical point where it could still resupply itself.

By this stage in the war, air logistic support was well established and highly effective and the headquarters of the 14th Army and the 3rd Tactical Air Force were co-located and shared Messes. Each morning Slim met with his chief logistic planner, Major General AHJ Snelling (known as '*Grocer Alf*') and members of the air logistic planning staff and 14th Army, 3rd Tactical Air Force and the USAAF Troop Carrier Command staffs consistently conducted joint planning.

The distance from Kohima to Mandalay was 527 miles and a further 433 miles to Rangoon. Maintaining, administering, controlling and defending a main supply route of that length was beyond the resources of the 14th Army. Snelling would design a bold logistic plan so that by April 1945 88% of the 2,800 tons required daily

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15   Fowler, William (2009) We Gave Our Today, Burma 1941- 1945 (Orion Books Ltd, London) Page 191.

16   WO 172 4884, File available in the National Archives.

17   The Japanese believed a half-starved man could still charge to his death. The reliance on captured Allied supplies was known as Churchill Rations. The Allies maintained (and in most cases increased) their fighting power while the Japanese became progressively weaker.

18   The reason it was a high risk venture was because once the monsoon started the 14th Army would have been cut off. It could no longer fight because it could not have been properly resupplied. The weather would have made resupply by air impossible and as a result hunger and disease would have devastated the Allies making them unable to continue to fight. Perhaps what the Japanese were hoping for?

A Douglas Dakota drops supplies by parachute to troops of the 14th Army on a bridgehead south of the Irrawaddy river. © *IWM (CF 415)*

was resupplied was by air[19] but would need significant resources. The mainstay of this operation was the C47 Dakota with a small payload of 4½ tons or 27 men and a range of about 250 miles, supported by a few of the larger US C46 Commandos. 200 new airfields had been built in India and 10 days of supply of rations for 40,000 troops and materiel was pre-positioned there. Back loading, sorting, checking, repairing and repacking parachutes was a major undertaking and 5% of India's cloth production was secured for their manufacture. Such was the cost, *'para-jutes'* were made using jute sacking material readily available in India and would cost £1 each rather than £20 for a silk or cotton parachute.[20]

Only 50 miles of road would be maintained forward of an airhead. Engineers and FAMO would establish a new airhead, sustain the lead Divisions, then leap-frog forward when necessary, building a new airhead and road then abandoning the former road and airhead. Casualties were evacuated by Sunderland flying boats landing on rivers

or by L5 Sentinels flown from 150 yard airstrips to the airheads for prompt dispatch to India. Demands could be received by forward element within 12 hours of being placed, with aircraft often arriving at airheads every two minutes and unloaded by FAMO in less than 15 minutes. Air landing was increasingly used to conserve resources because 25% of stores delivered by air dispatch were lost or damaged.[21]

Even though additional aircraft had been transferred from the Mediterranean theatre, there remained a constant tension over securing sufficient air transport particularly as the US's priority in the Burma campaign was the Hump and supporting the Chinese Nationalist advance into Northern Burma. While lack of air transport never delayed operations, robust prioritisation was essential. With the monsoon arriving two weeks early and with increased ammunition and fuel usage, all units were on half rations for the last 34 days of the advance to Rangoon.[22] The sustainment plan had worked.

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19   Thompson, Page 97.

20   HMSO, Page 46.

21   28% of stores delivered by air dispatch in November 1944 but only 14.6% by March 1945, Source HMSO Pages 353 and 363

22   Thompson, Page 99.

CONCLUSION

The Burma campaign was fought in the most brutal of terrain, in the most brutal of climates against the most brutal of enemies. A conventional road-based logistic plan was not appropriate and bold and innovative solutions were needed. The resupply plan for Operation EXTENDED CAPITAL carried huge logistic risk, gambling on the monsoon not breaking early and banking on a single means of transport predominantly provided by a coalition partner. Yet from April 1944 to May 1945, the 14th Army received 609,717 tons of stores by air while RAF Bomber Command dropped 54,700 tons of ordnance on Europe during the same period. This crude statistic provides a measure as to the scale of air logistic support and the tonnage moved during the Burma campaign. The monsoon did break early but such was the resilience of the operating structures, the cohesion between the Land and the Air components and the quantity of airframes available, Rangoon was retaken.[23] This was the great sustainment success story of the Second World War and provided the expertise necessary for the Berlin Airlift in 1948 in a much colder and closer conflict.
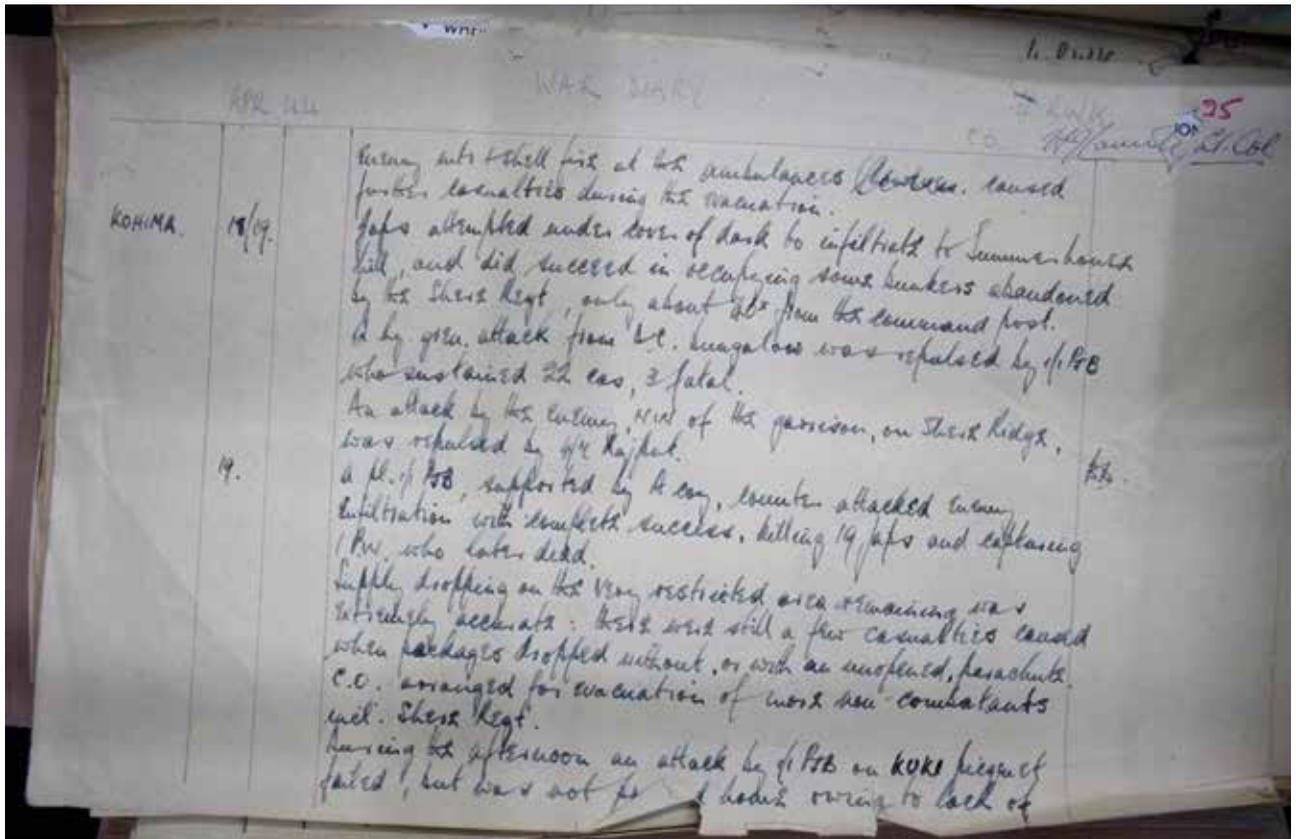
War Diary, 4th Bn Queen's Own Royal West Kent, Battle of Kohima, 19 April 1944, (WO 172 4884)

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23   *The Japanese chose to withdraw rather than fight for Rangoon and then began to extract to Siam and Malaya. By this stage their resupply system was broken (and had probably been turned off to save resources). The Japanese in Burma were defeated, however, the Japanese Army in Siam and Malaya had not been engaged in the fighting was still in a very good condition.*

A Douglas Dakota of No. 177 Wing RAF, carrying mail, ploughs its way through monsoon water on arrival at a forward airfield in the Arakan, Burma **© IWM (CI 718)**

Dieppe from the German Perspective: The British Failure

In the first of a 3-Part series, **Graham Thomas** analyses the German view of the allied landings at Dieppe on the 19th August 1942 and why the Germans believed the British failed.

German soldiers guarding destroyed Allied tank. Photo Tomkinsr, Creative Commons Attribution-Share Alike 4.0 International license, Wikimedia

How often have we heard the phrase 'the enemy has a vote'? I would suggest quite often but what does it actually mean?

We know the lessons that we learned from our more recent operations but what did the opponents learn from our strategy and tactics, and more importantly, what can we learn from their perspective on the British Army? For example, what do we know about how the Serbs, the Taliban and the Iraqi insurgents saw us and what they learnt from our tactics and strategy?

One excellent example of what the enemy is thinking can be seen in the Dieppe raid of 19th August 1942 by largely British and Canadian troops on the coast of France two years before D-Day. The Germans saw the operation as a failure.

The information comes from Allied documents the Germans took from captured Allied troops at Dieppe. Before examining what the Germans thought of British tactics and strategy it is worth looking at how the Germans set up their defences around the Dieppe area.

GERMAN DEFENSIVE POSITIONS

The German 302nd Infantry Division had, in preparation of their coastal defences, made allowances for the coastline, the 70km width of the Divisional sector, and the various slopes and ravines of the coast that led directly down to the sea. As a result the Germans did not use continuous defences, instead they concentrated their defences around key focal points such as ports and other places where it was possible for the allies to carry out an amphibious landing. The Germans did not have enough resources to set up defences of every ravine and they knew that they could not prevent the Allies from landing at Berneval-le-Grand and Varengeville-sur-Mer nor stop them from gaining localised successes using specialist troops.

The main German strategy was to create strong defensive points near ports enabling them to beat off any attacks by land or sea. However, key to their strategy was to have as many mobile reserves on hand as possible in order to strengthen the strongpoints at the ports and mount immediate counter-attacks wherever they were needed. That would generally mean attacking allied troops that
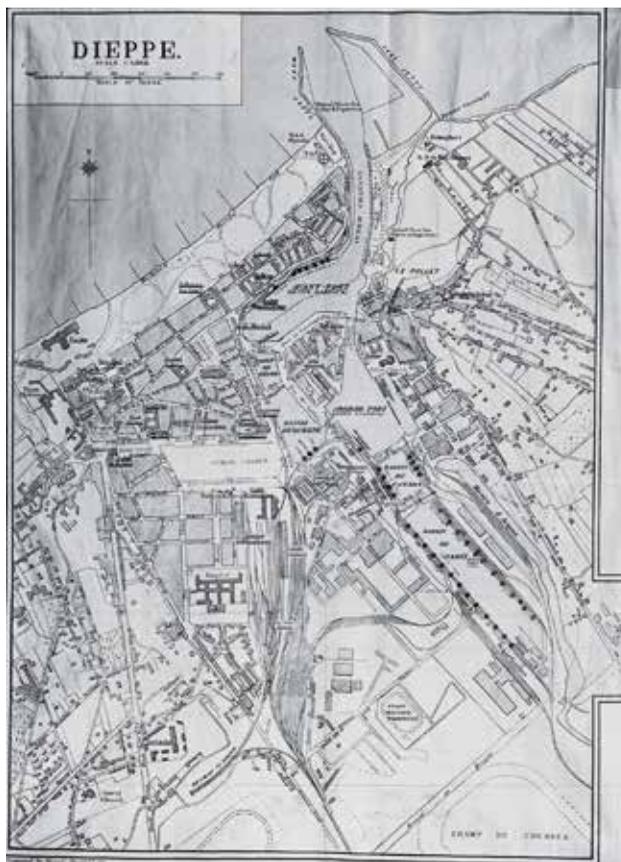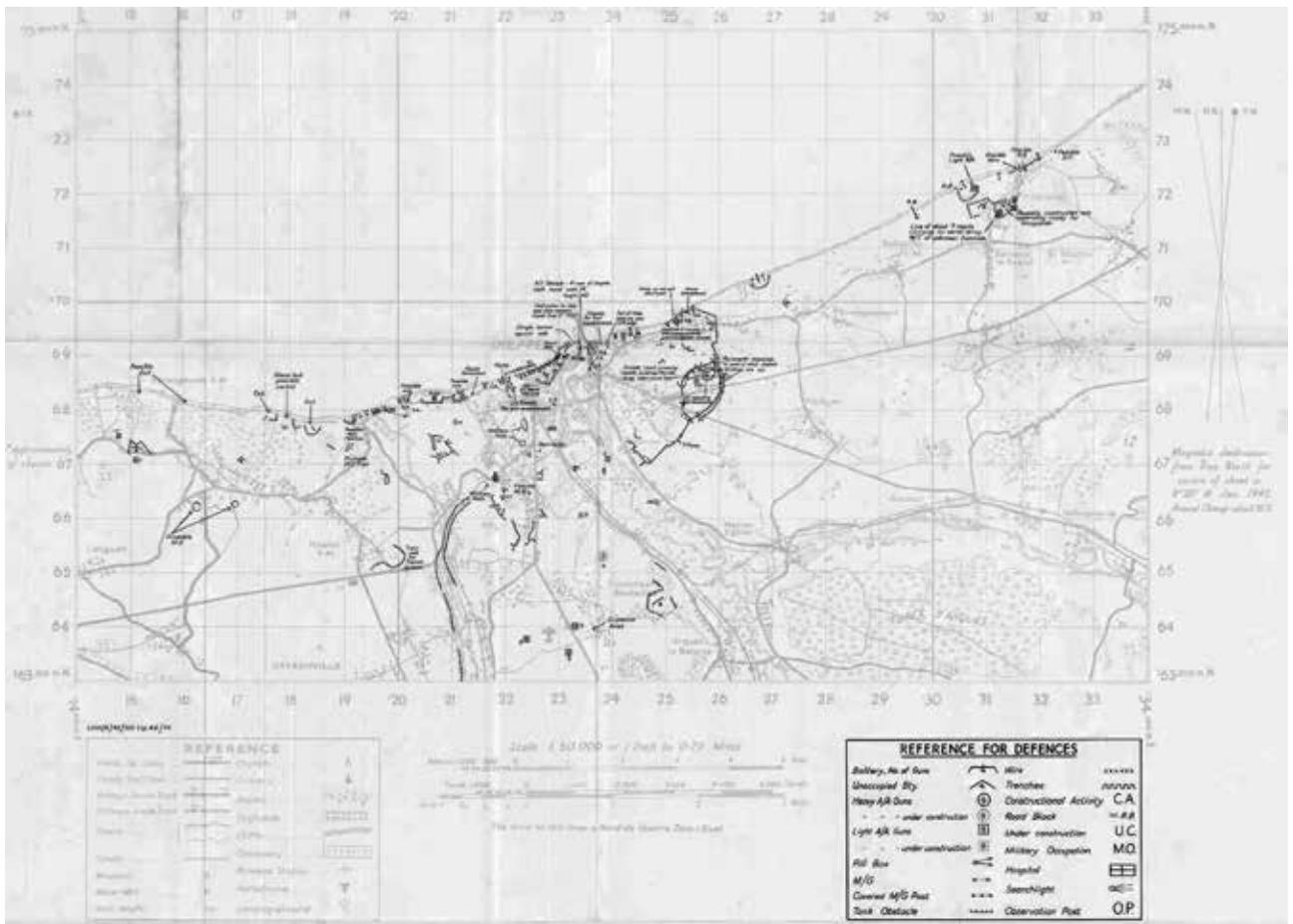

Map 1: A map of the town of Dieppe just before the Allied raid. From Report No 130, The Operation at Dieppe, 19 Aug 42, Pictorial and Cartographical Material, Library and Archives Canada.

landed between the German strongpoints. 'It is all the more important to withhold strong reserves as in any large scale assault the enemy will certainly launch a simultaneous Air and Sea attack against our coastal defences; the air attack consisting of strong airborne and parachute forces.'[1]

Within the Dieppe area, the Germans deployed the 571st Infantry Regiment and HQ with two Infantry Battalions, HQ Engineer Battalion and two Engineer Companies, eight Beach Defence guns and three 47mm Anti-Tank guns manned by Infantry troops. They also deployed the third battalion of the 302nd Artillery Regiment that was made up of two Batteries of Light Howitzers and two Batteries of only equipment and supplies plus, for coastal defence, the 265th Infantry Howitzer Battery.

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1   *Report No 116, Operation Jubilee, The Raid on Dieppe, 19 August 1942, Additional Information from German Sources, Directorate of History, National Defence Headquarters, Ottawa, Canada*

Map 2: German Defences in and around Dieppe. From Report No 130, The Operation at Dieppe, 19 Aug 42.
Pictorial and Cartographical Material, Library and Archives Canada

In addition, anti-aircraft units that consisted of one 75mm heavy AA battery, sections of 50mm, 37mm and 20mm guns respectively with 200 troops from different naval units were added to the defensive mix including 60 police and one experimental unit.

As for Corps Reserves, the Germans deployed the Regimental Headquarters of 676th Infantry Regiment at Doudeville, while in the Hericourt area they deployed the 1st Battalion, 676th Infantry Regiment, the 3rd Battalion around Yvetot and in the Bacqueville area they also deployed the 3rd division of the 570th Infantry Regiment. The 81st Tank Company was also deployed in the Yvetot area.

These reserve units proved to be extremely useful as they were able to rapidly reinforce the areas of the 302nd Division as well as units of the 332nd Infantry Division. The reserve units as outlined above were highly adaptable and proved to be very effective in countering the allied landings at Dieppe.

THE BRITISH PLAN OF ATTACK

The intention of the British plan of attack was clearly laid down in the documents the Germans captured from Allied prisoners of war. From these documents the Germans discovered that the British plan was to attack and destroy the coastal batteries near Berneval and Varengeville first using two commando units of 250 and 350 men respectively. This was to ensure these two batteries could not shell the initial landings, which was scheduled to be completed by 1530hrs in the afternoon of 19 August 1942.

The main objective of the British was to be the strongpoint area of Dieppe, where 7 Battalions, supported by special troops and one Army Tank Battalion (58 tanks), were deployed.

However, it was not apparent to the Germans if more units were to land should the first wave have been successful. 'It is possible that the convoy of 26 large boats which left Portsmouth about noon and which later

on turned about, was to be the second wave, should the operation have been a success.'[2] This is also supported by the fact that several allied prisoners said they'd expected support or relief from 1700hrs onwards.

The Germans believed that the maps the British were using were excellent as all the information on them had been obtained by aerial reconnaissance. This included the smallest detail of the German positions, and even the Dieppe Anti-Tank walls, which separated the streets from the harbour promenade were shown. However, the Germans discovered that the maps did not have the locations of their Regimental or other HQs. The German Divisional HQ was, for example, believed to be in Argues-La-Bataille where it had been situated many months previously, but had been moved since.

WHY THE GERMANS BELIEVED THE BRITISH ATTACK WAS A FAILURE

The British miscalculated the strength of the German defences and tried to 'grab the bull by the horns' by landing the main body of their invasion forces, particularly the tanks directly in front of the town of Dieppe. Although they were aware of the street defences in the town, the concrete constructions, anti-tank walls, machine gun positions and coastal guns, they persisted with this plan of attack, landing where the defences were strongest. The Germans knew this from the maps they took from prisoners of war. They found it difficult to understand why the British did not support the battalions that landed near Pourville with armour. An attack with tanks from Pourville against the hill west of Dieppe and against the '4 Ventes' Farm might have been successful, although it would have been most difficult to overcome the anti-tank walls, the pier and the SCIE dam.

A burning LCT (Landing Craft, Tank) TLC5 No. 121 near the beach after the raid by allied air, naval and land forces on German defences. Churchill tanks and bodies of allied servicemen are pictured on the beach. The tank at left is one from 9 Troop 14th Army Tank Battalion (The Calgary Regiment (Tank)) which was transported by TLC5. **Photo Library and Archives Canada C-014160, Released, Wikimedia**

2   Ibid

German soldiers examining a Churchill tank of the Calgary Regiment abandoned during the raid on Dieppe.
Photo Library and Archives Canada, Released, Wikimedia

The Germans did not understand why the British did not employ airborne troops. Had they attacked Puys simultaneously with airborne troops and from the sea, the position of the German troops defending Puys would have been tenuous at best and catastrophic at worst.

The Germans knew that the British massed employment of the air force against the coastal defences of Dieppe should have shattered their defences to such a degree that it would have enabled the assault battalions to break through the coastal defences. Yet, the British employed a heavy smoke screen over Dieppe that effectively diminished the accuracy of aerial bombing and ultimately the overall effect of the air attacks. In short, the smoke screen, as far as the air attacks were concerned, was a factor in the overall failure of the operation, in the Germans' view.

They did land light and heavy mortars but their entire combat order mentioned only one light battery and one light anti-aircraft section to be landed near Puys. However, this landing failed so the artillery was not employed. 'A few light assault guns would probably have been of more use to the British in their first attack, than the tanks.'[3] The landing force had no artillery support whatsoever due to the smoke screen, which made the fire control observation on the big ships virtually useless.

> *It is astonishing that the British should have underestimated our defence as they had details of most of it from air-phots; equally striking is the short time in which they expected to carry out the operation.*[4]

3   Ibid
4   Ibid

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

The operational order, almost 100 pages long, fixed every detail of the action for each unit of the invasion force. 'This method of planning made the failure of the whole raid inevitable in the event of unexpected difficulties.'[5]

The Germans captured 95 Allied officers and 2122 men. By 24 August the Germans had buried 475 men with the tide continuing to wash corpses ashore. 'A high percentage of enemy losses, which cannot, however, be estimated, was incurred at sea through our artillery fire and aerial bombardment, and through the sinking of landing craft, flat-bottomed boats, and destroyers. Total enemy losses probably amount to at least 60 to 70% of the landing force.'[6]

In Part 2 the battle itself is described in detail but from the German point of view, looking at how the Germans coordinated their defences to meet the Allied threat.

5   Ibid
6   Ibid

OPERATION TELIC:
THE BRITISH CAMPAIGN IN IRAQ 2003-2009
Tim Ripley
Review by **Major Chris Buckham, RCAF**
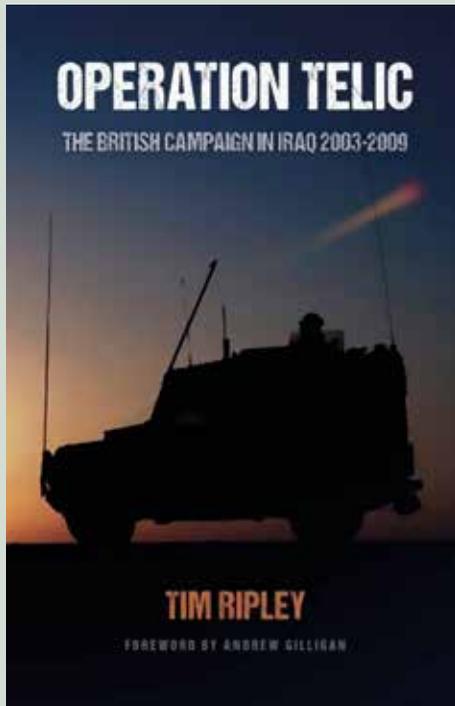
Telic-Herrick
Publications,
Pbk, pp 470, £14.99,
ISBN: 978-0-9929458-0-0,
Photos/ Maps: 35/6

The War in Iraq was not popular nor was it clean. After Afghanistan, it seemed to many that the challenges of asymmetric warfare would be left behind in Iraq; a second rate conventional army led by an unpopular, sociopath would be a relatively easy adversary after the Taliban. The British, led by Prime Minister Tony Blair, joined the United States as its primary ally, for a number of reasons, not the least of which was continued influence in the Middle East as well as a key position at the 'table'. The war was not popular with the British people and PM Blair expended a significant amount of political capital to win over Parliament. What was to be however, a short, sharp engagement and a victory for democracy turned into a six year war of nerves and attrition between the allies and the factional forces of post Saddam Iraq. *Op Telic* the book, iterates the challenges, successes, shortfalls and frustrations encountered by the UK forces from a political, doctrinal, inter-ally and CIMIC perspective.

That it is able to cover such ground effectively is testament to its brevity and accuracy. The author was able to draw upon the recollections of the key players down to platoon level as well as the primary documentation of the various units engaged in Iraq over the period of the conflict. The author was also able to display the level of complexity associated with warfare of this nature. What is evident is the degree to which government engagement and planning did not appear to extend beyond the military defeat of the Iraqi's. The US has been correctly criticized for its failure to plan beyond the fighting, but the British government was not clear of this failure either.

The West had very little appreciation of what would result once the strongman and his henchmen had been removed and the traditional animosities and hatreds, suppressed for so long, allowed to burst forth. Ripley does an excellent job of tracing the rapid onslaught of internal dissent focussed on the UK forces as well as

factional fighting within the Basra region. Caught in a spiral of unanticipated violence, political turmoil at home and divergent priorities amongst the Allied forces, Ripley describes a UK force struggling to deal with retraining, internal shortfalls, pressure to downsize and engaging in public works that it had never trained for. It became obvious very quickly that the lessons learned against the IRA did not have relevance in the Iraqi theatre many assumed they would.

The UK Forces showed considerable capacity for adaption and improvisation as the later years of the conflict illustrated. Nevertheless, Ripley's book describes a military left, to a significant degree, at odds with its political masters in the UK and with a marked sense of cynicism and resentment amongst its soldiers and airmen. It also describes a society and force out of step with the realities of combat and the dangers associated with them. That the UK forces were brave and dedicated is beyond question, but the appetite for casualties and risk as well as the domestic and media attention paid to the slightest level of collateral damage has changed the nature of warfare for the West.

Ripley has crafted an excellent, balanced account of the British experiences in Iraq. He draws attention to a significant number of issues and challenges that have still not been resolved involving the soldier and their battlefields. His book is key to understanding the complexities of the modern theatre of operations and the issues that influence them. It is critical that training reflect the lessons learned, not least of which is that the government that you may be fighting to support may be actively working against you. Based upon the conclusions of Ripley's book, the term 360 degree battlefield may now be applied to not only to the physical fighting space, but also the domestic and international political realm as well as the media and legal spaces. The soldiers of today do not have a benign operating environment as *Op Telic* aptly shows.

HITLER'S COLLABORATORS: CHOOSING BETWEEN BAD AND WORSE IN NAZI-OCCUPIED WESTERN EUROPE

Philip Morgan

Review by **Sergio Miller**
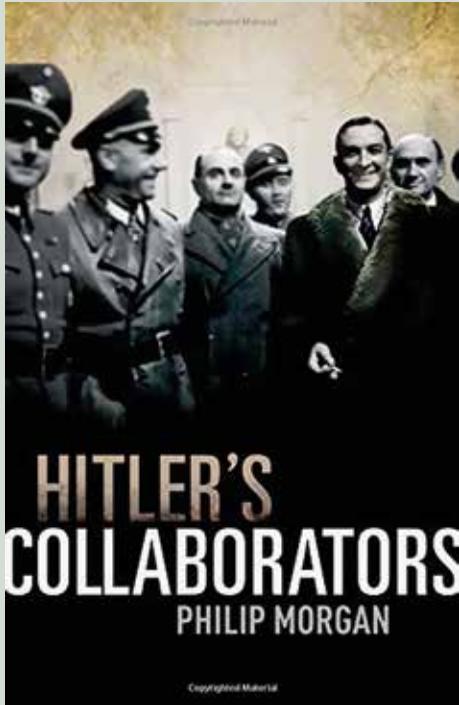
On the day this reviewer read Morgan's *Hitler's Collaborators, Times* columnist Alex Massie happened to publish a think-piece on Trump's America. In it, he wrote: 'The American president's impatience with wishy-washy democracy is as obvious as his admiration for the world's strongmen.' What has this to do with occupied Europeans who collaborated with the Nazi regime? As it happens, quite a lot.

For Britons, the notion of collaborating with a regime as heinous as Nazi Germany is unthinkable. But then again, Britain was not occupied and never had to face this question. For Western and Nordic Europeans - the subject of this book - the question was unavoidable and still painful. Marcel Ophul's *Le Chagrin et la pitié* ('The Sorrow and the Pity'), a 1971 film on the phenomenon of French collaboration in the town of Clermont-Ferrand, was banned for ten years. Only recently, the French state railway company SNCF has had to defend itself again against charges that it actively supported the deportation of Jews.

So why did Europeans collaborate? There are of course no easy answers, but one disturbing factor was that Nazism appealed, much as today's strongmen, populist politicians win over electorates. The best example comes from France. The Germans did not shut down France's government. Vichy French politicians self-dissolved the Third Republic by law and replaced it with an authoritarian, nationalist government more suited to their tastes. In Prime Minister Laval's verdict after meeting the German Fuhrer: '…my impression is a good one. Hitler is a really great man who knows what he's doing and where he's going'. For too many Europeans, before the Nazi project unravelled, this was what the ideology represented: decisiveness, dynamism, and toughness. Where have we heard these qualities extolled recently?

There were also mundane reasons. The 1907 Hague Land Warfare Convention laid obligations on occupiers and occupied - collaboration was a matter of international law, an excuse used by many, when the war was over, to justify their actions. Sexual relations played their part. The *Waffen-SS* calculated that as many as 70,000 children had been born of such liaisons in the early years of the war (surely an under-estimate). The most famous, probably, is Abba singer Frida Lyngstad, who only finally met her SS father in 1971. Anti-communism pitched some towards the Nazi cause; a sense of resignation and defeatism affected many, until the tide of war changed; and at the most basic level, people desperately needed to work. Some profited. There is a long line of household names, modern European conglomerates in France, the Netherlands and Belgium whose wartime profiteering on behalf of the Nazis should be a source of embarrassment.

Of course there was always going to be a reckoning. Following the liberation of France, as many as 10,000 people may have been lynched in *'l'épuration sauvage'*. In the Netherlands there were as many as 150,000 arrests. In Belgium, cases were opened against 450,000 people. The Danish authorities, who handled the Nazis more deftly, still found cause to make 22,000 arrests. But the appetite for revenge-taking waned quickly; successful prosecutions were few; and the emergence of a Cold War soon over-wrote the wartime experience. The truth is that the overwhelming majority of people who collaborated with the Nazi regime, in big ways and small, were never held to account.

The book focuses on the experiences of France and the Nordic countries, partly because of the richness of sources, but also because the Nazis were uninterested in collaboration in Eastern Europe. Here, the policy was conquest, plunder and collaboration. Yet both West and East Europe were conjoined by the universal policy of genocide of the Jews. While it is true that many were uncomfortable over rounding up their Jewish neighbours, too many were not. Morgan can only shine a penlight into this darkness. The reality is that we will probably never know how many hundreds (thousands) of civil servants, policemen, or railway workers collaborated in the deportation of Jews, with the knowledge that these were people being sent to their deaths.

The author, Philip Morgan, is a Senior Fellow at the University of Hull and a specialist in contemporary European history. He has previously authored three books on fascism, so he is something of an expert on the subject. This is an academic book (published by Oxford University Press). Its origins lie in a final year module the author taught at Hull University. The danger of such a project is that the book ends up as an expanded series of lecture notes - and who wants to read that? Morgan has largely avoided this pitfall, although some phraseology hints that in his mind he is still standing at a lectern rather than writing a book, but this remains, ultimately, a specialist book for a student reader.

THE PLOTS AGAINST HITLER
Danny Orbach
Review by **Major Paul Horne**
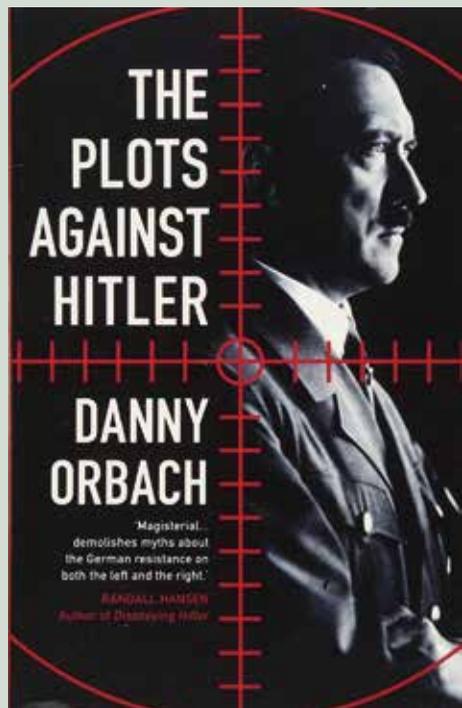
I t is almost certain that we will fail. But how will future history judge the German people if not even a handful of men had the courage to put an end to that criminal?

Whilst most will have heard of the 20 July plot against Hitler, popularly known as Operation Valkyrie, many of us will not be aware of the depth and breadth of resistance that existed toward the Nazi regime and its leader from across all strata of German society. Indeed, by the end of Danny Orbach's scholarly, yet highly accessible book one can see why Hitler thought himself invincible after surviving Stauffenberg's bomb; it was only the latest in a history of resistance to National Socialism and attempts upon his life dating back to at least 1933.

Detailed and thoroughly engaging, Orbach's book does not simply lay out the bare facts of the various plots; instead, drawing on many previously overlooked documents, testimonies and first-hand accounts, he skilfully unravels and examines the varied motivations of those involved in the numerous plots. Stripping away the often repeated myth that all those who opposed Hitler's regime were moral crusaders Orbach highlights the myriad of reasons that caused people to turn against the Führer. These reasons ranged from religious faith, personal bereavement, and outrage at the holocaust to the fear of Soviet retribution when the prospect of defeat went from a possibility to an absolute certainty.

One of the most interesting characters to appear in the book is Colonel Henning von Tresckow; an outstanding Prussian officer and, initially at least, an enthusiastic supporter of both Hitler and National Socialism. As early as 1934 though Tresckow's fervour waned as the barbarity of the new government revealed itself during the Night of the Long Knives and the state-sponsored subjugation of the Jews. Tresckow's opposition to the regime intensified as he witnessed, first in disbelief and then in revulsion, the unspeakable barbarism inflicted upon Jews all along the Eastern front.

Such was Tresckow's anger at the wanton slaughter perpetrated against the Jews that he requested of his superiors that he be allowed to use force to bring to a halt the activities of the *Einsatzgruppen*, the paramilitary death squads working for the SS. When such entreaties to his commanders failed Tresckow became drawn to other conspirators who, together, would plan and execute the failed attempt on Hitler's life in 1944.

Neither idolizing his subjects nor dismissing all those who opposed Hitler as self-serving Orbach's exceptional research and fine writing style brings to life the historical characters at the centre of his narrative. One is able to appreciate their motivation, understand them and even sympathise with them in a number of cases.

This engaging style, which often has the feel and pace of a novel rather than an academic work, helps provide a compelling historical counter-narrative to the prevalent idea that the Führer's support was ubiquitous. Nonetheless concludes Orbach, those who plotted against the regime did so 'honourably, perhaps, but in utter failure, [those who resisted] were able neither to prevent the outbreak of war nor bring it to an early end. Notwithstanding all of their efforts and sacrifice.'

Despite their failure though, this examination of resistance offers many valuable, even inspiring, insights into the depths of physical and moral courage required to resist Nation Socialism in Germany. Indeed, at a time when totalitarian and repressive governments are enjoying a resurgence in parts of the world - including some states in Eastern Europe - this text is a valuable one which encourages us to examine our own beliefs and what lengths we might go to in order to stand up for them.

As Dietrich Bonhoeffer, a priest and co-conspirator with Tresckow and Stauffenberg, said 'a human being's moral integrity begins when he is prepared to sacrifice his life for his convictions.'

BLACKBIRD: THE UNTOUCHABLE SPY PLANE

James Hamilton-Paterson ISBN (HB)

Review by **Nick Smith**
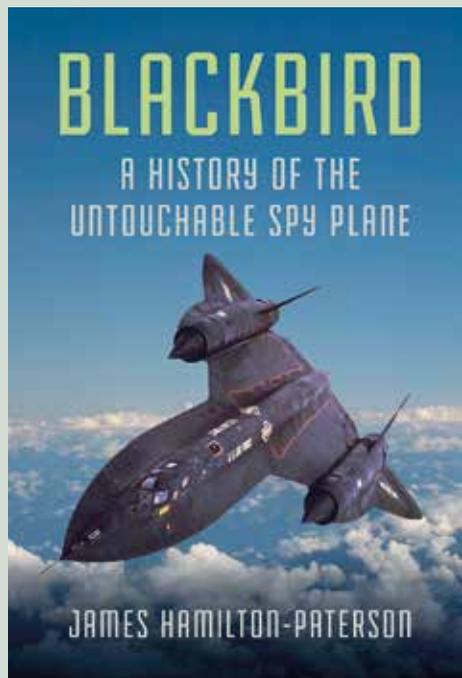
James Hamilton-Paterson tells the story of one of the world's most iconic aircraft of the Cold War period, the Lockheed SR 71 Blackbird, an aircraft born of the political and military paranoia of the time. As an aircraft it was, and will probably remain, absolutely unique.

It was designed at Lockheed's ultra-secret 'Skunk' works in the late 1950's by one of aviation's foremost designers, Clarence 'Kelly' Johnson. His pedigree was outstanding, having already designed the WWII P-38 Lightning and then the P-80 Shooting Star, the USAF's first jet combat aircraft and from which was developed the ubiquitous T-33 trainer. But it was the deepening of the Cold War that saw the development of, perhaps, one of Lockheed's most famous aircraft, the Lockheed U2. Designed to fly very high, above 70,000 feet, it would be used to overfly and photograph areas of the Soviet Union, looking at ICBM development, bomber deployment and numbers, and nuclear weapon test sites amongst others.

This it did until Gary Power's incident in May 1960 when the U2 he was flying was brought down over the Soviet Union by a surface-to-air missile. Until that time neither Soviet interceptors nor SAMs could reach the operating altitude of the U2.

Anticipating the improvements that the Soviets would undoubtedly be making in aircraft and SAM design Johnson, with the tacit agreement of the US government intelligence agencies, embarked on the design of an aircraft that would fly higher - above 80,000 feet, and faster - over Mach 3, than anything then in existence. This would become the ultimate reconnaissance aircraft under the unpromising project title of the OXCART Programme.

Johnson was single-minded in his approach; the construction would be of titanium, for lightness and strength, the initial problem being to source sufficient quantities of the material, most of it coming from Russia.

Titanium is notoriously quirky by nature, for example, cadmium-plated tools could not be used as the cadmium plating 'poisoned' and weakened the titanium. When the SR 71 eventually went into service with the USAF a sergeant on Blackbird maintenance could lose his stripes for having cadmium-plated tools in his toolkit. Lead pencils were similarly banned. The new Pratt & Whitney J58 engines were another significant problem, they had to keep the aircraft at a cruising speed of over Mach 3. But it was some of the seemingly 'minor' issues that were to cause the biggest headaches; the cooling of the 48 inch focal length cameras was a particular nightmare. Both lenses and sensitive film had to be kept at as constant a temperature as possible but at cruise speed the skin temperature around the camera bays could reach 232°C, on the ground it might be 38°C and when the aircraft descended from altitude to refuel at 25,000 feet, the outside temperature could be minus 43°C.

Originally designated as a single seat reconnaissance/strike aircraft the fuselage was lengthened by five feet to accommodate a Reconnaissance Systems Officer (RSO) and this version was called the SR 71, for Strike/Reconnaissance and by late 1967, 31 examples had been delivered to the USAF. Some of these were deployed to Kadena, Okinawa as Detachment 1 (Det.1) and others to RAF Mildenhall as Detachment 4. Det. 1 aircraft were highly successful overflying North Vietnam and southeast Asia and by late September 1969 had flown over '100' hot missions out of Kadena. Without refuelling Blackbirds had a range of some 2,500 miles representing about two hours flying time. By late 1973, with the rapid development of satellite technology, most of the Blackbirds were stood down having completed over 600 missions above the world's trouble spots and war zones. Before the final supersonic flight in 1990, SR 71's set a series of records which stand to this day, including sustained flight (85,069 feet) and speed in a straight line (2,193.17 mph).

There was also the famous Beale AFB in California to RAE Farnborough flight in which the New York to London stretch took a mere one hour fifty four minutes and 56.4 seconds.

Of the surviving thirty SR 71's all but one are on display in the USA. The sole exception is in the Imperial War Museum's American hangar at Duxford, in recognition of the type's long service at RAF Mildenhall, 25 miles away.

In a little over 30 years only 141 men ever passed the exacting selection and training to become 'Habus', as pilots of these aircraft were known.

As the author points out in this fascinating and well-written book, this was an incredibly complex but still a strikingly beautiful aircraft with capabilities unlikely ever to be exceeded. There are few aircraft that deserve the epithet of being described as 'great', this is one of them.

A COMPANION TO THE FALKLANDS WAR

Gregory Fremont-Barnes, Foreword by Major General Julian Thompson

Review by **David Benest OBE**
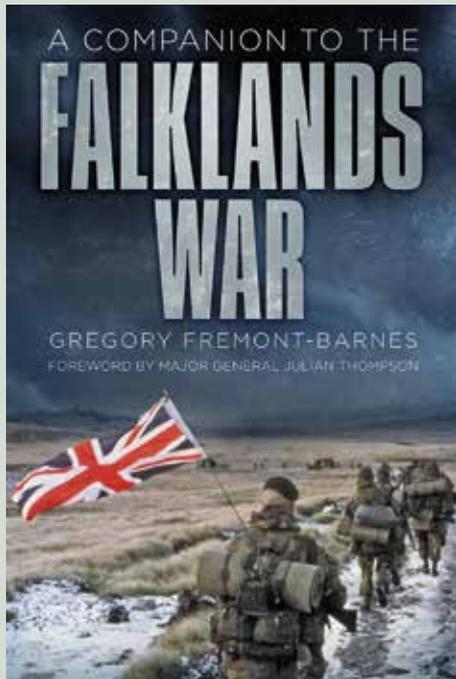
The History Press, 2017,
hbk, pp 320,
ISBN 9 780750 98 17774,
£25

After 35 years this book is long overdue. It is a literal A to Z of Operation CORPORATE in the context of a synopsis of operations, chronology, a list of ships participating, the air order of battle, losses, and the ground forces order of battle, together with a useful summary of further reading. This review will focus on but one part of the war, that played by the 2nd Battalion The Parachute Regiment (2 PARA) given that at the time I was its Regimental Signals officer and subsequently wrote the Battalion history. I am sure that others will wish to make contributions to BAR via the letters pages or in articles.

The 2 PARA account of Darwin and Goose Green (D&GG) is summarised at pp 109 - 126, together with a much shorter summary of our second battle on Wireless Ridge at pp 300- 301. The Battalion also receives attention in a more general sense at pp 186 - 188. So at some 23 pages, I think we receive more of an MIB (Mention in Book) than other units - perhaps unfairly so but that was a judgement from the author, not myself. I think I should also make clear that the 2 PARA command group of 1982 met the author in the Department of War Studies at RMAS about three years ago and promised our co-operation, so perhaps we are responsible after all!

There is much here on which I would be in full agreement and Gregory Fremont-Barnes has done his best to provide a balanced view of what remains a highly controversial matter. After all, why capture D&GG at all – regarded by Viv Rowe RM, the 3 Commando Brigade Intelligence Officer, rightly in my view, as a large unguarded POW camp, best left well alone until Port Stanley had been captured. I would surmise that this was also the view of his brigade commander, who was left with little option other than to launch a battalion raid, which then became a mission to capture

the settlements. Quite how and why the mission was changed on the evening prior to the battle remains unresolved. The outcome of the battle was some 255 casualties, one third of whom were killed. Over 1,000 Argentine POWs were taken. And the outcome was a highly dubious decision to advance quickly on the southern flank to Bluff Cove and Fitzroy when 2 PARA was in no fit state to fight and was much in need of rest.

There are, inevitably, errors in this account. Sussex Mountain was not 'too hard' for digging in. The warning order received from our Commanding Officer on Sussex Mountain was all too clear: 'The raid is back on - only this time we are all going'. On this basis I sought and gained his authority to reduce the Battalion communications to a single command net. We set off at last light on 26 May, not first light as stated. A Company was tasked with the capture of Darwin settlement not Darwin Hill as is implied in the text. In fact, nobody was tasked with the capture of the hill, what can only be described as 'vital ground'.

In practice, the relationship between the CO and his staff, was difficult. In fairness to the CO, I personally think that the intel from a previous patrol 'all he had to do was kick in the door and the isthmus would be taken' gave him completely the wrong impression of the enemy positions. With the Argentine 12 Regiment plus a company of 25 Regiment dug in, this was wishful thinking in the extreme, as was the predicted timing of just over four hours to achieve the mission. After having been mortally wounded but still alive, an attempt was made to provide casevac for the CO. There is no mention that Dick Nunn RM was killed in this and that his co-pilot, Bill Belcher, lost his leg when their helicopter was shot down. The presence of over 100 civilians in the community centre in Goose Green was completely at odds with the order to 'take' the

settlement. We can only be grateful that the combined reasoning of Chris Keeble and Colonel Piaggii averted what would have been a catastrophe for the reputation of the British Army had the planned attack taken place.

All of the above facts were known in 1982. I am most grateful to Gregory Fremont-Barnes for his efforts in getting to know the known truth.

AIR FORCE BLUE: THE RAF IN WORLD WAR TWO

Patrick Bishop

Review by **David Benest OBE**
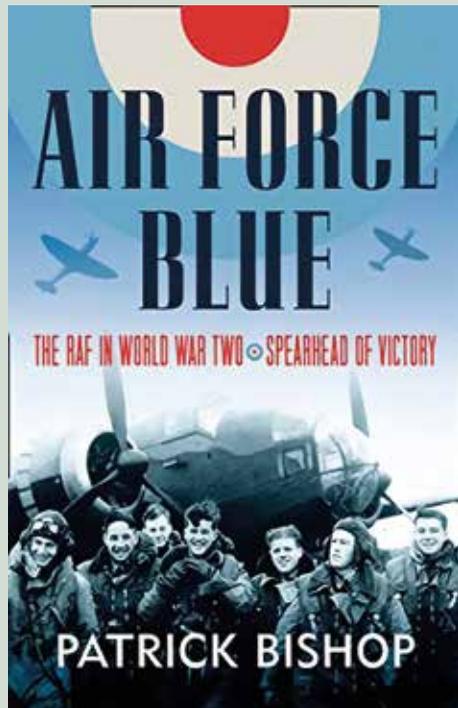
Given that the RAF is celebrating its centenary in 2018 this is a very welcome addition to its history. Very positive reviews have included Max Hastings in the *Sunday Times*, the *BBC History Magazine*, Jonathan Glancey in *Country Life* and Giles Whittell in *The Times*. The written style is a provocative mix of personal anecdote, diaries, National Archive papers and secondary sources. Key chapters cover the Battle of Britain, Coastal Command, Bomber Command, the Middle and Far East, together with some fascinating commentaries on the impact of the expansion of a force from 173,958 in 1939 to 1,079,835 by 1945, with contributions from just about every part of what was then the British Empire, together with volunteers from nearly all the occupied countries, manning 1,911 aircraft at the start and 9,200 by the finish.

This account, naturally, is focussed on the years 1939 - 45. Even so, I would have welcomed at least a chapter on the preceding decades since 1st April 1918, especially the record of the RAF until November of that year, together with the advent of 'Air Control Doctrine', which was the norm during Britain's lesser known counter insurgencies such as Somaliland, Mesopotamia and Palestine, as covered in Philip Towle's *Pilots and Rebels* (1983). I would also have expected some reference to Richard Overy's *The Bombing War* (2013) - on the strategic theory and practice associated with Bomber Command. Of the latter we read of several shades of opinion but not much analysis of the actual efficacy and ethics of area bombing. Nor is much said on the exhortations from the USSR for Britain to do more of everything, especially in the coverage of the North Atlantic. The account of Arnhem is also less convincing in claiming that 'the Allied air forces were not primarily responsible for Market Garden's failure' (p 354), quoting a paper by Sebastian Cox (not Ritchie as stated) of the Air Force Historical Branch. Those who were there, such as John Frost commanding 2nd Parachute Battalion, on the bridge, would beg to differ - as outlined in *A Drop Too Many*, 1980, (pp xiv - xviii).

Max Hastings sums up as follows: 'Many excellent and vivid stories....a blending of social and operations history...Bishop writes with shrewd confidence...and avoids the romanticism that mars many such histories... this is a terrifically readable authoritative book that told me many fascinating things I did not know'. Amen to that!

THE INVISIBLE CROSS

Andrew Davidson

Review by **Ian Palmer**
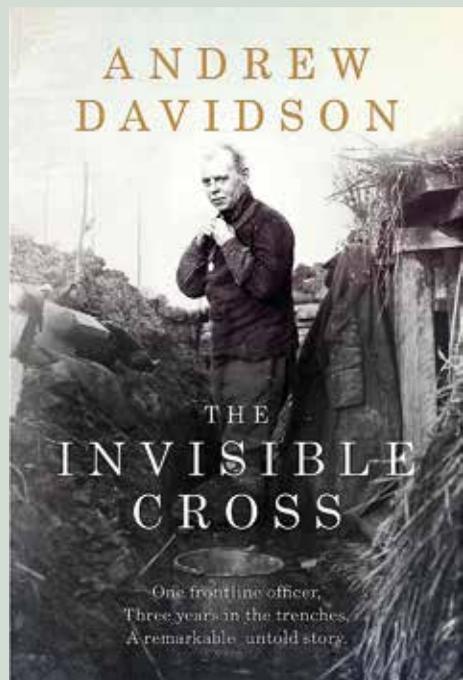
The author describes piecing together the untold story of Graham Chapman, the Western Front's longest serving frontline infantry officer, from 'the fragments of an one-sided, epistolary conversation … akin to assembling a jigsaw puzzle - albeit one with a number of missing parts.' He says that the process of finding and then assembling various sources into a coherent narrative was 'daunting yet fascinating'. I think I would add; hugely successful.

Colonel Graham Chaplin was a singular officer. He served with the 1st Cameronians on the Front Line from August 1914, deploying with the British Expeditionary Force. At the Battle of Loos, he prevented the needless slaughter of his men, which coupled with his forthright nature, common decency and intolerance of ignorance, ineptitude and cant in superiors, 'marked his card' and kept him in the line until September 1917 when he was given a Brigade to command.

His letters have largely escaped the censor and paint a picture of these years, suitably tailored to their recipient, his wife Lil, through which glimpses of the true man can be seen. The letters reveal an odd juxtaposition of an officer struggling with command and negotiating himself and his men safely through the maw of a grinding war, whilst at the same time encouraging, or at least not discouraging Lil, from burdening him further with her anxieties. Thinking that any day could be his last, he burnt all her letters - and I for one was rather pleased! The book is well researched and sensitively edited into a well-crafted narrative that makes reading it both easy and a pleasure. Each of the 19 chapters has four sections. First there is strategic overview of what's happening at the time, some of which would have been unknown to Chaplin. Then there is a more detailed description drawn from historical records that contextualises the letters that follow. In addition, there are appropriate entries from the battalion War Diary. There is an interesting Forward and Afterword that adds greatly to the book, as well as obligatory references and appendices.

The book has been uniformly well reviewed on Amazon. It is a good addition to the genre. It paints a touching picture of one man's war and reveals the resilience of the man and his comrades in the face of such carnage and endless, seemingly senseless, order into action.
Chaplin was lucky to survive. Others saw this and cleaved to him. He was a solid, physical, reliable, forthright officer who led from the front. His obituary described him as 'the soul of integrity, courage and the nigh perfect example of an officer'. This graceful book is a fitting tribute.
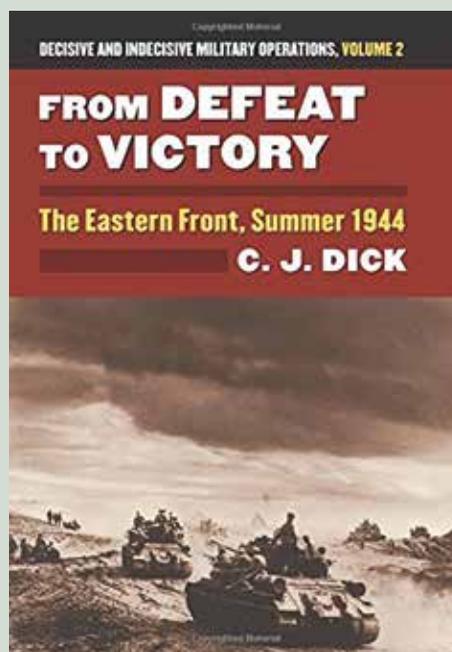
DECISIVE AND INDECISIVE MILITARY OPERATIONS: VOLUME 1: FROM VICTORY TO STALEMATE: THE WESTERN FRONT SUMMER 1944: VOLUME 2: FROM DEFEAT TO VICTORY: THE EASTERN FRONT SUMMER 1944

Charles Dick

Review by **John Sutherell**
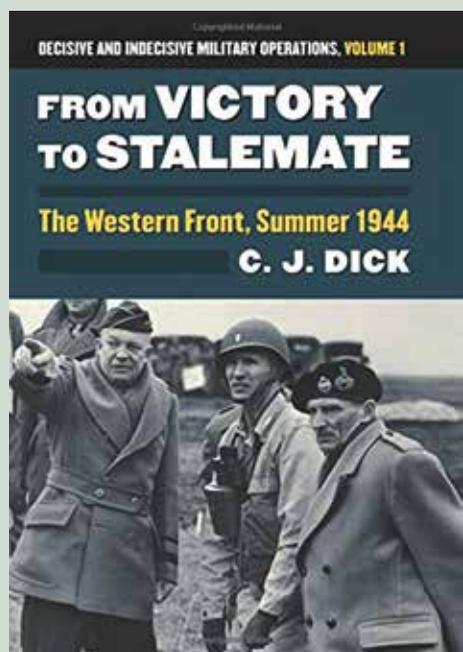
Volume 1:
University Press of Kansas,
October 2016, 456 pp,
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ISBN-13: 978-0700622931

Volume 2:
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October 2016, 416 pp,
Hdbk, £34.21,
ISBN-13: 978-0700622955

Decisive and Indecisive Military Operations is essential reading for any serious student of warfare and particularly anyone wishing to understand the Operational Level of War. Charles Dick's comparative and analytical study of operations in Western and Eastern Europe in the summer of 1944, in distinct contrast to the many narrative military histories, seeks to explain how and why battlefield activity succeeded or failed to achieve strategic campaign objectives. It is, I believe, unique in comparing the way Operational Art was practiced in the same time period of the Second World War on the Western and Eastern fronts, in explaining the fundamental differences in military culture and highlighting the significantly different outcomes.

This is a serious book that is the distillation of over 40 years of study, thinking, writing, teaching and practical application in Theatre level exercises, war games, staff rides and battlefield tours. It is informed by extensive research in Russian language and German translated primary sources as well as the extensive literature in English. It not only informs the reader on a complex subject in a compact and accessible way, but it also shows how to think about warfare. It is particularly rewarding to read the two volumes of this book in parallel, and for that reason this review outlines the contents as a guide to doing so.

Both volumes begin with chapters which provide the reader with the essential background - terminology, principles, historical background and doctrine - to understand and appreciate fully the chapters that follow. For the experienced reader they are a useful revision; for the newcomer to Operational Art they are an invaluable resource.

The first 30 pages in Volume 1: *Immature Armies* covers concepts of war fighting and the challenges of command in common to both western and eastern theatres. Significantly, the rest of this first chapter contains shrewd pen pictures of the senior commanders in the west and a perceptive analysis of the differing approaches to war of the American, British and Canadian armies, with their varying histories, organisations, doctrines and styles, but all heavily influenced by thinking derived from the experience of the Western Front from 1916 to 1918. The bulk of these Armies had had limited exposure to contemporary combat and had prepared for the invasion of Europe in the relative tranquillity of the UK.

The equivalent Chapter in Volume 2, *Soviet Doctrine and Praxis prior to 1944*, explains the evolution of Soviet pre-war doctrine, which drew very different conclusions

from the 1914-1917 conflict, the Civil War and war with Poland (1917-1920). It recounts how that doctrine developed, survived Stalin's purges of the high command and the disasters of 1941 and 1942, and became the foundation for the progressively more successful offensive operations in 1943 and early 1944. The chapter also explains how the Soviets managed to survive the early catastrophes and rebuild their forces, partly through German mistakes and hubris. In contrast to the western allies this was achieved while in continuous contact and combat with the German Army. Commanders, doctrine, organisations and troops were constantly and ruthlessly tested and inadequate commanders at all levels winnowed out. Casualties were high, and not just from the Germans, but by summer 1944 the Soviets were, with complete unity of command embodied in the STAVKA, practicing a coherent concept of waging war. Operational Art was at its core, and it had, as it's instrument, formidable, battle hardened armies led by highly effective commanders imbued with a common objective: to annihilate the German Army through operational level manoeuvre. In contrast, in June 1944 the western allies, despite formidable resources, great dedication and remarkable planning were just beginning and proved to be more concerned with the seizure of ground than with the destruction of the enemy.

Key to both books is the chapters examining the conduct, through the prism of the tenets of Operational Art, of a series of operations conducted between June and September 1944. It is very instructive and strongly recommended, especially for those more familiar with the campaign in the West, to start reading these central chapters with Volume 2! These comprise the following:

- Chapter 2: *Strategic Offensive Operations Summer 1944* commences with STAVKA's strategic decision and concept. This sets the scene for studying three sequential but overlapping and linked strategic operations: Belorussian: 23 June to 31 July; L'vov-Sandomir: 13 July to 29 August; and Yasi-Kishinev 20-29 August.
- Chapter 3: *Operational Art in Maturity, Summer 1944*, having first highlighted how doctrine had been refined as a result of experience in 1943 and early 1944, then scrutinises all three operations in terms of Operational Art using the common structure of `Putting the Operation Together'; `The Breakthrough'; and `The Exploitation: Operational Manoeuvre'. The chapter concludes by considering some of the remaining problems in Operational Art as evidenced in these examples and shows how those issues were largely resolved in the Vistula-Oder Operation 12 January-2

February 1945. The crucial and mandatory role of *Maskirovka* to achieve surprise and the concentration of force to achieve overwhelming effect on selected axes is stressed throughout. For those unfamiliar with the Eastern Front and the Soviet way of war, these two chapters are likely to be a revelation in themselves, but they also sharpen the reader's critical faculties when considering what was happening in the West.

In Volume One there are four chapters covering the equivalent period of time. Each looks at a different phase of the Strategic Offensive and the author applies his scrutiny of Operational Art at the end of each separate chapter.

- Volume 1: Chapter 2: *The Tipping Point*, sets the scene. It touches on the necessary battles of attrition that followed `D Day', conducted to build a lodgement and create the conditions for the breakout, but the bulk of the chapter is a careful analysis of the overall situation on the eve of that breakout. It includes a correlation of forces on land, an analysis of air power and behind the lines activity and an examination of operational level intelligence. In `putting the operation together' the correlation of forces gave the Allies the capability to achieve a breakthrough, but SHAEF was aware that logistic constraints were likely to cause problems with exploitation.
- Chapter 3: *July: Breakthrough and Near Breakthrough* studies Operation COBRA by 1st (US) Army in the west of the bridgehead and Operation BLUECOAT by 2nd (Br) Army designed to pin down German armour in the east. Both operations were successful in achieving tactical surprise and eventually in breaking through the German defences, but the Americans' exploitation of their success was by far the more effective and the chapter analyses the reasons for this. The Soviets faced a similar challenge in breaking through stronger and deeper German defences in the east; it is salutary to compare their more systematic, and highly focussed approach emphasising surprise, locally overwhelming force, including exploitation forces, to generate high tempo to ruthlessly exploit breaches in the defence.
- Chapter 4: *August: Incomplete Encirclements* studies the way the Western Allies sought to exploit the breakthrough achieved by Operation COBRA. Generals Montgomery and Bradley recognised that the sudden and unexpected crumbling of the German Army in western Normandy, compounded by their ill-judged counter-attack at Mortain, gave the Allies an unexpected opportunity. They changed the outline plans that existed for this phase of the campaign

and launched the bulk of General Patton's 3rd US Army south and eastwards, supported by renewed attacks southward from the British sector, to envelope and destroy the whole of the enemy forces in North West France. Notwithstanding two opportunities to encircle and destroy the German Army, first at Falaise and then on the line of the river Seine, the Allies, while inflicting very heavy damage, failed in their aim. A substantial portion escaped, including the headquarters elements needed to reconstitute the badly damaged formations which subsequently enabled the Germans to mount an effective defence for another 9 months and to launch the Ardennes counter offensive in December. The analysis of the reasons these opportunities were mishandled leads into:

- Chapter Five: *September -Operational Ideas and Developments on the Ground* that covers the pursuit by 21st and 12th Army Groups eastwards from the Seine until they both reached the culminating point of their offensive on the borders of Germany. In terms of recovering ground the allies had exceeded the expectations of the pre-invasion planners; by D+90 they had attained a line that had not been expected before D+240, but the victory was indecisive. Stalemate and an autumn campaign of attrition ensued.

Logistics are the crucial enabler and usually the major constraint on operational options. In the first phase of their war the Soviets discovered that logistics was the least thought-through element of their military theory. The system they evolved to match and enable that theory by the summer of 1944 is explained in an Appendix to Volume 2: Chapter 2.

Volume 2 contains numerous examples of how the Soviets made hard decisions on priorities to ensure that their operational main effort had sufficient logistic support to achieve their aim. They were ruthless realists. Volume 1: Chapter 6: *Logistic Realities* examines the complex logistic challenges that faced the western allies, not least securing points of access to mainland Europe through which to deliver everything the armies required. As the allies drove eastwards following Operation COBRA the problem of the transport of material from the entry points to the advancing armies grew more severe and, despite some imaginative innovations, was never solved. Logistics was a major factor in the offensive grinding to a halt in late September, but the operational commanders bore at least as heavy a responsibility for this as the logisticians because they made operational plans that ignored logistical factors. An egregious example was Montgomery's failure to prioritise securing the

estuary of the Scheldt Estuary to allow the logistic exploitation of the major port of Antwerp which, as the result of the activity of the Dutch resistance, had been liberated intact. But most of the senior commanders were reluctant to make hard operational level decisions on priorities or, indeed, collaborate with each other to achieve the common objective. The final chapter of Volume 1: Chapter 7: *Command, Operational Art and Generalship* is a fair but critical analysis of the Allied performance at Army, Army Group and Theatre level.

Having completed Volume 1 the reader should then turn back to Volume 2. Chapter Four: *Some Conclusions* draws together this study of the two theatres of war. This `protein rich' chapter examines: the interaction of the Eastern and Western theatres, including the significant benefit the Soviets derived from the Allied Strategic Bombing offensive; it highlights the problems of coalition war fighting; compares approaches to Intelligence, Deception and Surprise; and compares the conduct of Operational Art in the East and the West.

Chapter Five: *Some Reflections about the Future* draws lessons from these operational studies but projects forwards with the additional perspective of the author's own 40 years of experience as a soldier, analyst, practitioner and observer to which he refers in his article *Lessons from History in British Army Review (BAR) No 171*, The chapter is a timely 'reality check' on the capabilities and problems of alliances and coalition warfare; on the challenges facing the intelligence community, and the continuing possibilities for deception and achieving surprise; and on the tendency of armies and countries to fall into the trap of misperceiving others in terms of stereotypes, while viewing their own experience and capabilities through a prism that tends towards myth, together leading to arrogance, hubris and the severe consequences that follow. The chapter concludes with a plea for open mindedness and adaptability:

> Thus, by far the most important question is neither one of materiel nor one of organisation. Rather, it is whether armies have the mental and psychological flexibility to adjust speedily to the mutations war is undergoing. Appropriate doctrine is an essential to victory. For instance cultural awareness is becoming as important as technology. The ability to manoeuvre in the virtual dimension is now as important as the ability to manoeuvre on the battlefield. Can traditionally minded officer corps cope with these and myriad other problems? Success will depend on arriving at concepts of operational art and generalship that are appropriate to the varied challenges of the twenty-first century.

> The armies likely to adapt most rapidly and effectively to remodel their doctrine, training and organisation will be learning institutions. They will have a command culture and processes that are capable of avoiding or overcoming systemic traps such as inertia, minds closed to unwelcome intelligence, the enshrinement of received wisdom, group think, and a promotion system that rewards inordinate deference and the avoidance of risk taking. Awareness and adaptive flexibility will be keys to success, rigorously auditing and questioning old ideas while seeking out, testing, and agreeing on new, hitherto strange ones. Will the American and British armies of the future look like this?

These final two chapters are a fitting conclusion to this remarkable book, which is not only a work of scholarship - the extensive end notes not only support the text with appropriate references to sources but provide a cornucopia of additional information - but an invaluable source of wisdom for those seeking to better understand the profession of arms.