

Chapter 4

Strategic Policy

Russia's War in Ukraine

What are the emerging military lessons?

Major wars severely test armed forces. The Russia–Ukraine war is no exception. Although there are currently only two direct combatants, many other states are involved in the conflict: politically, diplomatically and economically, and by providing military and intelligence assistance to Kyiv. They have supplied Ukraine with considerable military support, including a wide variety of weapons, ammunition, spare parts and training. The international effort to prevent Russia from winning the war has also seen self-organised participation by international businesses in withdrawing from Russia and, in some cases, helping Ukraine.

At the time of writing, the outcome and duration of the war cannot be reliably forecast. But it has demonstrated some key features of modern war between states. It has reaffirmed that war is a highly dynamic contest of wills across multiple domains, where both sides seek to outfight, outmanoeuvre and out-adapt each other. The battle of the narrative is a key factor. The war reminds us that the prime military capability is competence and that numbers and mass still count, both on the battlefield and in logistics stockpiles. It also suggests that many current precision weapons are limited by cost, complexity and lead times to manufacture; and that it

is increasingly difficult to hide forces from surveillance by satellites and uninhabited aerial vehicles (UAVs), the latter playing an increasing role in land warfare. Battles in the conflict have often revolved around urban terrain, demonstrating the need for competence in urban warfare.

The changing character of the war

Carl von Clausewitz, the German military theorist, outlined two dimensions of war: its nature, which is enduring; and its character, which changes as the ways and means used to fight wars change. War's nature is brutal and chaotic. It is an intensely human activity in which the enemy exercises its free will and its determination to fight to the death. Waging war is a political act. Aims can include gaining advantage, improving a situation or influencing the attitudes or behaviour of other parties.

Combatants can use a wide range of military and non-military ways and means, constantly seeking advantage over each other. This makes war a dynamic contest. Initiatives, such as the introduction of new strategies, technologies or tactics by a combatant, often result in attempts by other combatants to develop countermeasures. These can often prompt further adaptation by the enemy. So, wars often become contests of combatants' ability to 'learn under fire', as each side tries to gain advantage by adapting the ways and means of conducting the war. This means that most wars feature action–reaction dynamics that constantly change their character. This can result in conflicts changing direction as they evolve, often generating opportunities and setbacks that were unanticipated before the war.

These factors and dynamics can be discerned in the war between Russia and Ukraine and at all levels: the strategic, operational and tactical. Russian efforts to rapidly decapitate the Ukrainian government, followed by a speedy seizure of the capital Kyiv, both failed, largely due to considerable weaknesses in the planning, tactics, training and command of Russian land and air forces. But Russia adapted its strategy, seeking to eject Ukrainian forces from the Donbas by concentrating large amounts of artillery to inflict a high level of attrition. Ukraine then conducted counter-attacks and precision strikes around the Kherson *oblast*,

seeking to threaten Russian control of the city of Kherson and draw Russian forces away from the Donbas. This proved, in part, an effective deception operation. In early September Ukraine launched an offensive around Kharkiv that liberated up to 6,000 square kilometres of territory that Russia had held for months. Neither Russia nor Ukraine has secured dominance of the air or maritime domains, which has constrained both sides' options. External supplies of weapons, ammunition, intelligence and military training have greatly influenced the war's dynamics on land, at sea and over Ukraine's airspace.

The battle of the narrative

War since 9/11 has featured considerable competition to influence the attitudes of combatants, national populations, their leaders and international supporters. From the outset this has been an important part of this war, applied at all levels – from the national and strategic to the tactical. For example, Ukrainian President Volodymyr Zelenskyy has played a major role in influencing Ukraine's international supporters by directly addressing a wide variety of bodies, ranging from national legislatures to the IISS Shangri-La Dialogue in Singapore and the Glastonbury Festival in southwest England. Zelenskyy tailors each message to his audience to maximise its impact. He has also made extensive use of social media, not least in showing walkabouts in Kyiv early in the war. Zelenskyy's constant presence in Western media and political and public fora has been a major factor in influencing attitudes in the United States, Europe and further afield.

Both sides have invested considerable resources in a wide variety of communication technologies. They have sought to use short videos and phone intercepts to influence international attitudes to the war. Ukraine has been much more successful at producing these (despite disruption from Russian kinetic and cyber attacks on Ukrainian government communications), reflecting the speed with which videos can be produced and released. Copious amounts of photographs, video and satellite imagery add credibility to Ukrainian allegations of war crimes committed by Russian troops against Ukrainian civilians. But Russia has adapted

its diplomacy and messaging in the global south, claiming that the US and NATO were responsible for Russia's aggression and that Western sanctions are responsible for global economic harm (especially food insecurity). The lesson is that the battle of the narrative is a key element of modern warfare, as is the maintenance of legitimacy by the warring parties. Nations will need to plan for this battle with a wide variety of means, from traditional to modern social media, and to wage it among diverse global audiences, taking into account local differences (especially between societies with 'open' and 'closed' media environments).

The prime military capability is competence

In early 2022, many intelligence agencies and international military experts forecast that Russia would defeat Ukraine. It was seen as having the advantages of ten years' investment in military modernisation, relevant military experience from its 2014–15 war in Ukraine and its 2015 intervention in Syria, and considerable numerical superiority.

On the first day of the war Russian special-operations and airborne forces failed to seize control of Kyiv. This tactic had worked in Prague in 1968 and Kabul in 1979. Its failure must have come as a shock to Russian President Vladimir Putin, as must the failure of the two large Russian armoured formations advancing on Kyiv from the north and the west. Both columns advancing towards Kyiv were slowed down by Ukrainian infantry exploiting the wooded and urban terrain north of the city to ambush Russian armoured units, delay them and subject them to mortar and artillery fire. Despite the temporary capture of some outlying towns such as Bucha, Russian forces were not able to breach Kyiv's main defences, let alone advance into the city centre, as evidence emerged of logistical difficulties, low morale and weak standards of combined arms tactics and battlefield leadership. After the first month of fighting, Russian forces that had sought to capture Kyiv and Kharkiv withdrew to more defensible positions.

What explains these early Russian military failures? Over-optimistic planning certainly seems a major factor. The initial attacks displayed hallmarks of over-confidence and wishful thinking that the Ukrainians

would not offer serious resistance. If the Kremlin thought sustained Ukrainian resistance was unlikely, expensive and time-consuming, Russian logistical preparations would not have seemed necessary. And there would be no requirement to concentrate force at a decisive point or points.

Other contributing factors appear to have been inadequate command and control, with a lack of a single Russian joint theatre commander supported by an empowered joint HQ. The failure of officers to properly brief and lead their men contributed to poor morale. The war has also exposed the weaknesses of Russian training in modern combined arms and joint operations. For example, neither the army nor the air force appears to have trained against a competent and agile opposing force, with many previous Russian field exercises being highly scripted. Many reports suggest that Ukrainian troops displayed much higher standards of initiative and tactical leadership, possibly as a result of training provided by the US and NATO states since 2015 that sought to enhance junior leadership.

Russian equipment has also exhibited weaknesses, especially in the apparent ease with which its tanks were destroyed by US *Javelin* and Anglo-Swedish Next Generation Light Anti-Tank Weapons (NLAW) that attacked the weaker armour on the top of tanks. And there are credible reports that about 40% of the cruise missiles fired by Russia have failed to strike their targets.

It may well be that the effectiveness of the considerable financial investment made by Russia in its military modernisation was eroded by the effects of the nation's authoritarian political culture, as well as of nepotism and corruption. These factors can undermine the institutional health and effectiveness of defence ministries and armed forces. The lesson is that, without investing in the capability of personnel – including the competence of commanders and adequate individual and collective training – such investments in hardware can be wasted.

These factors in combination have greatly reduced the overall effectiveness of Russian forces in Ukraine. The war reminds us that the prime requirement for armed forces is competence. This should be

measured against the capabilities of a determined enemy. An armed force's effectiveness partly depends on the procurement of adequate military hardware supported by sufficient ammunition, spare parts and logistic capability. But all these are worth nothing if the force's intelligence, leadership, command, logistics and training are inadequate. Far too much analysis of armed forces, defence industries and military equipment defaults to equipment numbers and parameters without taking these other vital factors into consideration.

The cyber dimension

In early 2022, before the invasion, Russia attempted several major cyber attacks against key Ukrainian political and infrastructure targets. The most damaging was the successful strike on military command and control through the Viasat system on 24 February (the day of the invasion), an attack described by one US source as 'elegant and sophisticated'. But most other cyber attacks were defeated or mitigated quite quickly. Ukraine, working with substantial allied support and private-sector operators like Microsoft, was able to nullify most of Russia's ambition for a decisive advantage in cyberspace. Even the Viasat attack, though quite damaging, did not prevent Ukrainian victory in the battle for Kyiv. One mitigating factor was the immediate supply by the US government and the SpaceX-owned satellite internet constellation Starlink of several thousand portable, encrypted ground-communications links.

A US assessment of why Russia did not achieve its aims in these cyber operations pointed to three reasons: Russia probably made a number of incorrect assumptions (presumably about the cyberspace terrain); the US quickly introduced important defensive capabilities and worked with a number of Ukrainian partners; and coordination between different cyber actors in the chain in Russia was reported to be very poor. Russian failures may also illustrate that mounting cyber attacks to neutralise well-developed and robust military command-and-control networks with capable cyber defences may be more difficult than the Kremlin had imagined.

Numbers count

There is much about the war that is not new. In the early twenty-first century many Western military theorists, the leaders of the US armed forces and the Western defence industry argued that new precision weapons would reduce the requirement for mass on the battlefield, as greater effect could be achieved by modern land and air forces, reducing the need for size. The rapid success of US-led international coalitions in deposing the Afghan Taliban regime in 2001 and Saddam Hussein in 2003 was seen as confirmation of this theory. This war has pointed in the opposite direction.

Numbers have counted, showing that mass remains an important factor. Achieving mass at decisive points has depended on being able to move forces, concentrate them and sustain their key logistic supplies of fuel, ammunition and spare parts. Russia failed to achieve the necessary concentration of force in the first month of the war to capture Kyiv and Kharkiv, while Ukrainian forces were often able to concentrate anti-tank and indirect fire against Russian units struggling to cope with both unexpected resistance and the challenges of urban and wooded terrain.

Russia then adapted to achieve concentration of force in the Donbas. Its summer 2022 offensive saw it assemble considerable numbers of artillery guns and rocket launchers, firing up to 20,000 rounds a day. This was in concert with limited short-range attacks by Russian ground troops. These acted to fix Ukrainian defenders in place, making it difficult for them to withdraw out of the lethal footprint of Russian artillery. Unsurprisingly, the defending Ukrainian infantry suffered heavy casualties from the sustained bombardment.

From the outset of the war Ukraine appealed to its allies to supply not only weapons but also ammunition. It appears that both sides have been expending ammunition at prodigious rates. Evidence of this is the 411,000 155mm artillery rounds that by late July had accompanied the delivery of 126 US M777 howitzers to Ukraine – over 3,200 artillery rounds for each gun. The very high expenditure of ammunition throughout the war will give pause to many nations, particularly the US and its allies, who have previously economised on the size of their logistic stockpiles.

Limitations of precision weapons

This high expenditure of conventional unguided ammunition has been accompanied by an equally high expenditure of precision weapons. For example, Russia's inventory of land-attack cruise missiles appears to have been depleted and Ukraine has stated that on several occasions it has come close to running out of *Javelin* and NLAW anti-tank missiles.

The accuracy of precision weapons comes at a price. Their guidance systems contain sophisticated electronics and electro-optical sensors. Every time the missile is fired these expensive components are lost. Anti-armour warfare illustrates this: although tanks are expensive vehicles, the ammunition they fire against enemy vehicles is simple and much less expensive than anti-tank missiles. For an army's anti-armour defence to be resilient, expensive anti-tank missiles will need to be complemented by cheaper, simpler anti-tank shells fired by tanks. This illustrates a wider point: any future military capability that relies exclusively on precision weapons is not only likely to be expensive, but will also take a long time to resupply.

Battlespace manoeuvre

Fighting has reinforced the utility of combined-arms warfare on land. A major contributor to the failure of the initial Russian attacks on Kyiv and Kharkiv was Russia's inadequate coordination of the activities of its tanks, infantry and artillery, while Ukrainian defenders proved much more skilled at coordinating their infantry's use of anti-tank weapons with strikes by mortars and artillery. Subsequently, in the Donbas both sides have sought to wage combined-arms warfare against each other, with the Ukrainians increasingly using deep-precision attacks by guided rockets fired by US-supplied High Mobility Artillery Rocket System (HIMARS) rocket launchers. The war illustrates the continuing importance of the combined-arms approach to land tactics – albeit with drone and counter-drone capabilities increasingly integrated into land units.

Russia quickly neutralised Ukraine's navy and was able to use its Black Sea Fleet to assist its land attack on southern Ukraine. The rapid imposition of a de facto blockade of Odesa prevented exports of Ukrainian grain by sea, resulting in shortages in global grain supplies,

rising global food insecurity and diplomatic pressure on nations supporting Ukraine. But successful Ukrainian attacks using anti-ship missiles, including the sinking of the Russian cruiser *Moskva* in April 2022, reduced the utility of Russia's fleet. This reminds us that while sea control can confer great advantages, warships manoeuvring within effective range of enemy coastal defences will continue to be vulnerable.

Many commentators had expected Russia to rapidly gain air superiority over Ukraine and were surprised when they did not. Ukraine appears to have fielded a distributed air-defence network with radar and missiles using guerrilla-style 'shoot and scoot' tactics. It has created a layered air defence in which man-portable missiles force Russian aircraft to operate at higher levels, where they are vulnerable to longer-range S300 missiles. It also seems that the Russian air force was inadequately prepared to coordinate its activities with Russian land forces, not least to overcome the challenge of aircraft being shot down in error by the Russian Army's own considerable number of organic air-defence units.

The lesson of Russia's apparent failure to achieve either maritime control or air superiority reinforces the importance of both domains in modern war, as well as the considerable potential of anti-access and area-denial approaches as asymmetric ways of countering enemy maritime and air capabilities.

A more transparent battlefield

The war has sometimes featured a very high degree of transparency that makes it difficult for land forces to hide. At the strategic level, in the months before the invasion the US and the United Kingdom made unprecedented use of declassified intelligence to support their narrative that Russia was surrounding Ukraine with mobilised formations. This position was reinforced when Maxar, a civilian satellite-imagery company, published photographs of Russian units deployed in Belarus and western Russia. Maxar has continued to publish imagery of Russian forces in and around Ukraine ever since. This should be assumed to represent only a small proportion of the imagery available from modern civilian and military observation satellites.

The war has also featured intensive use of UAVs by both sides. These have ranged from long-range systems and medium systems to large numbers of simple short-range commercial small UAVs ('drones') adapted for military use. Both sides have made extensive use of these to locate their opponents and to control strikes by artillery and rockets. For Ukraine, US-supplied *Switchblade* loitering munitions, essentially kamikaze drones with a small warhead, have proved especially effective, as have Turkish *Bayraktar* armed UAVs. The high utility of UAVs has resulted in great efforts to acquire more of them – for example, charities in Ukraine and Central Europe have crowdfunded some supply drones, while Russia is reportedly sourcing UAVs from Iran – and to shoot enemy UAVs down, with the reported life of a Ukrainian battlefield drone being about a week on average.

The lesson is that UAVs and drones are now key capabilities for land forces. This adds a degree of land–air integration to the lowest tactical levels, right down to company and platoon level, that was not achievable in earlier wars, including the recent conflict in Nagorno-Karabakh. This also means that counter-drone capabilities are similarly required by land forces, including at the lowest tactical level. And the threat from both UAVs and civilian and military satellite reconnaissance will require US and NATO forces to rediscover the art of camouflage, concealment and deception, which has been lost in recent decades.

Exploiting terrain

Terrain has had a considerable influence on the war. The Russian advance on Kyiv was hampered by woods and boggy ground. And Russian forces have been slowed down by having to cross rivers. Ukrainian troops have imposed further delays by demolishing bridges and successfully using artillery to attack Russian troops conducting river crossings – an operation that is difficult in peacetime and even more so in war.

Much of the fighting has revolved around the control of urban terrain. Initially this offered great advantage to Ukrainian troops defending against Russian armoured forces. The Ukrainian defenders of Mariupol imposed considerable delays on the attackers, with the Azov Battalion

holding out so successfully in its underground redoubt below the Azovstal steelworks that a final assault by Russia and its allies from the Donetsk 'People's Republic' was not attempted; a surrender was negotiated instead. Much of the recent fighting in the Donbas has featured the attack and defence of towns, such as Severodonetsk. The war illustrates that the global mega-trend of ever-increasing urbanisation means that urban-combat capabilities are essential for armed forces.

'Big war' is back

Perhaps the most important facet of the war is that what was planned as a short 'special military operation' against an inferior enemy has turned into a large-scale conflict between states, in which prolonged fighting has been at a high intensity and over a wide geographical area. Both sides are finding it much more difficult to prevail than the US did against the Taliban in 2001 and Iraq in 2003, where it took little more than a month to accomplish regime change.

This war might be more like the wars in Korea (1950–53), Bosnia (1992–95) and between Iran and Iraq (1980–88). Its outcome, military dynamics and lessons will have a significant influence on global military thinking and planning as defence ministries contemplate possible future wars.