



**Australian Army
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Exploiting the Technological Spectrum to Generate SOF Value in Strategic Competition

James Easton and Joshua Kolo

Australian Army Occasional Paper No. 13



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Serving the Nation

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ISSN (Online) 2653-0406

ISSN (Print) 2653-0414

All enquiries regarding this publication should be forwarded to the Director of the Australian Army Research Centre.

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Foreword

Based on almost any metric, Australia's strategic circumstances are deteriorating. Not since the darkest days of the Second World War has it faced threats to sovereignty and interests that could be described as both truly strategic and potentially existential. The return of great power competition amongst states competing for global hegemony, along with global pandemics, natural and man-made disasters, the possibility of nuclear war in Europe, global inflation, the hyper-transformation and pervasiveness of information, and the likely impact of emerging technology are all testament to the rate and pace of change that has come to define the early decades of the 21st century.

It is in this context that the Australian Defence Force is confronted with the challenge of being able to respond to both traditional and non-traditional threats that the government, and indeed the citizens of this country, now expect their military to possess in order to underwrite its obligation to generate military power for national security. The need for the right force design is critical to this. Whereas military power relies on being able to principally respond to the most consequential threats in the form of military conventional capabilities, it is also increasingly the case that offset and asymmetric capabilities are necessary in order to be able to generate response options that not only complement conventional force capabilities but are also able to meet these new types of threats with their own forms of special capabilities, including space- and information-based systems and, of equal importance, Special Operations Forces.

The central proposition of this monograph is that the traditional operational spectrum of peace–conflict–war has been usurped by a more dynamic set of tensions between two states of being: competition and conflict. To that end, and relative to Special Operations Forces, it argues that these capabilities must now adopt a full-spectrum campaign approach to military action, with a focused application of advanced and emerging technologies that generate the asymmetric capabilities necessary to ‘win’. It is these systems, as part of the joint task forces of the future, that will give Australia, whether in concert with her allies or as a self-reliant act of self-defence, the ability to create the kinds of security dilemmas against potential future adversaries that amount to a legitimate form of strategic deterrence.

I commend this publication to the reader. I also congratulate the two authors for their deep thinking, for being brave enough to formulate their ideas and present them to for public scrutiny, and for being prepared to defend them in a robust way. The more that Army’s young leaders and professionals contribute to the debate around the future of war, the better off we will all be.

Ian Langford, PhD
Brigadier

Introduction

The opening decades of the 20th century saw the repeated deployment of coalition Special Operations Forces (SOF)¹ operating within the framework of the ‘Global War on Terror’ and offshore defence. Concomitantly, governments and military decision-makers have increasingly perceived SOF as a direct-action (DA) implementation tool of choice for the degradation of violent extremist networks. A simple online search for ‘special forces in future warfare’ reveals numerous articles asserting that, over the last two decades, SOF has strayed far from its original purpose and must be remoulded to ensure its enduring relevance within an accelerated warfare environment that is volatile, uncertain, complex, and ambiguous (Burr, 2020). In recent years, shifts in great power dynamics and the competition–conflict spectrum (Joint Chiefs of Staff, 2019, p. 1) have demanded that the SOF enterprise pivots from one that is predominantly mission focused, supported by the Joint Force, to one that is campaign focused and able to contribute to ‘the material and especially moral erosion of an enemy’s ability and willingness to fight’ (Kiras, 2006, p. 3)

Discussion of this topic within the Special Operations (SO) community highlights the need for SOF to adapt, and for a renewed focus on understanding SOF’s role within the nebulous milieu of strategic competition (Joint Special Operations University, 2020). Such discussions have traditionally been grounded within one of two broad camps: technophiles who seek to exploit exotic machinery, the rise of autonomous systems, and cutting-edge technology to enable the SOF missions of the future; and neo-Jedburghs² who espouse a revitalisation of special warfare and population-focused activities to establish enduring global presence (Jones, 2021, p. 17). While this characterisation of the discussion oversimplifies the

complexity of debates surrounding SOF's utility, it illustrates that the level of technological application is a key consideration in determining the future of SOF. Few people are purist promoters of a single approach; however, there remains a tendency among employers and practitioners of special operations to consider the future utility of SOF within a paradigm heavily weighted towards the enduring integration of readily accessible and proven military technology. It is likely that this technology-focused approach will remain relevant in special operations against sub-peer enemies (of which middle powers such as Australia have few and will continue to have fewer in the future) where success is assured through technological superiority. However, it is unlikely to be a paradigm that effectively supports SOF to deliver military effect in the operating environments of the future—environments that will be characterised by great power dynamics. Instead, SOF will need new approaches to effectively engage peer and 'above peer' adversaries (Watlin, 2021, p. 42). In the battlefields of the future, SOF's enduring utility will derive from its capacity to contribute to a whole-of-government (WoG) campaign which focuses on disrupting and degrading an opponent's freedom of action.

In response to the demands posed by a contested, denied, and operationally limited future battlefield environment, SOF needs the capacity to employ low tech methods with high tech augmentation. This is because the rate of technological change has increased so rapidly that high tech responses are likely to be limited to a 'single shot'; once they are used, competitor adaptation will greatly diminish their likely future success. By contrast, low tech methods augmented with advanced technology will support SOF to offset their numerical inferiority. While the utility of such low tech methods may be simple to state, SOF's capacity to provide 'know', 'shape', 'strike' and 'understand' combat functions in the national interest will also rely on the capacity of government and senior military decision-makers to fully appreciate SOF's utility as a military instrument of national power.

This paper asserts that the contemporary utility of SOF is their ability to provide enduring disruption and degradation of competing state and non-state armed groups within a WoG campaign. Within the Indo-Pacific, inter-state relationships are becoming increasingly peer in nature (Palazzo, 2021, p. 19) and present challenges to maintaining military advantage. In this environment, the application of SOF should be viewed through the

lens of the technological spectrum to enable greater effect with less cost (economy of force) and increased options for decision-makers to select (expansion of choice) (Gray, 1996, p. 168).

This paper's analysis is divided into three sections. Firstly, it discusses the characteristics of low, mid and high tech capabilities and concepts to establish a technological spectrum of SOF operations. Secondly, it discusses the utility of SOF within the future operating environment. Finally, it proposes that the employment of low tech capabilities and operations that are selectively supplemented by their high tech counterparts is the best approach to enable SOF to effectively contribute to WoG actions in an environment of strategic competition.

The Technological Spectrum

Throughout history, nations have struggled to maintain technological advantage and superiority over competitors. The unprecedented change of the 20th and early 21st centuries has exacerbated this struggle. Technological solutions alone, however, are not a guarantor of success; victory is often gained through adapting processes in unique ways. As Williamson Murray identifies, there are two significant factors relevant to maintaining the technological edge: how well one estimates the impact of new technology, and how well one closes the gap between initial estimates and reality (Murray, 2011, p. 37). Despite the significant advantages technology offers, its successful implementation often results in the loss of its utility, largely due to the ‘paradox of lethality’ (the greater the initial lethality of a system, the more quickly an opposition responds to negate its effectiveness) (Leonhard, 1991, p. 305). For example, the seeds of China’s *Unrestricted Warfare* concept were sown in the success of the US-led coalition air-land battle in the 1991 Gulf War (Liang & Xiangsui, 1999, p. xix), which highlighted the global supremacy of US military technology in conflict. Similarly, the technological superiority of Israel’s Air Force in 2006 was undone by Hezbollah’s ability to conceal its positions with no substantial technological support (Lambeth, 2011). Thus, over-reliance on technological superiority is likely to create an environment where opposing forces rapidly develop effective countermeasures, and accurate assessments of these likely responses will support success.

This section introduces the concept of a technological spectrum that is fluid and vulnerable to rapid change. It provides definitions for low, mid and high tech capabilities and concepts. It discusses how persistent conflicts against sub-peer threats have triggered the generation of mid tech capabilities that have proven effective against the persistent sub-peer threats but will have

less relevance to SOF's contribution to peer and above-peer competition and conflict in the future. It underscores the fact that what is high tech today may, by virtue of the diffusion of technology, be standard use and thus mid/low tech tomorrow. The purpose of identifying a technological spectrum is to establish a foundation for the ideas discussed in subsequent parts of the paper.

Low Tech

Despite the enduring focus on generating technological offset, the utility of low technology approaches to generate asymmetrical advantages is becoming equally apparent. 'Low tech' is defined as those capabilities and concepts that employ commonly accessible technological means (such as commercial off-the-shelf (COTS) drones or autonomous systems, public communications infrastructure, and existing mechanical manoeuvre—i.e. commercial/private vehicles, vessels, and aircraft). The definition also includes those capabilities and concepts that make use of non-technological means (such as physical feints or demonstrations, veiled speech or alternative communication methods, human networks, and alternative manoeuvre—e.g. animals, kayaks/canoes).

The descriptive nature of this definition demonstrates the versatility inherent in low tech approaches. Such versatility has been exemplified in the last two decades not only by the actions of Violent Extremist Organisations (VEOs) but also by strategic competitors of the West. For the former, this is perhaps best exemplified in low tech capabilities through the manipulation of existing COTS technology to enable successful IED strikes of myriad varieties; not only have VEOs rapidly overcome technological countermeasures but they have done so at a fraction of the cost. For the latter, this is more evinced in the conceptual realm and the way in which competition is carried out. China's 'three warfares'³ and the primacy it gives to victory through manipulation and horizontal escalation stands in stark contrast to the US's 'third offset' strategy, which prioritises technological overmatch to achieve deterrence through the presentation of vertical escalation capabilities and decisive operations (Gentile, Shurkin, Evans, Gris , Hvizda & Jensen, 2021, p. ix). Although it is important to note that China is not neglecting the enhancement of its technological capability, its conceptual foundation increases the perceived benefit of investment in low tech approaches. By contrast, the West's continued pursuit of asymmetry against its

strategic competitors through technological overmatch has influenced a perception of decreased benefit from investment in low tech capabilities. Having seen the successful undermining of Western technological superiority through VEOs' use of low tech approaches, the West's strategic competitors continue to adopt low tech methods to undermine technological offset (Kilcullen, 2020).

A key characteristic of low tech is that it is less about the direct application of technology against an opponent and more about the capacity to generate indirect shaping effects by denying an opponent awareness, or by misleading. For example, the use of local 3G/4G networks to communicate and pass on coded/veiled information does not act directly against an opponent's ability to monitor communications. Rather, it works passively to prevent both detection and interception of communications. It does this by remaining within the noise of existing communications and preventing the opponent from accurately understanding the message. The BBC's broadcast of pre-arranged codewords to resistance elements in France to initiate unconventional warfare activities during the Second World War is demonstrative of this exploitation of existing noise. In a more contemporary example, German artist Simon Weckert's generation of a non-existent traffic jam on navigation apps through the collocation of 99 phones in a small trailer (Barrett, 2020) provides an example of how the exploitation of existing communications infrastructure holds the potential to manipulate environmental perception.

Mid Tech

As technology diffuses, becoming more accessible globally, the boundaries between low, mid and high tech capabilities and concepts are placed in a state of constant flux; what is advanced experimental technology today could quickly become commonly available tomorrow. Thus, the definition of 'mid tech' is relative. For the purposes of this discussion, mid tech is defined as those capabilities and concepts that are not easily accessible outside of well-resourced armed groups (primarily nation-state militaries) and not pressing at the forefront of technological development. Mid tech can be characterised as those standard and entrenched concepts and capabilities that demonstrate the employment of existing technology; it is the tested and confirmed SOF profiles that have enabled the successful conduct of operations over the recent decades.

An example of mid tech is the 'find, fix, finish, exploit, analyse, and disseminate' (F3EAD) targeting cycle that has come to dominate SOF planning. Through repetition and refinement, this process has evolved to absorb ongoing technological developments. Using mid tech military capabilities, SOF's ability to locate specific targets within complex environments, asymmetrically prosecute these targets, and then exploit these operations for further gain has been largely unimpeded in recent years. Indeed, while the F3EAD process was initially developed to negate the regenerative capacity of non-state armed groups, it has now become so entrenched within the targeting cycle that it is broadly considered essential to the success of SOF operations writ large. This conviction, however, warrants closer examination.

Outside the context of the counter-VEO (C-VEO) and counterterrorism (CT) contest, F3EAD is unlikely to work in an environment where SOF is a contributor, not the primary actor. In future operational environments characterised by strategic competition and peer or above-peer conflict, 'finding' and 'fixing' targets will inevitably be complicated by the opponent's likely use of disruption capabilities that have not previously been faced. While concepts of 'finish' (such as high-altitude parachute operations to enable stealth insertion) have been successful in the past (Jacobsen, 2019, p. 275), they will be severely challenged by an overwhelming detection network (Bronk, 2020). Further, the final triad of 'exploit', 'analyse' and 'disseminate' has relied on significant resources that may not be available to SOF in the future. Mid tech effects are often non-kinetic and extremely difficult to measure; many groups, particularly nation-states, will not publicly acknowledge the impact or will actively conceal the effect.

While the 'find, fix, and finish' elements of the targeting cycle will continue to degrade physical targets, there will be significant limits on SOF's ability to execute follow-on targeting to the same extent as it has done in recent history. This situation has the potential to negatively affect SOF's sense of competence by denying forces an awareness of success and could result in rapid decision-making that is focused more on giving the perception of success than solving existing environmental problems (Dörner, 1989, p. 179). This is not to say that mid tech capabilities and concepts are no longer relevant to the prosecution of modern conflict, but rather to emphasise that limitations will inevitably mitigate the effectiveness of any mid tech response to the peer and above-peer contests of the future.

High Tech

Technology enables a military force to offset numerical or positional disadvantage in order to achieve success in conflict. Since the rapid technological developments of the Second World War, Western military thought has largely been driven by technologically focused offset strategies that seek to create and win decisive engagements. Technology-centric approaches align neatly with a desire to minimise the social cost of conflict (the loss of machines is arguably far less damaging than the loss of people) and thus reduce potential for domestic upheaval.⁴

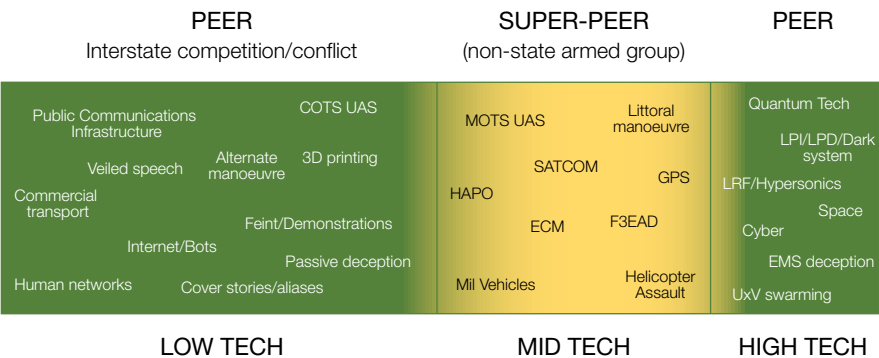
Despite the global diffusion of technology that enhances its availability, there remains a cutting edge of technological development that can be defined as 'high tech'. High tech encompasses capabilities and concepts that rely on, and experiment with, the most advanced technology available. High tech is highly responsive; it continually shifts to the forward edge of technological advancement. Accordingly, capabilities and concepts that were previously considered advanced (such as pattern recognition software and autonomous algorithms) revert towards the mid to low tech end of the technological spectrum as understanding of and access to them becomes widespread. While the military has historically led technological innovation, 'today's world brings the challenge of dual-use technology that is researched, manufactured and provided entirely by the private sector while having military application' (Havránek & Bagge, 2021). Therefore, there is a notable absence of ownership in the modern definition of high tech. This situation contrasts with the inherent accessibility of low tech, which yields universal ownership, while mid tech has historically been confined to the remit of well-resourced armed groups.

The commercialisation of high-end technology removes traditional limits on its availability to non-state actors and individuals. Opportunities for acquisition of high tech by independent actors are opened by avenues such as additive manufacturing and open sharing of software. Indeed, the recent reliance on Starlink to support Ukrainian operations is indicative of the potential power of independent actors in high tech (Trofimov, Maidenberg & Fitzgerald, 2022). Such access significantly broadens the range of actors able, for example, to experiment with swarming concepts and to employ sophisticated cyber activities for myriad objectives. This situation ensures that high tech will remain influential in the future operating environment.

Its effect on SO will, however, be difficult to predict, and maintaining an operational advantage will become increasingly challenging. The pursuit of a technological edge is a foundational element of generating asymmetry, but it must not operate in isolation or be viewed as the primary solution. Instead, the best utility for high tech in the future operating environment will be to augment other military concepts and capabilities.

Nothing in this analysis suggests that SOF’s operating concepts should be detached from technology. Rather, the purpose of the discussion is to recognise that—in an environment of strategic competition where victory is no longer characterised by decisive wins and losses—two key factors emerge. Firstly, our well-entrenched, well-practised and standard operating concepts and capabilities have enduring utility against sub-peer opponents. Specifically, they offer incredible utility in the enduring CT and C-VEO conflicts that Western militaries continue to face around the world. The second key factor is the imperative to recognise the potential military utility of low tech concepts and capabilities. The West’s preoccupation with mid tech must give way to a more focused approach that integrates the use of low, mid and high tech concepts and capabilities in response to the nature of the actual threat. A conceptual framework to illustrate this approach is provided in Figure 1.

Figure 1: Examples of capabilities and concepts aligned to primary utility



Strategic Competition and SOF Utility

Lawrence Freedman identifies that accurately predicting the appearance of future warfare is a challenging endeavour; despite the existence of some clairvoyants such as HG Wells, structures and systems are often led astray by poor assumptions (Freedman, 2017, p. xvii). Presumptions regarding the future operating environment are essential to help shape investment decisions surrounding future SOF capabilities and concepts. In May 2021, the Joint Special Operations University (JSOU) conducted a virtual forum series entitled *The Future of SOF in Strategic Competition: A Look at the Indo-Pacific and Beyond*. This was just one of many discussions highlighting the ongoing pursuit of a deeper understanding of the future environment in which war may erupt. The JSOU forum's title is indicative of the commonly accepted notion that we now exist in an environment of strategic competition.

The discussion of strategic competition warrants a much deeper examination than this paper can provide. Nevertheless, this section highlights how strategic competition has generated a movement towards a more ambiguous and ill-defined operating environment where, as Sean McFate asserts, there is no such thing as war and peace—both coexist always (McFate, 2019, p. 59). The reality is that the decisive conventional warfighting model that has underpinned the development of military capabilities and concepts in recent times is decreasing in relevance; the corresponding perception of SOF as the decisive military response option is diminishing in equal part. For SOF to remain relevant in an environment of strategic competition, it needs to have—and be seen by government to have—the capacity to persistently erode the material and moral capacity and will of an opponent. This section will briefly discuss

SOF's utility in the future operating environment and highlight that it is sustained campaigning, and not decisive action, that will sustain SOF's value as an instrument of national military power.

Strategic Competition

It is well recognised that the West's understanding of warfare is at an inflection point; the undercurrent of international competition has openly revealed itself to mixed reception. The war–peace paradigm that has been the primary lens for Western understanding of pathways to conflict is dissolving and being replaced by a conceptual spectrum from competition to conflict. Although there is much espousal of WoG approaches, the West still largely clings to the picture of warfare as: peacemaking by diplomats, war making by armed forces, and peacebuilding by aid and reconstruction personnel (Bobbitt, 2008, p. 155). This section will focus on three elements. Firstly, it will examine what we are competing for; secondly, it will address the growing importance of grand strategy; and finally, it will briefly address the position of technology in strategic competition.

In the first panel of JSOU's virtual forum, Mr Bob Jones asserted that if we accept that competition defines the strategic environment, we (the West) must answer the question: 'What are we competing for?' In his view, we are competing to maintain leadership of a rules-based order that primarily benefits our freedom of action; such leadership cannot be acquired forcefully. According to this view, we are not competing against others for control, but rather competing with others for influence. Importantly, Jones claimed that crossing the threshold to conflict indicates we have lost. Those held accountable (rightly or wrongly) for the escalation to conflict will have their legitimacy as the 'partner of choice' undermined as the relationship is no longer associated with gain but rather with significant loss (Joint Special Operations University, 2021). In the same panel, Dr Yuval Weber highlighted three components of strategic competition: defining rules, alliance management, and domestic political management. Framing future strategic challenges within these components will support the development of enhanced solutions. SOF's role in domestic political management is primarily limited to that of support to CT, and it is unlikely that this situation will change significantly in the future. However, there is immense potential for SOF to support nation states to enforce defined rules and to support

alliance management. These components, integrated within the broader context of global influence, will direct the employment of national power and shape the future of SOF.

Understanding that we are no longer competing against opponents for control, the objective in waging war becomes far less about trying to win (insofar as that relates to a decisive battle) and far more about trying to attain victory—defined as the achievement of the political objectives required to maintain free decision-making (Palazzo, 2021, p. 12). Consequently, whereas SOF objectives have become focused on the provision of tactical success for specific strategic objectives within a conflict, the future is characterised by the enduring need to employ SOF capabilities across the three components of strategic competition identified by Dr Weber. Within this paradigm, SOF's contribution needs to become less centred on the application of hard military power. Instead, as opponents compete for influence, SOF must better integrate its efforts with other WoG elements of national power to achieve strategic effect.

The global environment of strategic competition demands a 'large security view' (Liang & Xiangsui, 1999, p. 97) that sees grand strategy directing all elements of national power in the DIMEFIL⁵ construct. As Sean McFate comments, the absence of grand strategy in the West has commonly precluded unity of effort among the elements of national power (McFate, 2019, p. 75). This deficiency has been evident in the West's military responses to non-state armed groups. Such responses have been characterised by the separation of military actions (including SO) from ongoing national political objectives. The result has been the generation of independent lines of effort and measures of effectiveness that have been poorly aligned. As individual elements of national power become less important than the sum of the whole, however, well-developed grand strategy will be fundamental to a nation's capacity to engage in strategic competition.

McFate asserts that there are five characteristics of good grand strategy: it is not restricted to war; it is dynamic and flexible; it harnesses all elements of national power; it is offensive and defensive; and it is enduring (McFate, 2019, pp. 77–78). These characteristics are effective as design principles for future approaches of SOF. Importantly, they highlight that SOF's employment must be viewed primarily through the lens of campaigning, and enduring operations, in contrast to a focus on individual actions.

It is impossible to ignore the relevance of technology to the conduct of strategic competition; technology is essential to the public utilities, supply chain, and basic functions of most states. Recent cyber-attacks on energy infrastructure demonstrate the inherent risks of over-reliance on technology; a wealth of opportunities now exist to challenge competitors at minimal cost (Turton & Mehrotra, 2021). To remain competitive, therefore, all elements of national power must be able to rapidly adopt the most current technology and to use that technology proactively to generate influence. As technological advantage becomes increasingly difficult to maintain, success in strategic competition will be founded—not in the technology itself—but in its novel employment. In this regard, SOF is uniquely positioned to expand the options available to government by developing unique low tech approaches that (through appropriate augmentation by high tech) can successfully exploit the poles of the technological spectrum.

SOF Utility

There are numerous theoretical frameworks that seek to map out the historical evolution of SOF and its strategic utility, identify core skills essential for the conduct of SO, and enhance the connection of SOF to strategic decision-making (Gray, 2017, pp. x–xii). The purpose of this part of the paper is to examine two such theories in order to extract concepts that can provide the foundation for SOF to retain its strategic utility in an environment of strategic competition.

In 2014, an ASPI *The Strategist* paper highlighted the current perception of SOF among the general community. The paper observed that ‘[t]he public and the political establishment almost exclusively associate special operations with “kicking down doors”—despite the fact that this is only one element in a much broader operational continuum’ (Davies, Jennings & Schreer, 2014, p. 5). This narrow perception of SOF’s role has been fuelled by contemporary military campaigns that have persistently employed SOF in pursuit of CT and C-VEO objectives in a politically expedient manner. The fact is that, by using SO capabilities, governments can achieve (and be seen to be achieving) military effect while employing a minimal number of national assets. SOF has consistently achieved successful mission outcomes with the employment of a small force, for a defined period, primarily in direct action (DA) tasks. Consequently, the public perception of SOF has come to be characterised by the image of heavily equipped assaulters, supported by enduring platforms from all domains, conducting quick raiding missions to recover or destroy personnel and/or equipment. These preconceptions have been reinforced by high-profile military actions to eliminate key leadership figures such as Osama bin Laden and Abu Bakr al-Baghdadi.

This same narrow conceptualisation of the role of SOF is reflected in US Admiral McRaven's *Spec Ops* (1996, p. 4). Admiral McRaven defines SO as operations 'conducted by forces specially trained, equipped and supported for a specific target whose destruction, elimination, or rescue is a political or military imperative' (McRaven, 1996, p. 2). This definition aligns well with the public perception of SOF; the focus on a specific target and the prescription of specific effects generates a narrow interpretation of SOF's utility.

While useful within the prosecution of SO tasks, a limited conceptual aperture limits the understanding of SOF's unique potential to contribute to complex WoG responses to the challenges posed by strategic competition. Strategic competition will demand efficiencies in the pursuit of strategic objectives as power become increasingly multipolar, particularly among middle powers. Within this environment there will be less room for decisive events, and SOF will instead generate value through the establishment of an enduring and less decisive asymmetric advantage. Independent SOF actions will mean little unless interwoven with grand strategy and appropriately and clearly apportioned to supporting one of the three aforementioned components of strategic competition. It follows that, as SOF continues to develop the concepts that respond to the demands of accelerated warfare, it needs greater focus on constructing campaign plans that contribute to grand strategy.

In parallel to its own shift in focus towards campaign planning, SOF must make concerted efforts to change government perceptions about its appropriate role as an instrument of national power. As thinking shifts from a dichotomy of peace and war to a competition to conflict spectrum, the likelihood of a state achieving decisive advantage through the forcible imposition of its will is rapidly declining, if not already non-existent. In this environment, SOF needs to be viewed as a sustained campaign asset, not just a tool for decisive victory. This perspective can only be achieved if government views SOF as a supplement to soft power, rather than as simply an enforcer of hard power. It also requires SOF to be viewed as a sustained campaign asset, not simply as a tool for decisive victory.

SOF's potential to make significant contributions to national campaign approaches is recognised by analysts such as James Kiras (2006). Kiras defines SO as:

unconventional actions against enemy vulnerabilities in a sustained campaign, undertaken by specially designated units [SOF], to enable [military or other governmental] operations and/or resolve economically politico-military problems at the operational or strategic level that are difficult or impossible to accomplish with [military or other government] forces alone. (Kiras, 2006, p. 5)

Within this definition there are two important elements that ground SOF's enduring relevance within an environment of strategic competition.

Firstly, any decision to employ SOF must be viewed through a campaign lens. As countries compete for influence, the conduct of individual missions will become less important than the establishment of enduring presence and partnerships. Therefore, while conventional military and other governmental forces may remain focused on the contribution of one element of national power to grand strategy, through the conduct of enduring operations SOF has the potential to be the connective tissue among all elements. Although SOF's ability to generate hard power will remain limited due to its size, in the transition from peace to conflict, the enduring presence of SOF will enable a nation to more easily shift the weight of effort from the soft power elements (diplomacy, economy and information) to conventional military force if required.

The second relevant element of Kiras's definition is the term 'enable'. Consistent with the concepts propounded by Kiras, a campaign approach positions SOF in support of all elements of national power contributing to grand strategy. It recognises that SOF maintains uniquely trained organisations that can operate outside of the contemporary norms to enable and enhance the conduct of conventional practices of all national power elements when required. As governments seek to balance the enforcement of international rules, alliance management and domestic policy, SOF has the potential to be an integral element of the state's response options. Notably, such integration will require SOF to work more closely with other elements of national power, with potentially fewer resources, and with less military oversight than has previously characterised the conduct of short-duration, decisive missions.

SOF Core Activities

Anyone wishing to envisage the future operating environment would do well to consider the past: all things of this world, in every era, have their ancient counterparts (Machiavelli, 1517, p. 125). The rapid withdrawal from Afghanistan in August 2021 caused many to espouse similarities in the strategic environment to the post-Vietnam environment of the 1970s. This comparison is arguably relevant for SOF. After over a decade of supporting the campaign in Vietnam, SOF was significantly impacted by the general unwillingness of strategic decision-makers to assert military power. Despite the successful conduct of SO in support of the Vietnam campaign, the late 1970s witnessed a waning of SOF's relevance in the military community. Against the backdrop of Cold War great power dynamics, SOF became increasingly tuned to the conduct of CT missions. Other comparisons have been drawn between the current strategic climate and that of the 1930s (Morrison, 2020). Indeed, it is relatively easy to draw similarities between the regional great power interactions that characterised international relations during that period and the shifting power dynamics that we are witnessing today. Echoing the post-Depression social, political and economic dynamics, growing populist movements have pushed nations towards isolationism, and entrenched hegemonies have been questioned. The effects of the COVID-19 pandemic exacerbated a general trend towards reduced regional engagement.

The oft-repeated phrase 'the only constant is change' rings true; just as SOF has adjusted in the past, so too must it adjust in response to the demands of an increasingly volatile, uncertain, complex and ambiguous international world order. This section uses the Australian Strategic Defence Objectives of 'shape', 'deter' and 'respond' (Australian Department of

Defence, 2020, pp. 24–25) to highlight the utility of SOF in this context. It will briefly discuss that, as strategic competition plays out on the world stage, SOF must seek ways to more effectively leverage augmented low tech to ‘shape’ and ‘deter’ peer and above-peer competitors. Meanwhile, mid tech approaches remain relevant to the enduring pursuit of objectives against sub-peer threats primarily in the CT/C-VEO realm.

While there are several ways to characterise SOF core activities,⁶ they can be broadly categorised into three areas: (1) strategic reconnaissance (SR) activities conducted in sensitive environments to collect or verify information of strategic significance; (2) strike operations focused on short-duration offensive activities conducted in sensitive environments by specialised capabilities against targets of strategic or operational significance; and (3) special warfare (SW) operations conducted by, with or through a foreign force (legitimate or otherwise) to generate an environment conducive to strategic objectives.

If one accepts that a critical objective is to avoid the outbreak of conflict, the focus of national power must be afforded to the achievement of ‘shape’ and ‘deter’ objectives at a national level. In a strategic environment characterised by state competition for influence, SOF must seek ways to maximise its contribution to the state’s ‘shape’ and ‘deter’ objectives. Success in these efforts will not only reduce the likelihood that a state will need to ‘respond’ to a direct threat to its national interests but it will also establish the conditions under which a successful response is achievable.

Within the environment of peer and above-peer competition, the risk of miscalculation leading to the rapid vertical escalation of conflict, and associated diminution of state influence, means that, outside of the support to domestic law enforcement actions, SOF is less likely to be called upon to conduct traditional ‘strike’ operations involving direct action. Instead, lower profile SR and SW missions are likely to offer lower risk, higher return response options to government. SW activities are aligned to the achievement by states of rules definition and alliance management. This is because they can directly contribute to the integration of regional state and non-state actors—through the development of resilience and resistance networks (Fiala, 2020)—into a broader regional network that is supportive to and enhances strategic objectives.

Equally, by integrating SR into the WoG intelligence collection plan, warning times can be increased, enabling the state to develop deterrence and response solutions directly aligned to known problems. SW and SR activities are suited to campaign approaches that seek to gradually erode competing strategic influences. Importantly, they are less likely to generate friction because they do not involve the risk of generating rapid environmental changes.

Although SR and SW activities will become the preferred response option in peer and above-peer competition scenarios, there will still be some requirement to conduct strike operations in support of strategic objectives. For example, it is unlikely that the existing sub-peer threats, primarily encapsulated in CT and C-VEO engagements, will abate. In response to such threats, strike missions will offer government a military option to undermine the resilience of non-state opponents. Further, strike missions will remain centrally relevant to the management of domestic political threats. Just as the specific applications of SR and SW in competition continue to be refined, however, the character of strike missions will need to change.

For strike operations to be successful in the emerging operational environment, the way they are conceptualised must fundamentally change. Instead of short-duration direct-action assaults, strike missions will need to provide effects that are more easily concealed, are more difficult to assign blame for, and that help shape the environment below the threshold of conflict. To achieve this, the conception of SOF 'strike' must shift from large-scale force application to small, specialised entities that achieve horizontal escalation. There are four primary methods by which such escalation may be achieved. These are outlined in Table 1.

Table 1: Desired effects for future SOF Strike

	Kinetic Physical effect on target	Non-kinetic Non-physical effect on target
Technical Capabilities that primarily operate in non-physical realms (space, cyber, electromagnetic warfare)	Physical alteration of target through the manipulation of technical assets (e.g. destruction of Natanz centrifuge as a result of cyber activities—Operation Olympic Games).	Alteration of a target's behaviour or utility using technical means (e.g. 2007 cyber-attack against Estonia)
Non-technical Traditional measures that primarily operate in the physical realm (direct and indirect fire weapons, key-leader engagement, physical occupation by forces)	Physical alteration of target through physical means (e.g. killing of Osama bin Laden—Operation Neptune's Spear)	Alteration of a target's behaviour or utility using physical means (e.g. 1943 shaping of Abwehr decision-making—Operation Mincemeat)

In an environment of competition, emphasis should predominantly be on shaping behaviour and thus the non-kinetic effects that characterise the right two quadrants. This shaping of behaviour is, however, unlikely to be successful if it is not reinforced by the demonstration of capability to physically affect targets and thus the ability to deliver on the left two quadrants. As the strategic environment demands a shift away from non-technical kinetic effects towards technical non-kinetic effects (that enhance uncertainty and increase complexity of competitors' decision-making cycles), there will be limited opportunity and willingness to apply effects in the lower left quadrant. There will, however, be times when the overt demonstration or application of force will be essential to support 'shape' and 'deter' objectives in competition and, more importantly, it will remain essential to enabling response objectives. In employing various SOF elements to achieve these effects in support of a campaign approach, their injection on the peripheries will yield far greater benefit.

The delivery of military effects that achieve horizontal escalation (i.e. that shape and deter an adversary) requires that 'strike' activities increasingly occur at the periphery of existing international interactions. To achieve this, the government must be willing to maintain a forward presence of specialised personnel capable of rapidly generating desired effects when

required. The government must also be willing to exploit states of ‘durable disorder’ (McFate, 2019, p. 8) to generate desired effects, likely through surrogates. Such exploitation aims to indirectly overwhelm the capacity of competing states, potentially through a temporal exacerbation of existing disorder within its borders.

It is improbable that our current mid tech dominated approach to ‘strike’ operations will be able to deliver the non-technical kinetic effects needed in the future. Rather, SOF is more likely to be called upon to secure access to areas, personnel or organisations (through low tech means) for the provision of information to support follow-on decision-making and action. Such missions will enable the prosecution of military targets through high tech means—such as long-range hypersonic weapons—if and when required.

In sum, the emerging operating environment demands a shift in understanding around the utility of SOF. The requirements for a persistent national presence, increasing reliance on indirect approaches, and a true expansion of government choice drive SOF towards a focus on low tech approaches that achieve a more enduring asymmetry in effect. While high tech capabilities and concepts will remain highly relevant, states will become increasingly selective in their use. Exploitation by SOF of the poles of the technology spectrum provides the potential to shape and deter states with interests inimical to our own more effectively. The achievement of such effects reduces the likely need for a ‘response’ option while, in extremis, paving the way for victory.

A Future SOF Approach

As outlined in this paper, the future of SO should be grounded in low tech capabilities and concepts augmented with high tech assets. While mid tech approaches will remain vitally important in response to sub-peer threats, their priority will inevitably diminish in the face of great power dynamics. As Jack Watling observes, the exploitation of technological approaches needs to be determined by the nature of the opponent faced:

Against sub-peer adversaries, assurance is best achieved through joint enablement consistent with techniques [mid-tech approaches] perfected over the past three decades. Yet against peer adversaries the capability of modern sensors means that Special Forces will need the confidence to fight unplugged from both much of their technology and from higher echelons. (Watling, 2021, p. 42)

Drawing on the definitions provided earlier in this paper, a low tech augmented approach sees SOF pursue low tech capabilities and concepts as a primary method of conducting operations. A focus on low tech demands that SOF pivot from a preoccupation with the known mid tech capabilities and concepts that have been routinely employed over the past two decades. It is an approach that capitalises on the use of platforms and materials that are relatively easily acquired but, because the effects generated are often indirect, demands a willingness to invest more time to achieve mission effects. Such a focus on low tech is not altogether new; rather it represents a revitalisation of largely forgotten habits. Low tech approaches have demonstrated utility in enabling freedom of action to conduct SO in restrictive environments. For example, Australian SOF's most recounted historical success, Operation Jaywick, is a case study in low tech

employment that greatly enhanced freedom of action and mission success (Courtney, 1993, p. 3). In recent years, Israeli SOF's passive deception, through basic disguises and other low tech methods, has demonstrated the contemporary utility of low tech approaches to advanced militaries (Bergman, 2019, p. 615).

In parallel, opportunities need to be identified to exploit high tech to maximise the likelihood that low tech missions will be successful. High tech's place as an augmentation rather than the primary mission enabler recognises that technological advantages will become increasingly elusive. The augmentation of low tech with high tech capabilities and concepts, at the right time and the right place, underscores the enduring relevance of competitive advanced technology to the successful prosecution of SOF missions.

Employing Sean McFate's characteristics of grand strategy⁷ as design principles for a SOF approach, the following paragraphs describes how a focus on a low tech approach, augmented by high tech, can enhance SOF support to WoG efforts.

Dynamic and Flexible. Rather than relying on high tech solutions for success, advanced technological capabilities and concepts are used to augment SOF where they can be most effective. This may involve the use of high tech insertion or extraction capabilities, or the exploitation of high tech prosecution capabilities to destroy targets with minimal risk to the military force. High tech capabilities are largely specialist capabilities. So their use should be limited as much as possible to where they can generate the greatest effect. While a reliance on high tech may offer little redundancy, low tech approaches will often have built-in redundancy as a matter of necessity. In this way, the supporting–supported relationship between technology and SOF becomes dynamic and flexible.

Harness all National Elements. With a low tech focus, SOF comes to be regarded by government as a capability that helps minimise strategic risk and maximise effect, rather than as a decisive force that can resolve all problems. This conception of SOF is better aligned with the achievement of campaign effects at the WoG level. The associated increasing disaggregation will establish a reliance on establishing, in the planning phase, well-developed end-states and objectives. In this way, a low tech augmented by high tech approach will change the way in which SOF is accessed and tasked by government. As SOF will be a supporting force to other elements of national

power, its commanders will be required to become comfortable with detaching their forces and hearing little from them. In certain cases, high tech augmentation will enhance the passage of essential information to—and from—expeditionary SOF elements with reduced risk.

Offensive and Defensive. The existence of strategic competition involves an increased flow between offensive and defensive behaviour between competitors. In such an environment, it is unlikely that SOF can achieve decisive effect. As described by Robert Taber, however, it can effectively be used as a metaphorical flea: progressively wearing down the enemy to a point where they are unable or unwilling to achieve their goals. Through the reduction of the force's signature, and by generating a cost-efficient offset, a low tech approach enables SOF to contribute to a climate of collapse that recognises its relative power and enhances the international influence of its government. Recognising Australia's relative power, our victory is attained through 'not losing' (Palazzo, 2021, p. 19). SOF's ability to use low tech methods to pre-position for high tech offensive action, and then rapidly transition to a defensive posture, will be the hallmark of its utility in support of grand strategy.

Enduring. The low tech approach endures because it does not rely on specific platforms or technologies that are of limited availability. Indeed, achieving military effect may be as simple as the effective use of a foil balloon (Wu, 2021). The approach looks to establish SOF as a persistent presence in the right area that can support WoG objectives at any point in time and, if required, exploit high tech augmentation to do so. Rather than the focus surrounding individual missions, the espoused low tech augmented by high tech approach guides the focus of SOF effort when considering how to execute support to WoG approaches. In doing so, it maximises the value of SOF as an enduring instrument of national power.

Conclusion

Technology will always be present in competition and conflict. In the emerging operating environment, the state or armed group that is better able to manipulate technological capabilities and concepts is likely to achieve victory over its opponents. Maintaining a technological edge is becoming increasingly difficult, however, and the persistence of effects through the application of advanced technology is reducing. The technological capabilities of peer and above-peer competitors, as well as the empowerment of non-state armed groups through the diffusion of technology, has greatly reduced the state's ability to achieve asymmetry through the use of advanced technology.

The continual search for answers in high tech fails to recognise these limitations and slows the progress of alternative solutions that can be found at the opposite pole of the technological spectrum. High tech will remain essential but its increasing vulnerability to the so-called paradox of lethality, and the tightening capability gap between state militaries and independent actors, will relegate advanced technological capabilities and concepts to a reinforcing/supporting function. By contrast, low tech approaches will expand in utility as they offer a more cost-effective way to achieve strategic effect that has greater enduring potential to generate asymmetry. The known practices of executing SOF operations that occupy the mid tech realm are unlikely to remain useful outside of countering sub-peer threats. While mid tech capabilities must be maintained and should continue to leverage elements from the technology spectrum's poles, in an environment of strategic competition SOF needs to pivot from its preoccupation with the known mid tech capabilities and concepts.

The dissolution of the war–peace paradigm has been associated with a renewed conceptual paradigm that sees international relations occurring within a spectrum of ‘competition to conflict’. This shift is clearly articulated through recent strategic documents and it has triggered a review of how the elements of national power can best be used in support of the national interest. Although SOF has historically contributed across all elements—as both soft and hard power capabilities—the overwhelming focus in recent decades on direct kinetic operations has entrenched a myopic perception of SOF as a hard power instrument of military force that is employed to achieve decisive effect.

The perception of SOF must change to one that is less orientated towards decisive operations and increasingly focused on a campaign approach. SOF contributions must be aligned to the three components of strategic competition: defining rules, alliance management, and domestic political management. Within this framework, SOF’s support to grand strategy will be more readily achieved through approaches that do not rely on unique and novel technologies. Instead, persistent presence through special reconnaissance and special warfare missions will be the basis upon which SOF makes its contribution to WoG efforts. While ‘strike’ operations remain relevant, they will most likely occur only on the peripheries of international engagements, at precise moments to support clearly identified objectives for the achievement of horizontal escalation effects that reinforce other elements of national power. By contrast, the effective application of SOF to achieve the strategic objectives of ‘shape’ and ‘deter’ will help ensure that national ‘response’ options either are not required or have a greatly enhanced likelihood of success. The realisation that, at the strategic level, conflict equates to ‘loss’ will shape perceptions of SOF’s utility away from that of its being an instrument of decisive operations towards one in which SOF contributes materially to campaign approaches in support of grand strategy. Reorienting SOF towards a low tech focus enhances its resilience and is likely to ensure it retains enduring relevance in an increasingly cluttered and flat international environment.

Biographies

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Captain James Easton is a serving Australian Army Officer. He has previous experience within Ground Based Air Defence including a two year posting to the US Fires Centre of Excellence in Fort Sill, Oklahoma. He has completed a Bachelor of Arts (History and Politics), Master of Arts (Strategy and Security), Master of Special Operations, and a Master of War Studies. He maintains a keen interest in the trends of conflict and international relations.

CAPT Joshua Kolo

Captain Joshua Kolo is a serving Australian Army Officer. He has completed a Bachelor of Business and is currently undertaking the Master of Cyber Security Operations with the University of New South Wales.

Endnotes

- 1 SOF is defined here as forces that are specially selected and trained to execute operations outside the remit and scope of conventional forces.
- 2 Neo-Jedburghs refers to those individuals who perceive SOF value in the framework of a modern realisation of the famous World War II Allied Special Forces program to conduct unconventional warfare behind German lines.
- 3 China's three warfares are public opinion warfare, psychological warfare, and legal warfare.
- 4 This concept is more thoroughly examined in concepts put forward by Andreas Krieg and Jean-Marc Rickli in their work *Surrogate Warfare*.
- 5 Diplomatic, information, military, economic, financial, intelligence, law enforcement.
- 6 Jack Watling's recent paper 'Sharpening the Dagger: Optimising SOF for Future Conflict' identifies seven uses of SOF (strategic reconnaissance; interdiction and raiding; fomenting resistance and insurgency; partnered operations; covert operations; clandestine operations; high-profile and high-risk operations), while USSOCOM identifies 12 core activities (direct action; special reconnaissance; unconventional warfare; foreign internal defence; civil affairs operations; counterterrorism; military information support operations; counterproliferation of WMD; security force assistance; hostage rescue; counterinsurgency; foreign humanitarian assistance).
- 7 It is not restricted to war; it is dynamic and flexible; it harnesses all elements of national power; it is offensive and defensive; and it is enduring.

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