

Against the Ascent of Hybrid Warfare: Expanding the RSAF's Capacity in Peace and War

by SLTC Wong Hin Kai, MAJ Anthony Lau Kai Heng & CPT James Yong Dun Jie

Abstract:

The authors highlight that the RSAF is a highly responsive force, capable of handling a wide spectrum of missions from peace to war. According to them, while our ability to deal with conventional warfare remains our *raison d'être*, the RSAF will increasingly be called upon to address threats and contingencies in peacetime. This is a consequence of rising global interdependency and interconnectivity, where the application of hybrid warfare by state and non-state actors through a blend of conventional and unconventional, regular and irregular, as well as information and cyber means becomes more prevalent. Singapore, given our connectivity to the world, geostrategic locale and demographic makeup, is not immune to these multi-faceted threats that are without clearly-defined adversaries and time frames. To sustain Singapore's peace and security, the RSAF must remain relevant and effective as it contributes to the Whole-Of-Government approach in countering potential hybrid threats.

Keywords: Hybrid Warfare, Technology, Human Capital, Homeland Security, Resilience

INTRODUCTION

The Republic of Singapore Air Force (RSAF) is a highly responsive force, capable of handling a wide spectrum of missions from peace to war. While our ability to deal with conventional warfare remains our *raison d'être*, the RSAF will increasingly be called upon to address threats and contingencies in peacetime. This is a consequence of rising global interdependency and interconnectivity, where the application of hybrid warfare by state and non-state actors through a blend of conventional and unconventional, regular and irregular, as well as information and cyber means becomes more prevalent. Singapore, given our connectivity to the world, geostrategic locale and demographic makeup, is not immune to these multi-faceted threats that are without clearly-defined adversaries and time frames. To sustain Singapore's peace and security, the RSAF must remain relevant and effective as it contributes

to the Whole-Of-Government approach in countering potential hybrid threats.

This essay will outline the ascent of hybrid warfare and the associated threats to states, along with how the RSAF is currently contributing to Singapore's defence against this emerging form of warfare. The essay will conclude with the proposition for the RSAF to continue to sharpen and strengthen its edge against hybrid threats, by actively exploring new opportunities and further developing our people and capabilities.

HYBRID WARFARE

"The very 'rules of war' have changed. The role of non-military means of achieving political and strategic goals has grown, and, in many cases, they have exceeded the power of force of weapons in their effectiveness. The focus of applied methods of conflict has altered in the direction of the

broad use of political, economic, informational, humanitarian and other non-military measures—applied in co-ordination with the protest potential of the population. All this is supplemented by military means of a concealed character, including carrying out actions of informational conflict and the actions of special operations forces. The open use of forces—often under the guise of peacekeeping and crisis regulation—is resorted to only at a certain stage, primarily for the achievement of final success in the conflict.”

- General Valery Gerasimov, 2013¹

According to the ‘Gerasimov Doctrine’, hybrid warfare comprises three mutually-reinforcing principles. First, it blurs the boundaries between wartime and peacetime, space and time, as well as the actors involved. This makes it increasingly difficult for one to assess if a state is at war, under attack or at peace, and targeted by whom. Second, it involves

the combined use of instruments of national power to achieve the desired end state. Military forces are no longer just applied in conventional warfare but have become a part of the broader national strategy. Third, it involves the simultaneous and co-ordinated application of instruments of national power, making it extremely challenging for a state to detect the centre of gravity of the attack and consequently its ability to counter the attack.²

The Changing Face of Modern Warfare

The concept of hybrid warfare is not new. In 1999, two senior officers from the People’s Liberation Army published a book on how a nation can defeat a technologically superior opponent through alternative methods such as ‘Lawfare’, Economic and Network warfare, and Terrorism.³ In the past decade, the application of hybrid warfare has been gaining ground where different instruments of national power were purposefully co-ordinated and employed by adversarial states to achieve their strategic objectives. Notable

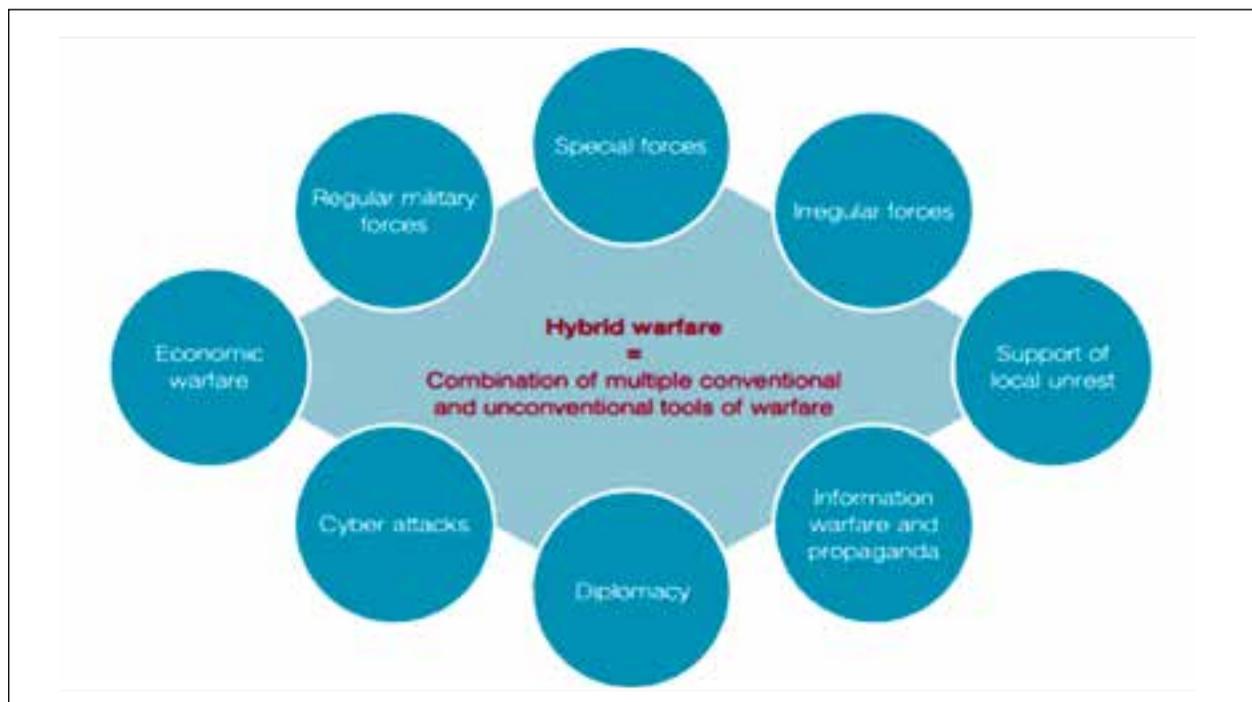


Figure 1: Concept of Hybrid Warfare⁴

examples include the 2nd Lebanon War in 2006, the Estonian Cyberwar in 2007, the Russo-Georgian War in 2008 and most recently, the on-going hybrid war against the Islamic State of Iraq and Syria (ISIS). Specifically, Russia's operations in Crimea and subsequently in Eastern Ukraine have shown a growing emphasis on 'guerrilla geopolitics' in which novel tactics are needed to target enemy weaknesses and avoid overt altercations, especially with powers or alliances with greater military, political and economic might.⁵

The Ascent of Hybrid Warfare

As states become increasingly connected and dependent on one another, the 'cost' of a full-scale conventional war becomes a less attractive tool or option to be considered for the resolution of conflicts. The Trans-Pacific Partnership, Regional Comprehensive Economic Partnership as well as the Association of Southeast Asian Nation (ASEAN) Plus Free Trade Agreements, which serve as building blocks towards greater regional economic integration and an eventual Free Trade Area of the Asia Pacific, are just some examples of how global interdependencies have significantly reduced the odds of a direct military confrontation between rivals today.

Besides the plausible blending of national powers to threaten a state from multiple fronts—terror, cyber, information, psychological, conventional and criminal—the fact that such threats are more challenging to detect and counter as opposed to dealing with a direct adversary in conventional warfare has made hybrid warfare a more attractive option for states in achieving their strategic objectives.⁶

Moreover, it maximises the likelihood of survival and even victory for a state that is up against another that is superior in numbers, tactics and technology.⁷ For instance, the on-going territorial disputes in the

East and South China Seas may provide an ideal test bed for states to employ hybrid warfare and allow them to potentially gain an advantage unnoticed. While a 'war' in such a contested space may already have taken place psychologically, politically and economically even though conventional forces are not employed, it will be so subtle, incremental and abstruse that the states concerned may either not know that they are being challenged, or are unable to respond adequately as they have realised the situation too late.⁸

Beyond state-on-state conflicts, hybrid warfare may also be pursued by non-state actors where irregular procedures and tactics are employed against states. Such unconventional methods may range from terrorism, insurgency, guerrilla fights, organised crime, cyber attacks against military targets and financial institutions, as well as the destruction of essential infrastructure, communications and transport elements.⁹ This is perhaps best illustrated by the on-going conflict with ISIS.

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Hybrid Threats

Hybrid threats can adopt and adapt a wide range of technology, including weapons of mass destruction. Such threats can operate conventionally and unconventionally, and employ asymmetric permutations of traditional, irregular and criminal manoeuvres in a flexible manner.¹⁰ Beyond the use of the military instrument, other instruments of national power—diplomatic, economic and information—

are also exploited in the hybrid threat construct to exacerbate an already complex problem for states.

On the diplomatic front, international organisations or forums have and will continue to serve as platforms for states to garner support for their strategic agendas, and to justify *jus ad bellum* during conflicts with their adversaries. In our region, forums such as the ASEAN Defence Ministers' Meeting (ADMM) and the ADMM-Plus have performed fairly well as avenues to discuss and exchange views on Southeast Asian security issues as well as to promote practical functional co-operation.¹¹ However, the seemingly inevitable shift from the current United States (US) unipolarism to a bi-polar or multi-polar international system will require smaller states to be more dexterous in their use of diplomacy.¹² In particular, it remains to be seen if the influence of existing international organisations and forums will be diluted due to the rise of new partnerships such as those fronted by China. This may eventually compel some states to consider employing non-state actors for non-attributable but impactful influences on their adversaries, adding new complexities to the nature of conflicts. Given the digitisation and interconnectivity across financial markets, states could leverage economic levers—forceful fiscal policies, currency intervention or even trade sanctions—to indirectly reduce another state's political and military influences. States could also exploit trade interdependencies to manipulate or even immobilise their adversary's key imports and exports, with the aim of stifling their economy.

The future technology landscape will be replete with innovations that will underpin developments in the military and information domains of hybrid warfare. The growing ubiquity of high-speed Internet access, proliferation of mobile devices and the advent of the 'Internet of Things' will see cyber space becoming not only an intrinsic part of peoples' lives, but also

a strategic integrator of armed forces and military technology.¹³ Space-based technologies and artificial intelligence will scale new heights, and these will very much empower individuals and improve lives at the same time. However, the rapid pace of technological advances also presents a host of new threats to national security in the military and information domains, as the nature of conflict assumes a new complexion with state and non-state actors seeking to exploit them for their pugnacious objectives.

Singapore is certainly not immune to hybrid threats. As a 'little red dot' with an open economy that is subject to varying influences, Singapore is particularly susceptible to hybrid warfare. Considering reports of Russia's successful 'demonstration' of the effective use of non-kinetic options such as cyber attacks, information warfare and propaganda in Crimea and Eastern Ukraine, Singapore's extensive reliance on technology, networks and connectivity has provided the requisite infrastructure for these non-kinetic options to thrive in. It is therefore critical that Singapore, the Singapore Armed Forces (SAF) and the RSAF continue to build up a strong defence during peace, and further leverage new technologies to respond to security challenges externally and internally.

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THE RSAF'S CONTRIBUTIONS TO SINGAPORE'S DEFENCE AGAINST HYBRID WARFARE

The SAF's primary role is to enhance Singapore's peace and security through deterrence and diplomacy, and should these fail, to secure a swift and decisive



In 2010, the Heron 1 Unmanned Aerial Vehicle (UAV) took over the Searcher-class UAV, which had been in service with the RSAF since 1994.

victory over the aggressor. A strong SAF forms the bedrock for a peaceful, stable country that creates conditions conducive for economic growth and the well-being of its people. However, should war break out, the nation depends on the SAF to defeat the aggressors swiftly and decisively. In this regard, the RSAF plays an important role in the overall SAF campaign through its provision of Air Power with speed, reach, flexibility, precision and mobility.

SHAPING THE SAF'S CAMPAIGN DECISIVELY, PROVIDING SUPPORT FOR HOMELAND SECURITY

In conventional warfare, amongst many other functions, the RSAF is capable of decisively shaping the SAF's campaign by (1) pursuing air superiority so as to ensure the freedom of movement for the SAF's ground and naval forces; (2) neutralising strategic targets with the firepower of its high-end fighters and attack helicopters; and (3) increasing the success rate for upcoming missions through the use of its airborne surveillance and reconnaissance capabilities, which include the Unmanned Aerial Vehicles (UAVs). The RSAF offers the SAF a strategic leverage with its strong air combat assets that can be deployed to either neutralise

dangerous threats posed by the adversary before the deployment of ground troops, serve as a deterrence against enemy troops, or offer vital protection for our military forces when required.

In hybrid warfare, adversaries may also deploy irregular forces such as civilian-dressed individuals to damage civil infrastructure or harm the population directly through the use of terrorist methods. This will undermine the government's ability to provide basic security for the nation's larger nation-building efforts, and weaken the population's confidence and will to fight. It is thus important for the RSAF to continue to lean forward in support of the SAF and other national security agencies for homeland security, even as it commits itself to winning the military campaign.

The RSAF's UAV assets can provide tremendous value in this regard. The UAVs are able to provide pervasive surveillance over large areas and pick up real-time imagery of suspicious activities. This facilitates the coordination of the necessary responses to quell threats posed by irregular forces promptly. The usefulness of the RSAF's UAV assets in protecting civil infrastructure and the population can be seen in the success of the deployment of a UAV Task Group to Afghanistan in 2010. In this deployment, the UAV Task Group supported the multinational reconstruction efforts in Afghanistan by providing surveillance over key roads and identifying Improvised Explosive Devices (IED) threats. These enhanced the security of Afghan locals and international forces there.¹⁴ The lessons learned and skills honed could also be employed in enhancing our homeland security.

STAYING VIGILANT AT HOME, CONTRIBUTING TO THE INTERNATIONAL FIGHT AGAINST TERRORISM

During peacetime, the RSAF also plays highly important roles in protecting Singapore's skies and



RSAF pilots dashing to their fighter jets after being activated.

advancing Singapore's interests. With terrorism, threats can come in unexpected ways, suddenly, and from anywhere. Such threats seek to strike fear in the populace whether by directly imposing harm to their lives or by affecting the economy. The 9/11 incident, which saw terrorists hijack four civil airliners and crashing three of them into the Twin Towers in Manhattan and the Pentagon in Arlington County, was a grim example of such a devastating threat. The RSAF is deeply aware of the devastation such aerial threats can pose to the nation, and stays vigilant 24/7 to guard against these types of attacks. In safeguarding the peace and security of Singapore, the RSAF monitors Singapore's skies round the clock with its robust suite of sensors and information networks to identify and track potential threats. If necessary, at any point in time, the air defence control team on duty can orchestrate a rapid response by activating the RSAF's fighter jets and Ground-Based Air Defence (GBAD) units on 24/7

standby.¹⁵ Such a contingency occurred in 2008 when the RSAF activated two F-16 fighters to intercept a Cessna 208 aircraft that was flying towards Singapore airspace without an approved flight plan.¹⁶

The emergence of extremism and terrorist attacks which target civilian populations appears to be a long-term threat which may form a 'new normal of troubled peace'. In a speech at the 15th Shangri-La Dialogue, Minister for Defence Dr. Ng Eng Hen highlighted a need for countries and their security forces to work closely together to combat terrorism, besides strengthening national security. In a separate speech, he also acknowledged that the threat posed by terrorism is a long-term one, and "unless the source of this radicalisation is disrupted, our citizens at home cannot be protected".¹⁷ This was why Singapore decided to deploy military assets to support the multinational efforts in tackling the ISIS threat at its source.¹⁸

Capabilities provided by the RSAF have proven to be highly relevant in supporting this cause. For example, the deployment of an Imagery Analysis Team (IAT) at the Combined Joint Task Force Headquarters in Kuwait since September 2015 provided the coalition with intelligence support to identify terrorist infrastructure and activities.¹⁹ The RSAF also deployed a KC-135R tanker to support the air-to-air refuelling of coalition aircraft in May 2015. These contributions offered valuable help and were appreciated by international partners.

CONTRIBUTING TO SINGAPORE'S TOTAL DEFENCE

The 'new normal of troubled peace' that Singapore could face will contain multiple characteristics of hybrid warfare—a blurring of distinction between peace and war, increased attacks on non-kinetic domains such as cyber space and the informational sphere, and the unclear attribution of perpetrators. Affirmed in a speech by Minister for Defence Dr. Ng Eng Hen at the Committee of Supply Debate 2015, the Total Defence concept continues to be the way forward to counter hybrid warfare and sustain a resilient Singaporean society.²⁰

The RSAF plays important roles in the pillars of Total Defence. Of significance, the RSAF, widely recognised as a technologically advanced and professional air force, contributed directly to the SAF's ability in maintaining an effective deterrence against potential aggressors, and countering other peacetime threats. The RSAF also keeps up its contributions to Military Defence by continually renewing its technology to sustain its technological lead, and regularly honing its warfighting capabilities through recurring overseas exercises such as Forging Sabre, Cope Tiger and Wallaby. For Civil Defence, the RSAF's multiple contributions to Humanitarian Assistance and Disaster Relief (HADR)



RSAF aircraft being deployed to Indonesia to assist in the first phase of disaster relief operations in the wake of the Boxing Day tsunami in 2004.

efforts over the years not only showed that the RSAF has relevant capabilities to contribute to swift and effective disaster relief, but also strengthened the nation's capability in handling the aftermath of a crisis. Examples of the RSAF's deployments include aiding Indonesia in its rescue efforts in the aftermath of the Boxing Day tsunami in 2004, participating in the search-and-recovery efforts for downed AirAsia flight QZ8501 in 2014, and assisting in firefighting efforts in Chiang Mai in 2015. The profiling of the RSAF's strong capabilities, high operational readiness, and mission success also lends support to Psychological Defence. A strong and effective RSAF helps to strengthen the public's confidence and positive perception of Singapore's defence, and reaffirm the strength of our nation.

To remain relevant and prepared, the RSAF has to constantly review the effectiveness of our platforms and systems against hybrid threats and exploit opportunities presented by technology.

EXPANDING THE RSAF'S CAPACITY IN PEACE AND WAR

The RSAF of the future must continue to sharpen and strengthen its edge against the threat of hybrid warfare. It must actively seek out new opportunities and explore novel capability domains afforded by advancements in technology, build safeguards and review our concept of operations in the face of mounting threats in cyber space, develop our people to operate certain critical capabilities and better respond against hybrid warfare, and further strengthen our National Service (NS) construct and resilience against the dangerous hybrid threats in an increasingly complex and contested environment.

Harnessing Advancements In Technology

Technological advances and greater connectivity have and will continue to influence the speed and lethality of hybrid warfare as well as the manner in which it is conducted. To remain relevant and prepared, the RSAF has to constantly review the effectiveness of our platforms and systems against hybrid threats and exploit opportunities presented by technology. While technology will continue to be a critical force multiplier for a small Air Force such as ours, the RSAF must also be cognisant of the potential pitfalls that may be brought forth through their application. The RSAF will do well to develop the necessary defences against these, taking into consideration our unique context and constraints.

Building Strong Cyber Defence

As the RSAF becomes increasingly networked in the years ahead, its growing reliance on cyber space to integrate technologies and forces will pose challenges. To guard against degradation of the RSAF's capabilities and operational effectiveness in peace and war, we must build up our cyber defence capacity and re-examine whether existing concepts of operations are still optimal

in employing airpower during cyber attacks. Given the emphasis on cyber defence developments in the SAF, the RSAF must continue to learn and gain insights from other established militaries on how they are addressing cyber-related challenges in hybrid warfare. The RSAF should also further explore and develop new concepts of conducting cyber defence, in order to ensure the effective employment of our warfighting capabilities even in the face of an increasingly sophisticated cyber threat environment.

Developing The RSAF's Human Capital

Fuelled by rapidly-developing technologies, the proliferation of hybrid threats will require certain critical capabilities and competencies in Information-Cyber-Electronic-Intelligence domains to be developed for an effective defence. This brings about new human capital demands beyond the already high commitments for the RSAF's conventional military capabilities. The RSAF will need to raise, train and sustain the requisite manpower and build up the right competencies in them to operate such capabilities effectively. Amidst the backdrop of Singapore's population challenges, however, it is essential for the RSAF to examine the relevance of our current vocational expertise in taking on the new roles while considering new vocations we might possibly need.

Enhancing Resilience Through NS

The concept of NS has served Singapore well over the past fifty years. As we celebrate NS50, it is important for the RSAF to reaffirm the role and contributions of our NSmen and examine how the current NS construct can be further sharpened and strengthened to support the national effort against hybrid threats. Specifically, the RSAF will need to look at better engaging our NSmen to keep them abreast with the latest developments in our threat environment, as well as examine how they can better work together with their active counterparts

and support capabilities in response to the persistent but evolving security challenges. Beyond military capacities, the RSAF will also need to explore other avenues that will better leverage NS to encourage Singaporeans to take greater ownership in keeping Singapore safe, strong and resilient.

CONCLUSION

In conventional capability, the RSAF has done well in attaining a significant edge in direct conflicts. Instead of a head-on confrontation with us, potential adversaries are likely to employ hybrid warfare and try to wear us down with protracted low-intensity conflicts below the threshold of war. To continue to safeguard Singapore's peace and security, the RSAF will need to expand capacity in both peace and war. Moving forward, the RSAF should look at developing effective non-conventional capabilities to complement our conventional build-up under the 3rd Generation RSAF transformation. The essays in this journal will outline some key thrusts that the RSAF could explore in order to remain relevant and effective against the ever-evolving threat of hybrid warfare in an uncertain world. 🌐

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SLTC Wong Hin Kai is currently the Head of Concepts and Technology Office in Air Plans Department. An Air Warfare Officer (AWO) (Command, Control and Communications) (C3) by vocation, he attended the Indonesian Command and Staff College in 2009. SLTC Wong holds a Bachelors of Engineering (Hons, 1st Class) from Sydney University and a Masters of Science in Management of Technology from the National University of Singapore (NUS).



MAJ Anthony Lau Kai Heng is an AWO (Ground-Based Air Defence) (GBAD) by vocation and is currently a Branch Head in Air Plans Department. He attended the 45th Goh Keng Swee Command and Staff Course in 2014 and holds a Bachelors in Mechanical Engineering (Hons, 2nd Class Upper) from NUS.



CPT James Yong Dun Jie is an AWO (Command, Control & Communications) (C3) by vocation. He is currently Planning Officer (Air), Joint Operations Planning Branch (JOPB) in Joint Operations Department. CPT Yong graduated from University College London with a Bachelors of Science in Statistics, Economics and Finance with Honours, and a Masters of Science in Operations Research from Columbia University.