

Editorial

In this first issue of POINTER for 2017, we are pleased to present an Air Force-themed issue. The theme is 'Dealing with the Challenges of Hybrid Warfare: An RSAF Perspective.' Today, threats and challenges to Singapore may come in many unexpected shapes and forms. The nature of warfare is also evolving. It will become more complex and can involve weakening the target nation through non-kinetic means such as cyber attacks and generating social tension through disinformation. Such campaigns, blending conventional warfare with elements of irregular warfare and non-kinetic attacks, are commonly referred to as hybrid warfare. The essays in this issue will explore important topics that the Republic of Singapore Air Force (RSAF) needs to reflect upon, in the face of hybrid warfare, covering possible changes in their operating context, challenges and opportunities that they will encounter, and the capacity and new competencies that they need to create within the RSAF.

The essay entitled, 'Against the Ascent of Hybrid Warfare: Expanding the RSAF's Capacity in Peace and War' is by SLTC Wong Hin Kai, MAJ Anthony Lau Kai Heng and CPT James Yong Dun Jie. In this essay, the authors define the concept of hybrid warfare and examines what this means to Singapore and the RSAF. 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 the ability to deal with conventional warfare remains RSAF's *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. The authors conclude that 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.

The essay, 'Technologies in Hybrid Warfare: Challenges and Opportunities' is written by ME6 Gabriel Tham, CPT Edward Wong & ME4 Kelvin Kuo Kai Ming and discusses how emerging and disruptive technologies may be harnessed to overcome challenges posed by hybrid warfare and the potential pitfalls that may be introduced by such technologies. The authors stressed that in recent years, hybrid warfare has become increasingly wide spread, comprising various conventional and non-conventional means of warfare, as well as non-military options. They highlighted that while technological progress would generate more opportunities, it could also bring about threats to a country. They have cited examples such as drone-related technologies which could pose a sizeable threat due to their accessibility and low cost, enabling mass production and swarm tactics. For Singapore, the RSAF will also have to consider methods of minimising collateral damage in air strikes, to alert civilians to impending air strikes, although such technologies are not without limitations. The authors added that Electromagnetic Pulse (EMP) weapons could also pose a significant threat to Singapore, and to combat these, the RSAF could choose to employ active or passive systems. The authors conclude that ultimately, continual technological development is essential for the RSAF to maintain its edge over potential aggressors.

LTC Anthony Wong, MAJ Christopher Eng, CPT Ronald Loh Ming Yao and CPT Jeffrey Ng present their perspective on 'Cyber Threats in Hybrid Warfare: Securing Cyberspace for the RSAF'. Their essay explores cyber security in the light of the ascent of hybrid warfare and its implications for the RSAF. This essay focuses on how cyber attacks have evolved over the years and how other established militaries addressed the cyber threat challenge. Drawing insights from these observations and in the face of an increasingly

sophisticated cyber threat environment, the authors highlighted that the RSAF would need to develop a multi-layered cyber defence strategy to guard its capabilities and operational effectiveness in peace and war.

The fourth essay, 'Developing Key Competencies in the RSAF to Defend Against Hybrid Warfare' by ME6 Spencer Goh, MAJ Joe Zhang, MAJ Tang Mun Bbun and CPT Rae Tan Yiwei examines the attributes and skillsets that are required of RSAF professionals in order for the RSAF to remain responsive to the threat of hybrid warfare. According to the authors, Singapore is a small country with open and intricate technological networks and as such, we are particularly susceptible to hybrid wars where military and non-military tools are employed in an integrated campaign to achieve surprise, seize the initiative and overcome a country. In order to protect Singapore, the authors feel that the Singapore Armed Forces (SAF) should increase its focus on building the capabilities to counter the unconventional threats that are typically used in hybrid warfare. Their essay focuses on the four typical domains within hybrid warfare namely, information, cyber, electronic and intelligence. The authors feel that these are the areas in which the RSAF must build on, in order to be able to defend Singapore by ensuring the attainment of air superiority and the provision of support for the SAF and Whole-of-Government efforts in hybrid warfare.

The final essay, 'NS50: Defending Singapore 50 Years and Beyond' by LTC Low Teck Loong, LTC Lee Kok Kiang, MAJ Nah Jinping and CPT Aaron Chan reflects on the success of National Service (NS) over the past 50 years as well as explores further avenues to encourage Singaporeans to take greater ownership of keeping Singapore safe, strong and

resilient in the face of all forms of threats through NS. In commemoration of the 50th anniversary of NS this year, the essay briefly traces the origins of NS as a necessary response to the critical need of national security in newly-independent Singapore. The authors highlight that part of the success of the policy has been due to its evolution over the years to stay relevant to Singapore's society and meet our security needs. This has included building a strong NS training system, creating the Singapore Armed Forces Volunteer Corps (SAFVC), increasing opportunities for National Servicemen (NSmen) to contribute, easing administrative restrictions, improving recognition and benefits for NSmen and encouraging community support for them. Lastly, the authors considered several possibilities of how the RSAF could tap on the NS resources in response to emerging threats in hybrid warfare, such as harnessing the current force and shaping the future, strengthening individual skills and knowledge and strengthening partnership with the private sector and other ministries.

At this juncture, POINTER would like to bid a fond farewell to LCP Jeria Kua as he leaves to pursue further studies. We thank him for his contributions and wish him well in his future endeavours.

A warm welcome to Mr Josiah Liang, our DPO representative who joins the POINTER Editorial Board.

We would also like to extend our warmest welcome to COL Simon Lee who takes over as Chairman, POINTER Editorial Board. Welcome, Sir!

The POINTER Editorial Team