The ambitious reform plans of the People’s Liberation Army: Progress, prospects and implications for Australia

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Introduction

In late 2015, the Chinese People’s Liberation Army (PLA) launched its most extensive and potentially transformative set of reforms since the 1950s. These reforms have had immediate and far-reaching effects on the PLA’s organisation, force posture, command and control structures, and internal politics. Looking ahead and over the longer term, these reforms will likely help the PLA become a far more capable fighting force. However, according to its own estimates, the PLA is now only about halfway through its modernisation timeline, and decades—and many obstacles—still remain in this long-term process.

Given these important developments for Australian defence and security interests, this article considers the critical advances and ongoing challenges for current reform and reorganisation plans of the PLA. The article will focus particularly on how and whether the PLA is making progress in joint operations and the development of deterrent and coercive capabilities across multiple domains. In order to do this, the article will first review the strategic rationale, structural changes and operational aspirations of the reforms. Second, the article assesses the progress and challenges faced by the PLA across several warfighting domains: land, sea, air, aerospace (missiles), space and cyber. The article concludes by highlighting some key challenges these developments present to Australian defence and security.
Overview of the reforms

The basic contours of the PLA reforms have been made clear by the authorities in China and further elaborated by subsequent research. Broadly speaking, two important objectives drive the reforms. The first, a political objective, aims to strengthen Chinese Communist Party (CCP) control over the PLA. The second, an operational objective, seeks to transform the PLA from an untested, degraded and stove-piped military to a force increasingly capable of conducting joint operations, fighting and winning intensive conflicts against technologically sophisticated foes, and doing so farther from Chinese shores.

To achieve these objectives, the PLA reforms are shaped and driven by: (1) a set of overarching strategic guidelines; (2) important political motivations; (3) operational and capabilities-based aspirations; and (4) the fundamental changes in organisational structure. The following sections take up these important drivers, all of which intend to transform the PLA into a more effective military force.

Strategic guidelines

While the PLA is in the midst of an organisational transformation, its underlying military strategy has remained relatively constant. This consistency in overall strategy can change in the future, but in reviewing authoritative statements and assessments of PLA strategy, several key points stand out.

To begin, China’s national strategy remains primarily strategically defensive in nature, prioritising deterrence and defence of the homeland and China’s near seas over global expansion of its military capabilities. As such, ‘active defence’ is still considered one of the PLA’s most basic and longstanding strategic guidelines. In a nutshell, China’s national strategy is to ‘win without fighting’, that is, to achieve its national objectives without going to war. However, it is critical to understand that the doctrine prepares and allows for offensive action at all levels of war if and when the situation demands.

A key operational aspect of this strategy is the importance it places on deterrence. As Dennis Blasko, has pointed out, ‘most foreign interest naturally focuses on developments in PLA warfighting and technological capabilities and does not explore with equal enthusiasm the deterrence effects of the same developments’. This is true, he writes, even though authoritative Chinese writings on mil-

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Military strategy place ‘military deterrence’ on a par with ‘warfighting’ and ‘military operations other than war’ (MOOTW, 非战争军事行动) as one of the three basic ways by which militaries use force.³

Political motivations: reaffirming PLA commitment to the Party

In addition to such strategic guidelines, the reforms are also driven by several more specific political aims. To begin, it is important to recall that the Chinese armed forces are a Party army, required to be loyal first and foremost to the CCP and to its defence.⁴

As such, the reforms have the important political aim of asserting stronger CCP control over the PLA. Prior to Xi Jinping’s appointment as CCP General Secretary in late 2012, corruption was widespread in the PLA, particularly in the Army, and the military leadership had become resistant to restructuring and reform. Corruption remains a problem in the PLA, but Xi Jinping, once in office, sought to combat it at the same time as consolidating his personal power within the military. Since coming to power in late 2012, Xi has purged more than 100 high-level military officers and the PLA has investigated 4,000 cases, resulting in disciplinary actions against 13,000 officers.⁵

Beyond these purges, Xi has consolidated power over the PLA by promoting a new generation of military leaders and installing his allies in key positions. The year 2017 was the critical period for these changes, with wide-scale replacements at the top of PLA organisations, including all four service heads, three of the five theater commanders (Southern, Northern, and Central), and leaders of nine of the Central Military Commission’s (CMC) 15 functional organs.⁶ Further, a remarkably high number—87 per cent—of PLA delegates to the 19th Party

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³ Dennis J. Blasko, ‘China’s Evolving Approach to Strategic Deterrence,’ in Joe McReynolds, ed., China’s Evolving Military Strategy (Washington, DC: Jamestown Foundation, 2017), 335–356. In recent years, the term MOOTW has been used less frequently than during the years when Hu Jintao was chairman of the Central Military Commission. The Chinese armed forces still prepare for and conduct MOOTW missions, but the more common, and restrictive, term ‘humanitarian assistance and disaster relief (HADR)’ (人道主义援助和灾难救援) was used in the 2019 PRC defence white paper.

⁴ According to the 1997 National Defense Law, the Chinese armed forces consist of the active and reserve units of the PLA, the People’s Armed Police (PAP), and the people’s militia.


⁶ Adam Ni, ‘The Death of Zhang Yang and China’s Military Purge.’
Congress in 2017 were first-timers, representing a new generation of PLA leadership.⁷

In addition to controlling personnel, Xi has centralised authority by reinforcing the importance of the ‘CMC Chairman Responsibility System’, under which he is imbued, supposedly, with absolute military decision-making power.⁸ Unlike Xi, his predecessors Hu Jintao and Jiang Zemin were more hands off when it came to military affairs, leaving their CMC vice chairs to run the PLA. Xi has downsized the CMC from eleven to eight members and then stacked the body with his allies, further consolidating his control of the military.

Beyond Xi’s anti-corruption and power consolidation measures, Xi has also overseen a renewed emphasis on ideological and political education in the military with focus on the absolute power of the CCP over the gun. Kicked off at the Gutian Conference (古田会议), the PLA’s political work conference, held in late 2014, this focus has continued unabated as a key part of Xi’s military reform and construction agenda. The effects of these ideological campaigns on military reform and modernisation remain somewhat unclear and beyond the scope of this paper. Suffice to note that the resources and time dedicated to ideological education are substantial.

Moreover, the reforms have the broad political intention of integrating military modernisation more tightly with overall national economic and technological advancement. For example, the establishment as part of the reforms of the People’s Liberation Army Strategic Support Force (PLASSF), the PLA’s information warfare force, includes the organisation’s mandate to take a key role in civil–military integration. In doing so, the PLASSF, working in collaboration with researchers and businesses in the civilian economy, aims to generate synergistic technological advancements for both the civilian and defence sectors, thereby contributing to comprehensive national strength.

**Operational motivations: addressing shortfalls**

A long-term, multi-decade, multi-generational, and complex process is needed to overcome a wide range of operational problems that the PLA itself recognise, and this drives the reforms. While the PLA is making progress addressing these shortcomings, in their totality such problems present some critical obstacles to the People’s Republic of China’s (PRC) quest to build the PLA into a ‘world-class

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military’ by mid-century. As such, any serious analysis must take these problems into account.

Evidence for such shortcomings is widespread. Official self-assessments of PLA capabilities emanating from Xi Jinping and his predecessor Hu Jintao are found in a large body of open-source materials, mostly written in Chinese and directed at the domestic Chinese audience. Often, these critiques are expressed in pithy formulas, consisting of a few characters, that identify problems such as insufficiently developed operational capabilities compared to those of advanced foreign militaries, shortcomings in battlefield leadership and the lack of modern combat experience.  

Moreover, these senior-level assessments are supplemented and supported by innumerable media reports describing military exercises and after-action sessions that follow field training of all types. In these internal after-action meetings, operational leaders enumerate specific shortcomings in personnel qualities, organisation, training, doctrine and tactics, equipment and logistics. Taken as a whole, the evidence found in these general and specific evaluations of current capabilities supports the overall conclusion that the PLA, by its own assessment, has not yet reached the level of an ‘advanced military’ relative to the capabilities of the United States, Russia and several countries allied with the United States.

For example, China’s 2019 PRC defence white paper on national defence cites significant improvements in overall PLA capabilities. But revealingly—and for the first time in a Chinese defence white paper—it also admits to PLA warfighting and technological shortcomings relative to advanced militaries.

Great progress has been made in the Revolution in Military Affairs (RMA) with Chinese characteristics. However, the People’s Liberation Army (PLA) has yet to complete the task of mechanization, and is in urgent need of improving its informationization. China’s military security is confronted by risks from technology surprise and growing technological generation gap. Greater efforts have to be invested in military modernization to meet national security demands. The PLA still lags far behind the world’s leading militaries.

This recognition is also evident in the formulations the CCP CMC, the PLA and other authoritative military sources use in internal writings to describe the problems the Chinese military needs to address. During Xi’s tenure as CMC
chairman, numerous formulations of PLA shortcomings have been referenced hundreds of times in the official Chinese media. The new assessments criticise PLA warfighting capabilities and operational leadership, and, significantly, reveal anxieties about the Party’s grip on the armed forces. The following are the most prominent of these formulations.

‘Two Incompatibles’ (两个不相适应)  
This assessment states the PLA’s ‘level of modernisation (1) does not meet the requirements of winning local war under informatised conditions and (2) its military capability does not meet the requirements of carrying out its historic missions at the new stage of the new century’.  

‘Peace disease’ (和平病), ‘peacetime habits’ (和平积习), and ‘peacetime practices [or problems]’ (和平积弊)  
Having last been in a war in the early 1980s, the PLA has very little to no wartime experience. These terms are shorthand to criticise unrealistic actions and shortcuts some personnel and units take during training because they think they will never have to go to war. As a result, unit operational readiness suffers when personnel are not mentally prepared to fight at all times.

‘Two Inabilities’ (两个能力不够)  
This term assesses (1) the PLA’s ability to fight a modern war is not sufficient and (2) the ability of officers at all levels to command in modern war is insufficient.

‘Two Big Gaps’ (两个差距很大)  
This phrase identifies big gaps between the PLA’s military modernisation level and (1) the requirements for national security and (2) the level of the world’s advanced militaries.

‘Three Whethers’ (三个能不能)  
This formulation asks (1) whether the PLA can constantly maintain the Party’s absolute leadership, (2) whether it can fight victoriously when needed by the


13 Ibid.
Party and the people, and (3) whether commanders at all levels are competent to lead forces and command in war.\textsuperscript{14}

‘Five Incapables [Cannots]’ (五个不会)
This formulation assesses that ‘some’ commanders cannot (1) judge the situation, (2) understand the intention of higher authorities, (3) make operational decisions, (4) deploy troops, and (5) deal with unexpected situations.\textsuperscript{15}

Overcoming these problems is an explicit goal of much PLA training undertaken in the post-reform period.

**Structural overhaul**
Several important structural changes to the PLA aim to achieve the political and operational objectives of the reforms while abiding by the overall strategic guidelines noted above. These changes were foreshadowed in November 2013, when the Third Plenum of 18th Party Central Committee announced the decision to ‘optimize the size and structure of the army’ and to improve the ‘joint operation command authority under the CMC and theater joint operation command system’.\textsuperscript{16} Two years later, on the last day of 2015, structural reforms to achieve these objectives began, starting with a range of ‘above the neck’ (脖子以上) national- and theatre-level reforms.

To begin, the PLA’s command structure was completely reorganised. The command structure is now flatter and has clearer lines of authority. The revamped command structure is defined by Chinese authorities as ‘CMC in overall command, theatre commands operations, service headquarters direct force development’ (军委管总, 战区主战, 军种主建). Post-reform, the CMC has asserted more direct command authority and oversight over the PLA. Theatre commanders lead peacetime and wartime operations and have authority over units from different services and branches, which are to intended to operate jointly. The services headquarters have assumed the ‘man, train and equip’ mission.

Second, the organisational structure of the PLA has been dramatically changed. Under the new structure, the four PLA General Departments were disbanded and their work was mostly subsumed within 15 new functional organs (15个职能...
These sections comprise seven departments or offices, three commissions and five affiliated bodies.\footnote{These are: General Office, Joint Staff Department, Political Work Department, Logistic Support Department, Equipment Development Department, Training and Administration Department, National Defense Mobilisation Department, Discipline Inspection Commission, Politics and Law Commission, Science and Technology Commission, Office for Strategic Planning, Office for Reform and Organisational Structure, Office for International Military Cooperation, Audit Office, and Agency for Offices Administration. For more details, see the Chinese Ministry of Defence website section on the CMC, \url{http://eng.mod.gov.cn/cmc/index.htm}. The 15 units are listed above in the same order as they appear on the website.}

In addition, the seven Army-centric Military Regions (大军区) were dismantled and replaced with five joint theatre commands (战区). The new joint theatre commands are: Eastern Theatre Command (headquartered in Nanjing); Western Theatre Command (Chengdu); Southern Theatre Command (Guangzhou); Northern Theatre Command (Shenyang); and Central Theatre Command (Beijing). The reorganisation established a new Army Headquarters (陆军总部); upgraded the former Second Artillery Force to a fully-fledged service arm with a new name, the PLA Rocket Force (火箭军 or PLARF); established the PLASSF (战略支援部队) for national-level cyber, space, electronic warfare, and other information-related operational support; and created the PLA Joint Logistics Support Force (联勤保障部队 or PLAJLSF). The restructuring also resulted in 300,000 personnel cuts, half of them officers.\footnote{“Solemn” retirement ceremony called for PLA officers,’ \textit{PLA Daily}, 14 June 2016, \url{http://english.chinamil.com.cn/news-channels/pla-daily-commentary/2016-06/14/content_7099482.htm}.}

These ‘above the neck’ reforms have centralised command, control and military modernisation authority within the CMC and to the CMC Chairman, Xi Jinping. They have established a flatter command structure by abolishing the four general departments which had become an overly powerful and Army-centric layer of authority between the CMC on the one hand and the military regions and services on the other. In dismantling the four general departments and reorganising the seven military regions into five joint theatre commands, these former bodies were stripped of power which in turn has devolved largely to the 15 functional organs under the CMC.

In April 2017, the PLA began its ‘below the neck’ reforms (脖子以下’ 改革) focused on transforming operational and tactical units from army to division, brigade, regiment and battalion levels. Nearly every unit in all services and forces has been affected by ‘below the neck’ reforms. This tranche of reforms was expected to be completed by 2020, but additional adjustments and reforms are expected over the following three decades.\footnote{‘China aims to complete military reform by 2020,’ \textit{PLA Daily}, 13 May 2016, \url{http://english.chinamil.com.cn/news-channels/2016-05/13/content_7052671.htm}.}
Towards greater jointness?

One of the most important long-term operational goals of the reforms is to improve the PLA’s joint capabilities across multiple warfighting domains. This has been a traditional challenge for the PLA. That said, the process is moving ahead, albeit slowly, and the PLA can point to areas of progress. The following pages will highlight some of the areas of progress as well as continuing problems across various domains and services.20

Land domain

The PLA Army (PLAA or Army) has the primary responsibility for military operations on land, particularly in the defence of China’s territory and sovereignty and to deter further steps towards Taiwan independence.21 After the latest reforms and personnel reductions, the Army remains the PLA’s largest service with less than half of the PLA’s total 2 million-person force.22

Organisational reforms are intended to enable the PLAA to improve its abilities to conduct combined arms and joint operations. In addition to increasing the PLAA’s abilities in the land domain, the reforms will increase its capacity to support the other services in maritime, air, and information/cyber operations. It is important to note that the Army continues to develop and experiment with tactics, techniques and procedures that advanced militaries have performed in combat for decades. These include battalion-level combined arms operations, airmobile operations, SOF operations, close air support and amphibious operations.

For more than four decades, PLAA infantry and tank battalion commanders were trained primarily to lead companies and platoons only of their own arms while regiments and brigades integrated multiple arms into combined arms operations. Battalion commanders conducted tasks according to plans developed by their higher regiment or brigade headquarters. Beginning around the turn of the century, the PLAA began to test how to fight using combined arms battalions. After a decade of experimentation, recent reforms codified many lessons

20 Space considerations limit a more in-depth examination here. For a more detailed and lengthy assessment, a full report entitled Assessing the Ambitious Reform Plans of the Chinese People’s Liberation Army: Progress, Problems, Prospects, is available from the authors upon request.

21 The PLA Navy Marine Corps augments operations in the land domain, specifically in defence of islands and reefs claimed by the PRC, and increasingly in expeditionary operations beyond China’s borders. The PLA Air Force Airborne Corps is capable of conducting land operations within China and potentially beyond the nation’s borders. Other branches of the PLA Navy, Air Force, Rocket Force, Strategic Support Force, and Joint Logistics Support Force will be tasked to support operations in the land domain.

22 ‘中国军队大步向前，外媒怎么看？’ [‘The Chinese Military Strides Forward, What do the Foreign Media Think?’], PLA Daily, 31 July 2017, http://www.81.cn/jwgz/2017-07/31/content_7697830_2.htm. For the PLAA to number less than a million, it likely means that those personnel who still wear Army uniforms in the PLA Strategic Support Force (PLASSF), Joint Logistics Support Force (JLSF), the five joint Theatre Command headquarters, and the Central Military Commission are not included on the Army’s roster.
learned from training and studying the actions of other militaries. New weapons and equipment provide commanders mobility and firepower capabilities previously unavailable as computers and advanced electronics increase command, control, communications, and intelligence and reconnaissance abilities. Nonetheless, PLAA battalion commanders and their new staffs are still learning to integrate long-range firepower, UAVs and air support into their operations. It is unclear if the PLA education system has yet caught up with the requirement to prepare sufficient numbers of battalion-level personnel for their duties under the new structure.

One of the most important Army reforms has been to designate combined arms battalions (合成营) as the ‘basic combat unit’ (基本作战单元) to conduct independent missions (独立遂行任务) within combined arms brigades. This development is the result of a decade of experimentation that demonstrated battalion commanders, political instructors and their deputies must be assigned a staff to assist them in the performance of their duties. As a result, reporting indicates that battalions are adding a chief of staff, battalion master sergeant, and four officers or non-commissioned officers (NCOs) to provide support across operations and reconnaissance, artillery/firepower, engineering, and information and communications.

Even with this limited number of staff personnel, units are having difficulty manning these positions with qualified officers and NCOs from company and platoon positions. Furthermore, like the master sergeants being assigned to assist battalion and company commanders, staff NCOs sometimes encounter problems

24 Traditionally battalions executed plans formed by regiment and brigade headquarters in the style of the Soviet military. Battalion commanders received orders from above but had no organic staff to assist them in commanding current operations or planning for the future. With the development of combined arms battalions, in which units and soldiers with up to 10 different specialties were to work as a team, it became apparent that battalion commanders were not educated or trained sufficiently to employ so many different types of units and required additional personnel to control all of the battalion’s subordinate units. See ‘合成营由“接受指令型”向 “独立作战型”转变’ ['Combined Arms Battalions Change from “Receiving Orders” to “Independent Operations” Type'], PLA Daily, 9 September 2016, http://www.81.cn/lj/2016-09/09/content_7249484.htm.
26 ‘合成营参谋纳入首长机关集训’ ['Battalion Staff Officers included in Command Staff Training'], PLA Daily, 3 June 2018, http://www.81.cn/jfjbmap/content/2018-06/03/content_207669.htm.
in their interactions with officers in the course of their duties. The PLA will likely require several more years to establish the education and training programs necessary to adequately prepare battalion staff officers and NCOs, as well as battalion and company master sergeants, to perform their new duties and be comfortable in dealing with their commanders.

As a result of the many changes that every PLAA brigade and battalion underwent, units have focused on establishing individual soldier and small unit proficiencies from squad to battalion level during the annual training cycles since 2017. While there have been some larger-scale combined arms and joint exercises in the past three years, the number of these larger, named exercises has decreased significantly from pre-reform levels. It is nearly certain that most units’ near-term combat readiness suffered during the years of reform. This was a risk the PLA senior leadership undoubtedly expected and was prepared to accept in order to achieve its mid- and long-term objectives of raising the PLA’s warfighting capabilities.

Sea domain

The PLA Navy (PLA-N or Navy) has the primary responsibility for military operations in the sea domain, including surface, sub-surface and air operations. According to China’s 2019 defence white paper, the PLA-N is speeding up the transition from near seas defence to far seas protection missions and is ‘improving its capabilities for strategic deterrence and counterattack, maritime maneuver operations, maritime joint operations, comprehensive defense and integrated support’. These missions also include a variety of non-traditional security functions such as anti-terrorism, emergency evacuation, disaster relief and humanitarian assistance tasks.

The Navy, whose units generally are more technologically advanced and have a larger proportion of NCOs than the Army, has been busy over the past decade integrating new ships and capabilities into the fleets. Given the number of new ships entering the force, much of the training on shore and at sea is intended to develop initial crew proficiency, refine operational procedures, and establish the ability for the new ships to operate with others in task force or strike group formations.


Nevertheless, at present, the bulk of the PLA-N’s force structure is organised, equipped and trained mostly for near seas defence and to deter further steps towards Taiwan independence, while simultaneously increasing the number of units capable of far seas protection or expeditionary missions. Ships capable of far seas protection also may be employed in, and strengthen, near seas defence. Over time, the balance between forces with these two missions will shift more heavily towards ‘blue water’ and expeditionary missions.

As new ships achieve operational readiness after commissioning, their crews receive combined arms training incorporating different types of ships operating as task forces. Many of the larger new ships also participate in real-world missions and training with foreign navies, both in waters close to China and beyond. New ships and missiles have resulted in anti-surface warfare capabilities similar to or better than many potential foes, but carrier-based air operations, integrated anti-submarine warfare and long-range air defence skills are still under development.

Each of the PLA-N’s three fleets annually conduct task force training that brings multiple types of ships together that may last up to several weeks, such as the Mobility (机动) series of force-on-force exercises. In January 2019, the Southern Theatre Command Navy dispatched a destroyer, frigate, amphibious transport dock, and supply ship for an exercise focused on ‘anti-terrorism, anti-piracy and joint search and rescue missions under real combat scenarios.’ A few months later the Eastern Theatre Command Navy conducted a single-day ‘joint fire strike and sea assault’ exercise east of Taiwan involving a destroyer, frigate, fighters, bombers, and reconnaissance, early warning and electronic warfare aircraft.

At the same time, the PLA-N is working towards the objective of ‘joint operations at sea’ by increasing training with elements from the Army, PLA Air Force (PLAAF or Air Force) and Rocket Force. Army helicopters now practice operations over water, sometimes working in cooperation with PLA-N ships. PLA-N and PLAAF aircraft have begun training together and air defence elements from all services also conduct joint training. Perhaps most significantly, as early as 2014, prior to

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the current reform effort, Navy units have begun to command joint training. One of the first such PLA-N led joint training exercises was ‘Joint Action-2014A’ held in the South China Sea involving PLA-N, PLAAF and Second Artillery units.\(^{33}\)

Compared to other advanced navies, the PLA-N’s experience over the past decade in training and operations falls short in many significant ways. Similar to the other parts of the PLA, the PLA-N has undertaken training to overcome the problem of the ‘Five Incapables’ among its commanders and staffs.\(^{34}\) Ship crews now may perform their duties without direct supervision from higher headquarters in order to solve ‘deep-rooted problems, old, major, and difficult problems, and the problems behind problems’ and to update ‘outmoded procedures’ and ‘sort out manifestations of peacetime problems.’\(^{35}\) Though the PLA-N may be more technologically advanced than other PLA services such as the Army, it shares many of the same leadership challenges found across operational units of the Chinese military.

**Air domain**

The PLAAF is principally responsible for conducting air operations for the PLA.\(^{36}\) The PLAAF is the largest air force in the Asia-Pacific region and the third largest in the world, estimated to have over 2,500 aircraft, including 1,700 combat aircraft.\(^{37}\) However, despite the PLAAF’s large number of aircraft, more than half of the PLAAF’s fighters, fighter-bombers and bombers are considered legacy models.\(^{38}\) The PLAAF’s weaknesses are especially pronounced in the areas of strategic airlift and aerial refuelling.

Like the rest of the PLA, PLAAF is focused on reforming training practice by reducing and eliminating unrealistic training, formulating training systems, improving the use of technology in training and introducing realistic scenarios.\(^{39}\) Overall, the PLAAF has gradually increased the difficulty as well as realism of its exercis-

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36 The PLA Army and PLA Navy also have aviation units but are principally focused on their respective domains. For the purposes of this section on the air domain, the focus will be on the PLAAF.


es. Despite gradual improvement, the key weakness of the current PLAAF training program continues to be unrealistic training with exercises that are scripted to one degree or another. But recent trends indicate the PLAAF aims eventually to move to unscripted exercises. In addition, the PLAAF is increasingly seeking to engage with foreign air forces, including through participating in international military competitions, such as the Russian Aviadarts air-to-ground competition.

Moreover, the PLAAF’s combat patrols have an important training aspect in addition to their operational and deterrence utility. Since 2015, PLAAF has sent strategic bombers (the H-6K) on long-range over-water flights throughout the Asia–Pacific region on at least 40 occasions. These flights have gone beyond the first island chain, and in some cases have focused on Taiwan and Japan. These flights provide PLAAF personnel with important opportunities for realistic training, not to mention generating propaganda and deterrence value.

At the PLA leadership level, it is not yet clear whether the PLAAF is represented in a way that contributes fully to the concept of ‘jointness’. In recent years, the Theatre Commands have become increasingly more joint. One aspect of this is high-level personnel appointments. For instance, out of the five Theatre Command commanders, three are from the PLAA (Eastern, Western, and Northern Theatre Commands), one from the PLA-N (Southern Theatre Command), and one from the PLAAF (Central Theatre Command). However, ground force officers continue to dominate leadership positions of the 15 functional organs under the CMC. Only two PLAAF officers hold leadership positions in these organisations. That being said, with time we should expect to see an increasing degree of jointness and integration between the PLAAF and other parts of the PLA, especially the PLASSF and the PLA-N.

**Aerospace (missiles) domain**

The establishment of the PLA Rocket Force (PLARF) and the modernisation of China’s conventional and nuclear missile forces are important developments in China’s military modernisation and its evolving approach to joint warfighting and deterrence. Since its creation in late 2015, the PLARF has shown notable progress in improving training of its missile forces and upgrading land-based missile capabilities, both nuclear and conventional, giving China’s leaders and

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40 For a detailed study, see Derek Grossman, Nathan Beauchamp-Mustafaga, Logan Ma, Michael S. Chase, *China’s Long-Range Bomber Flights: Drivers and Implications* (Santa Monica, California: RAND, 2018), https://www.rand.org/pubs/research_reports/RP2567.html.
military planners a range of new conventional and strategic coercive options and increasing the credibility of China’s nuclear deterrent.41

At the conventional level, efforts have been underway to integrate PLARF missile bases (divisional size elements) with theatre commands under the new command structure to improve joint operations. Since late 2017, the PLA has run pilot programs on integrating the information and command systems of PLARF missile bases and theatre commands to facilitate joint theatre-level exercises. This includes the integration of missile bases into the ‘theatre joint operations command structure’ (战区联合作战指挥体系) and the ‘theatre joint operational command information system’ (战区联合作战指挥信息).42 PLARF missile bases have also apparently created ‘operational clusters’ (作战集群) to improve joint effects (联合效能) for joint exercises.

PLARF leadership, like many other parts of the PLA, has been pushing to introduce a more realistic and practical training regimen.43 In recent years, the PLARF has stepped up the pace of realistic combat training, with one source emphasising that ‘realistic combat training' (实战化训练) and ‘operational testing and exercises’ (作战检验演习) have been ‘normalised within the PLARF'.44 The PLARF’s training and exercises have focused on joint operations, brigade attacks, sustained offensive operations, long-distance and cross-regional mobility operations, and operations in complex terrain, weather and electromagnetic environments.45 Since 2016, the PLARF have formalised and regularised the 'Heaven Sword' (天剑) series, consisting of ten missile force combat training exercises annually, including joint operations training with other services. Interser-

42 ‘习主席视察过的部队：潜心砺剑，战略铁拳越练越硬’ [Troops inspected by Chairman Xi: Concentrate on sharpening swords, strategic iron fist gets harder], PLA Daily, 6 May 2018, http://www.mod.gov.cn/power/2018-02/06/content_4804300.htm.
44 ‘火箭军按照随时能战随时能打有效检验练兵备战’ [PLARF trains and prepares for combat according to the standard of all-times combat ready and effective destruction or damage], People’s Daily, 17 December 2017, http://military.cctv.com/2017/12/17/ARTI5aGsliegU8kSbZ5crH171217.shtml.
vice interoperability and coordination, and joint strike campaigns are highlighted as priority areas for this series.\textsuperscript{46}

In addition to developing more realistic training, the PLARF also faces a human talent and resources challenge. Missile force operations require high-quality human input in the form of experienced commanders, operators, technicians, scientists and other support staff. According to one PLARF officer, ‘the Rocket Force has vigorously implemented its talent development project and achieved fine results’, and that the ‘transformation of the Rocket Force’ is based on the increasing pool of talent and innovation. However, reports suggest that PLARF units still suffer from a shortage of high-quality personnel, including junior commanders, NCOs and technical staff to man its new equipment.\textsuperscript{47}

**Outer space and cyber domains**

Newly created at the end of 2015, the PLA Strategic Support Force (PLASSF), is among the most groundbreaking institutional changes in the current round of PLA reforms. As the PLA’s strategic information force with a mandate to support joint operations, and conduct military space, cyber, electronic and psychological warfare operations, the PLASSF will be crucial to warfighting, coercion and deterrence. The PLASSF is both the product and driver of China’s shifting military thinking, which emphasises the importance of technology and information systems and the integration of capabilities.\textsuperscript{48}

The PLASSF has two primary missions. First, it is to provide the PLA with integrated strategic information support through space- and network-based capabilities, including communications, navigation and positioning, intelligence, surveillance and reconnaissance, and the protection of military information infrastructure. Second, the PLASSF works to conduct integrated strategic information warfare operations in the space, cyber, electromagnetic and psychological warfare spheres.

As the PLA’s space corps, the PLASSF has consolidated nearly every aspect of China’s military space operations, including space launch, telemetry, tracking and control; satellite communications, space intelligence, surveillance, and reconnaissance; and space-related military research, development and support. It


also appears to have administrative responsibilities for China’s astronauts, who are now all PLASSF officers. On the cyber side, it is responsible for executing the PLA’s network mission, which includes and potentially integrates, a diverse range of operations, including signals intelligence, cyber espionage, computer attack, electromagnetic warfare and psychological operations.

As with other parts of the PLA, the PLASSF is struggling to come to grips with the massive organisational changes, the integration of new technologies, and leadership and other human resource challenges. The PLASSF is still very much a work in progress as it continues to reorganise and consolidate the numerous space and information units that it has inherited, while working to strengthen its institutional identity and introduce new leadership and managerial structures.49 Human talent development (人才建设) is prominently flagged in PLA-related sources as a major challenge for the PLASSF. This is entirely understandable given the knowledge- and technology-intensive skills needed for operating within the space and information domains. Additional institutional growing pains have resulted as diverse units from disparate parts of the PLA are working together for the first time.50

The PLASSF is also working on improving the quality and realism of its combat training. According to PLA sources, it is doing so by developing a ‘new training system’ (新型训练体系), which highlights certain high priority areas where, presumably, critical improvements are needed. These include command and control systems, technical skills and joint training.51 The PLASSF appears to be taking the training challenge seriously, claiming to have participated in 20 field exercises involving elements from other PLA services in the first year since its establishment.52

Implications for Australia

The PLA’s ambitious reform agenda thus far exhibits both steady progress and persistent problems. The reforms are designed to strengthen the Party’s leadership of China’s armed forces, improve command and control systems, and allow for improved joint operations, and steps are being made in this direction. Looking ahead, if the reforms are sustained, they are likely to help the force lev-

49 ‘组建一年多，战略支援部队这样备战打仗’ [‘One year since establishment, this is how the Strategic Support Force prepares for battle’], China Military Online, 5 June 2017, http://www.81.cn/jmywyl/2017-06/05/content_7627841_4.htm.

50 Author interviews with PLA and defence community scholars, Beijing, April 2018.


52 ‘组建一年多，战略支援部队这样备战打仗’ [One year since establishment, this is how the Strategic Support Force prepares for warfighting], China Military Online (n.49)
verage greater technological capabilities and create a pathway by which the PLA can develop more effective warfighting and deterrence tools, especially within the ‘near seas’ around China’s immediate periphery. By mid-century, according to Beijing’s officially stated timetable, the PLA aspires to become a ‘world-class military’, presumably meaning on a par with other great powers such as the United States.53

However, at the same time, the reforms so far have also exposed ongoing weaknesses for the PLA. As former US Army Attaché to China, Col (ret’d) Larry Wortzel, has concluded, ‘even after a long period of high-intensity training for the PLA, there does not seem to be much improvement in the ability of their commanders and soldiers to operate on the modern battlefield….While the PLA understands multi-domain warfare conceptually and has a robust doctrine for these forms of operations, it is stymied in attempts to apply such operations in practical scenarios.’54

Current capabilities and persistent challenges

Based on the reforms thus far, where do PLA capabilities stand? Nearest to home, within the first island chain, the PLA is capable of employing large formations from all services to conduct extensive, prolonged surface, sub-surface, air defence, and conventional ballistic and cruise missile operations against foreign forces. It can conduct amphibious and special forces operations on small or medium-size islands employing multiple Army and/or Marine brigades supported by organic and reinforcing artillery, aviation and other combat support. Widespread electronic warfare and cyber/information operations, including political warfare operations, will be integrated into any campaign.

53 The white paper, *China’s National Defense* in 2006, described a ‘three-step development strategy’ for military modernisation and set the ultimate goal of ‘mid-century’ to build ‘informationized’ armed forces ‘capable of winning informationized wars’ (the date is understood to be 2049, corresponding to the 100th anniversary of the founding of the People’s Republic of China). The white paper also included two vague intermediate goals (steps) for the years 2010 and 2020. The next white paper, *China’s National Defense* in 2008, retained the 2010 and 2020 steps but changed the final objective to reaching the ‘goal of modernization of national defense and [the] armed forces by the mid-21st century.’ Nearly a decade later, five years after he became the chairman of the CMC, Xi Jinping further revised the timeline by adding a new date, 2035, for completing the modernisation of national defence and the armed forces, and changed the mid-century goal to transforming the armed forces into a world-class force, with no further explanation. See Xi Jinping, *Secure a Decisive Victory in Building a Moderately Prosperous Society in All Respects and Strive for the Great Success of Socialism with Chinese Characteristics for a New Era*, report delivered at the 19th National Congress of the Communist Party of China, October 18, 2017. It is likely that further adjustments to these goals will be made in the coming three decades in reaction to potential changes to either China’s internal or external environments and as new technologies become available.

Beyond the first island chain to the second island chain, the PLA-N can deploy multiple surface ship task forces, supported by conventional and nuclear attack submarines, and protected by minimal at-sea aviation forces from aircraft carriers and using ship-based helicopters. If all large amphibious ships are used, the PLA-N could transport approximately a full brigade of Marines on an extended mission, but smaller deployments are more likely. Smaller numbers of the China Coast Guard and maritime militia can support these operations. The PLAAF and PLA-N can employ limited numbers of long-range bombers capable of anti-ship and land attack, supported by fighter, command and control, and refuelling aircraft. PLARF mobile ballistic and cruise missile units are capable of limited anti-ship and precision land target attacks. Beyond the second island chain, the PLA-N’s capabilities are more limited, capable of deploying occasional surface task forces and conducting operations by conventional and nuclear attack submarines.

At a global level, the PLA has significant cyber assets capable of global reach and a limited anti-satellite capability. Space-based capabilities are expanding with the Beidou positioning system reaching near-worldwide coverage. PLA ground operations at a global level have been mostly limited to battalion or smaller United Nations peacekeeping operations and participation in training or competitions with foreign militaries, with the major exception of a few larger-scale exercises with Russia. The PLA-N has proven capable of providing uninterrupted three-ship anti-piracy task forces off the east African coast for over a decade. Small numbers of ships and submarines occasionally conduct long-duration deployments beyond the Pacific and Indian Oceans. One permanent military base in Djibouti has been established primarily to support the anti-piracy task forces, but additional bases may be built as Chinese interests expand.

While these current capabilities demonstrate progress for the PLA, it is also true that large portions of all services retain the primary mission of continental and near seas defence. These units include border and coastal defence units, local air defence, and near seas naval patrol units, and probably account for around 70 per cent of the PLA’s combat force. Moreover, in spite of the current round of reforms, a significant percentage of weapons and equipment (from 30 to 50 per cent depending on type and service) continues to be based on old technologies.

Senior Chinese military leaders recognise that PLA modernisation is now more dependent on human (including leadership), doctrinal, and organisational factors than equipment and technological factors, which underscore the long-term nature of military modernisation. In terms of developing greater jointness across the military services, the PLA still lags behind advanced Western militaries, which took decades to develop such capabilities in combat. Authoritative PLA writings
make clear that much more work is needed, especially in more realistic joint training, improved leadership and greater communications integration across the services in theatre. The problems described in PLA internal evaluations—such as the ‘peace disease’, the ‘two incompatibles’, the ‘two inabilities’, and others—suggest the Chinese political and military leadership may lack confidence in the PLA’s current ability to achieve victory if they were to initiate combat against a strong adversary.

All of that said, the PLA recognises these and other limitations and is working to remedy them. China is steadily evolving from a continental to a hybrid continental-maritime power, increasingly capable of projecting power over, on and under water. China’s longer-term strategic requirements to project power beyond the first and second island chains will be a powerful driver of stepped-up maritime operations and capabilities.

PLA training will focus on preparing tactical and operational commanders and staffs (from battalion to theatre level) to plan, support and lead large-scale joint and combined operations. The PLA Rocket Force, PLA Strategic Support Force, and political, propaganda, and information warfare capabilities will continue to grow and be integrated with the other services to provide the Chinese leadership with kinetic and non-kinetic options out to greater distances than the majority of the Chinese conventional forces.

Key concerns for Australia

These findings underscore the need for Australian defence planners to carefully assess and respond to the PLA reform process over the coming decades, and particularly over the next 15 to 20 years. Given this relatively short timeframe, the ADF needs to seriously consider the following developments for its own defence planning and procurement cycles.

In spite of the near to medium term obstacles for PLA modernisation, it would be prudent to expect that the reforms can succeed with time, transforming the PLA to a far more capable force between 2035 and 2050. At a minimum, Australian defence planning should anticipate a much higher threat environment in contingencies involving the PLA. Given the importance of these developments for Australian security, greater investments will be needed to expand understanding of PLA strategy and evolving operational concepts, Party-military relations, internal politics and capabilities, especially in relation to more effective force projection within and beyond the first island chain.

For example, in the maritime realm at present, the PLA’s far seas and expeditionary capabilities beyond the first island chain do not meet the standards of a ‘world-class military.’ However, looking ahead, the ADF should expect a steady-
ily increased focus of Chinese military activity in the Southwest Pacific, Indian Ocean and eastern part of South China Sea.

In addition, the PLA’s likely advances in ‘new’ strategic realms—such as in space and cyber—demand the attention of Australian defence planners. Investments by the PLA in the advanced missilery, hypersonic, cyber, outer space, electromagnetic and information realms can contribute to developing greater jointness across the force. These capabilities can also pose greater offensive and deterrent challenges to Australian homeland interests and assets (and those of its allied partners) through the use or threat of long-range strikes, cyberattacks, counterspace operations, and strategic information disruptions (including PLA-led cyber intrusions and disruptions in peacetime). The PLA in 2035 will likely extend its anti-access/area denial envelope beyond the first island chain, enhance its long-range strike capabilities capable of reaching Australia, including hypersonic weapons, and advance its undersea and amphibious warfighting capacity.

Australian defence planners will need to collaborate with the United States and other close allies to develop both defensive and offensive systems to anticipate, identify, disrupt, deter and shield against Chinese conventional missile, cyber, counterspace, and disinformation threats and attacks. It will be particularly important to keep close track of the PLA’s missile, space and cyber warfare capabilities—most prominently housed within the PLARF and PLASSF—not only to evaluate the PLA’s progress in joint operations but also to identify vulnerabilities and ascertain possible targets for monitoring, pre-emption, deterrence and disruption.

Overall, current PLA training is focusing on developing functional proficiencies in newly reorganised units, while decreasing the number of large-scale combined arms and joint exercises compared to pre-reform years. The number of PLA large-scale combined arms and joint exercises is expected to increase after large units have established proficiency in their subordinate small units. Looking ahead, it will be important to follow the available after-action assessments by the PLA as to joint command successes and shortcomings as the Chinese military expands the size, tempo and realism of its training regimens.

Increasing scrutiny of and preparing for defence against PLA military capabilities will also carry political risks. In response to certain Australian security-related decisions—such as agreeing to a rotational US Marine presence in the Northern Territory or disputing Beijing’s claims in the South China Sea—statements from the PRC have strongly criticised Australia and issued veiled threats against Aus-
China has also reacted coolly to Australian steps which could strengthen security and defence ties with others in the Indo-Pacific region. For example, China’s strong opposition to the first attempt in 2007 to establish the Quadrilateral Security Dialogue (the ‘Quad’) among Australia, India, Japan and the United States was a factor leading Australia to withdraw from the consultative mechanism in 2008. China has likewise criticised the newly established iterations of the Quad\textsuperscript{56}, though in this instance the Australian government has remained a supportive participant, including at the group’s first ministerial-level dialogue in September 2019.

China will always be wary of Australian steps to advance its military readiness and capabilities whether they are unilateral measures or done in concert with Australia’s US ally and/or other partners. Beijing has a number of diplomatic and economic levers it can push to express its unhappiness with such steps, they have in the past and should be expected to do so in the future. Australian leaders and defence planners must continue to mitigate those potential near-term threats while preparing for the longer-term challenges the PLA’s modernisation drive presents to Australian security interests.
