

An Appraisal of The PLA's Training for Integrated Joint Operations:

**India's Actions, Response and
Counter-Strategy**

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Contents

Introduction		1
Chapter – 1	Evolution of PLA IJO, IJO Training and Training Architecture	7
Chapter – 2	Upgrading PLA Human Resources for Prosecuting IJO	14
Chapter – 3	Conduct of Joint Training	18
Chapter – 4	Shortcomings in PLA Training and Steps Taken to Address Vital Training Issues	38
Chapter – 5	Implications for India, India's Actions, Response and Counter-Strategy	46
Conclusion		63
<i>Endnotes</i>		67

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We will develop new combat forces and support forces, conduct military training under combat conditions, strengthen the application of military strength, speed up development of intelligent military, and improve combat capabilities for joint operations based on the network information system and the ability to fight under multi-dimensional conditions.

— Xi Jinping in his 90th Anniversary of PLA speech¹ repeated in his speech delivered at the 19th National Congress of the Communist Party of China October 18, 2017²

Introduction

Pursuant to Deng Xiaoping's "Four modernisations"³, Jiang Zemin's "Three Represents"⁴, Hu Jintao's doctrine of "scientific outlook of development"⁵, and Xi's "Four Comprehensives,"⁶ the Chinese Communist Party (CCP) has embarked on building a strong and powerful military. In order to realise the Chinese Dream as a form of National Rejuvenation, and arguably in its expansionist agenda as well as hegemonic intent in Indo-Pacific, the CCP is transforming the PLA to prepare and win a Local War under Informationised⁷ Condition (LWUIC). China has been pursuing its Great Power ambition in the garb of the official Chinese pronouncement that the restructured People's Liberation Army (PLA) will better safeguard national

sovereignty, security and interests while upholding regional stability and world peace.⁸

Military Transformation with Chinese Characteristics

The PLA strives to be capable of fighting and winning “informationised local wars” – regional conflicts defined by real-time, data-networked command and control, and precision strike. Reforms seek to streamline command and control structures and improve jointness at all levels.⁹ The main features of China’s military transformation include: innovation in military theory; realignment of the organizational structure; optimization of military formation; building a joint operational system; promoting military training; upgrading weaponry and equipment, and stepping up the training of personnel.¹⁰ Most of these concepts and methods have been learned and borrowed from Western militaries (mainly US). However PLA is making concerted and focussed efforts towards achieving the reform objectives they have set for themselves and at the same time striving to retain the Chinese characteristics of war-fighting.

Defining the Theme

The thoughts and high-pitch pronouncements of Chinese Premier Xi Jinping in numerous forums and events explicitly point towards his predilection for an assertive China. China’s expansionist agenda is on display in its increased activities in the Indo-Pacific, and enhanced conduct of military exercises and multilateral exercises. The massive weapon and military hardware acquisition programme and methodical upgradation of existing weapon systems and equipment of the three major forces and newly formed Rocket Force (PLARF) and strategic support force (SSF) is a cause of concern. Revolutionary restructuring and reorganisation of the PLA which is underway and the futuristic informationisation drive, demonstrate PLA’s resolve. The seven military regions (MR) have been restructured into five Theatre commands (TC). 13 Group

Armies have been carved out from the previously existing 18. Six departments, three commissions and six offices have been created by dismantling the four general departments of Central Military Commission (CMC). The PLA strength has been down-sized to 2 million personnel.¹¹ Certain key appointments in CMC and PLA have been revamped (Lt Gen Yi Xiaoguang of PLAAF as commander of the Central TC, Vice Admiral Yuan Yubai, as commander South TC becoming the first officer from PLAN to become a theatre commander). The Military academies have also been undergoing major reforms. These drastic actions reveal one unmistakable theme—PLA needs to appreciably augment its potential and efficiency and is adopting revolutionary measures to ensure highest level of preparedness for effective prosecution of Integrated Joint operations (IJO) for winning LWUIC.

A corollary theme can be that, in order to achieve the strategic objectives of “building an Informationised force and winning an informationised war”¹², “PLA has evolved a robust, creative, modernised and realistic system to achieve this aim in a telescopic timeframe.” Training is one of the vital components of the system in preparing PLA to undertake IJO and is apparently being given due attention by Chinese Communist Party (CCP) and PLA in the current scheme of things in China.

Training of PLA; Xi's Predominant Current Obsession

The PLA has stepped up its training efforts since President Xi Jinping became Communist Party general secretary and chairman of its Central Military Commission (CMC) in late 2012, in line with the plan of CPC to turn China into a modern fighting force capable of conducting long-range power-projection operations.¹³ Though major integrated exercises covering long distance mobilisation under informatised conditions with designated blue force as well as

large scale amphibious exercises had commenced in year 2009 (with Ex Stride), Xi has been apparently using better media management and public relation activities to showcase these events. The recurrent training themes come to the fore while sampling recent headlines in Chinese and other media, e.g., “Xi underlines innovation in military upgrading” (Xinhua, 3 Dec 2017),¹⁴ “Xi issues instructions at 2018 PLA training launch” (Global Times, 3 Jan 2018),¹⁵ “Military hones its skills in exercise” (China Daily, 8 Jan 2018),¹⁶ “China air force stages real combat training” (Xinhua, 11 Jan 2018),¹⁷ “PLA training hard for potential conflict” (Global Times, 11 Jan 2018),¹⁸ “Tech, training key to upgrading China’s military forces” (Global Times, 04 Feb 2018),¹⁹ “Chinese military, PLA, holds ground combat drills in Tibet to test their skills” (Financial Express PTI | Beijing | 20 July 2018),²⁰ “China Trains for Taiwan Invasion in Military Drills that could cover Entire Island” (Newsweek, 18 Jul 2018),²¹ “Military training: First class of college” (China Daily 05 Sep 2018),²² “PLA takes part as massive military drill begins” (China Daily 12 Sep 2018),²³ “Joint military drills broad-based” (China Daily 13 Sep 2018),²⁴ “Xi inspects military, stresses training, war preparedness” (Xinhua 30 Sep 2018).²⁵

As brought out in these and other newspaper reports, a massive drive known as “start training mobilisation” has been initiated by CMC in Jan 2018, which was inaugurated by Xi, in a ceremony held at PLA Central Theatre Command. More than 7000 PLA troops, 300 armed vehicles attended the ceremony and more than four thousand parallel sessions were held among the PLA Ground Force, Navy, Air Force, Rocket Force, Strategic Support Force and the Armed Police, across the country. Xi himself, who is also the Chairman of the CMC, issued military training instructions. PLA personnel across the nation began joint training on the land, water and in the air. Details of various training activities along with pictorials

depicting synergistic employment of all arms and services across a vast space were compiled and given wide publicity. Time and again, Xi, in his addresses during various training activities, has been laying stress and exhorting PLA to strengthen the military training and war preparedness of the armed forces and improve its capability to win wars. These reports emphasised the theme of PLA's enhanced preparation level for IJO, high-tech warfare under Informationised condition and brought out that technological innovation and training are the most important factors for transforming China's forces "into a world-class military". Of late, the PLA has also been laying significant emphasis on enhancing its participation in multilateral exercises with willingness to learn from leading Nations as well as to forge alliances and partnership to further hone its war-fighting potential.²⁶

Though these newspaper reports are for public consumption with a certain hidden agenda, still, details of certain landmark training events and certain aspects of current trends in conduct of training undertaken by PLA do emerge. Quite obvious however, from these reports is that the CCP and PLA leadership is smitten by the training, and IJO training has become a PLA obsession.

The Scope of the Study

With this backdrop, this study of PLA training imperatives for enabling it to conduct IJO would cover the evolution (Chapter-1), the reform in PME to include the methodology being followed for upgrading the quality of human potential (Chapter-2), as well as conduct of joint exercises including multilateral exercises (Chapter-3). An appraisal of PLA training activities directly having impact on India has also been made in this chapter. An attempt has been made to analyse the deficiencies and shortcomings and steps taken by PLA to address the same (Chapter-4). In Chapter 5 (Implications for India, India's

Actions, Response and Counter-Strategy), India's responses and actions in light of her current declared joint operations doctrine (Joint Doctrine Indian Armed Forces published in Apr 2017) and joint training doctrine (Joint Training Doctrine published in Nov 2017) have been enumerated. India's current progress on restructuring and reorganisation of the armed forces to include certain recommendations regarding approach to reform the joint training efforts have been made, as well as India's conduct of multilateral exercises have been highlighted in this Chapter.

Chapter – 1

Evolution of PLA IJO, IJO Training and Training Architecture

Though, the history of Chinese military is replete with numerous battles, campaigns and wars, the concept of Joint operation found little mention or was hardly practised until recently. In Sun Tzu's *Art of War*, there are mentions of phrases like "Unity within the army" (The third of the five factors for finding victory in conflicts, as given in the third chapter named "Attack by Stratagem") and "Information is Paramount" (In Chapter 13 named "Use of Spies"); these are relevant only if Jointness is regarded as a way of thinking rather than platforms that are working together. It can be safely assumed that, thoughts on Joint operation, as is understood in the context of present day battlefield milieu, took its root in the Deng era.

Germination of Joint Operations Concept

Deng Xiaoping and successive Chinese Premiers (Jiang Zemin, Hu Jintao and Xi Jinping) had realised, continually emphasised and reiterated through their thoughts, actions and policy directions that, the most predominant prerequisite for a modernised, high-tech and informationised army to succeed in war, in this era of revolution in military affairs (RMA), is the ability of the armed forces to conduct integrated joint operations ensuring synergistic application of all elements of combat power in the most optimal manner in the quickest timeframe. "Since the mid-1990s, the People's Republic of

China has invested enormous resources in developing the People's Liberation Army (PLA) into a modern force that can secure various national interests both at home, and now increasingly abroad. The stunning U.S. victory in Operation Desert Storm (Iraq) in 1991; U.S. involvement in the 1995–1996 Taiwan Strait Crisis; and U.S. military intervention in Kosovo in 1999, during which the United States accidentally bombed the Chinese Embassy in Belgrade, motivated Chinese leaders to invest considerable resources in the transformation of the PLA into a more modern, professional, and operationally capable fighting force. These conflicts bluntly demonstrated to the People's Republic of China that it lacked a military that could effectively fight and win wars against modern opponents, especially adversaries who could effectively harness the information revolution and successfully conduct joint operations.”²⁷

Evolving Joint Operation Systems

In December 1998, the CMC initiated a series of military reforms to transform the PLA into a modern and professional joint operations forces which were subsequently outlined in the January 1999 “PLA Joint Combat Program.” Development of joint operation capability in the operational system was further emphasised in subsequent Defence White Papers released by PRC biannually. The focussed intent of enhancing its capability for joint operations in all components of its operational system has been clearly enunciated in the Defence White Paper-2010.²⁸ Most sources seem to agree that the operational system comprises five main component systems: the command system, the firepower strike system, the information confrontation system, the reconnaissance intelligence system, and the support system. While this template is highly flexible and is ultimately based on the perceived needs and requirements of the anticipated campaign or supporting operations to be prosecuted, these five component systems will likely exist

within an operational system to some degree.²⁹ Enhancing the joint war-fighting potential in each of these components and achieving synergy and integration between these components of the system has since been the focus of PLA.

Initially PLA efforts were focussed on achieving proficiency in combined arms operations specifically pertaining to land operations. The next step in the evolution ladder was to bringing synergy in employment of Army, Airforce, Navy, Rocket force or 2nd Artillery (now PLARF), joint employment of Command and Control (C2), intelligence, surveillance and reconnaissance resources as well as use of modern technology in the field of cyber, information, and space (Presently combined to form an independent service known as Strategic Support Force). From the level of joint employment, PLA is now in the process of leaping forward towards the next level i.e. integrated joint operations.

Concerted efforts are constantly being made towards doctrinal evolution, and evolution of new operational concepts (Three Attacks Three Defence³⁰, Joint anti-air-raid campaign, Non-contact warfare, Target-centric warfare, System-of-systems operations³¹, Informationisation etc.).³² Comprehensive organisational restructuring has been carried out to ensure tri-service integration, streamlining of Joint Operational Command structures at each level (CMC, Theatre, Corps, Brigade and Battalion), for integrating C4ISR support, reducing the dominance of the ground forces, and promoting joint training and logistics.³³

In the early conceptual development stages, these types of operations are driven by “the guiding ideology of ‘comprehensive supremacy, precision strike, and destruction of systems.’³⁴ Establishment of RRF (Rapid Reaction Force) (Resolving Emergency Mobile Combat Forces) for “quick resolution” by conducting long-distance, high-power, and precision

attacks enhanced PLA capability of adaptation to warfare scenarios and developing quick responses to varying battlefield contingencies.³⁵ The on-going Brigadisation of PLA land forces (even brigadisation of PLAAF has also been planned) would further accentuate PLA capability to undertake trans-regional movement and employment of forces to include Special Forces in the intended area of operation in a viable time-frame. PLA 15 Airborne Corps has been restructured to have six airborne parachute brigades, one each of Special Operations, Aviation and Airborne support brigade (total nine brigades), replacing the earlier composition of three divisions. The PLA Marine Corps has also been raised and has a composition of six marine brigades, one special operation brigade, one marine aviation brigade and one marine support brigade. In addition PLA has two air assault brigades (121 AAB in 75 GA of Southern TC and 161 AAB which is part of 83 GA in Central TC) and one special operations brigade in each GA.

Accelerated purchases of advanced Russian weapons and platforms were also undertaken with the utmost urgency. At the same time maximum effort was laid on building domestic capability in defence production through reverse engineering weapon systems from components and systems acquired from foreign entities, concluding co-production agreements with countries possessing niche technology as well as enhancement of indigenous military technology, research and innovation. So much so that China has established itself as a world leader in arms manufacture by doubling its arms exports in the past five years as reported by SIPRI. China's arms imports reduced by almost 25% during 2011-15 and its arms exports jumped by almost 88% in the same period.³⁶

Evolving Dynamic System of Joint Training

It was realised that, the key to successful transformation of PLA is, putting in place a robust and dynamic system of

joint training methodology. At the top level leadership of PLA, numerous vision statements and policy directions were issued for development of a coherent theory, evolution of authentic and viable war fighting as well as matching training doctrine, conceptualisation of training ideas, transformation of Professional Military Education (PME), innovative and realistic conduct of field training and joint training exercises as well as putting in place a robust unit training routine, and conduct of “Three real trainings”³⁷ which refers to deploying real troops, conducting real operations, and using live ammunition in training. Implementation plans for training reforms and putting in place an effective system to impart PME and carry out all forms of training at all levels are being constantly formulated.

At the all-army conference on military training on June 27, 2006, Hu Jintao declared that China should more conscientiously and actively push forward the transition from machine-based military training to that based on information, given the combined development of mechanization and technological advancement.³⁸ While attending the meeting of PLA delegates during the second session of the eleventh National Congress of the Communist Party of China on March 11, 2009, Hu Jintao reiterated that the whole army must stick to the military modernization drive guided by the preparations for military struggles.³⁹ The focus should be placed on reinforcing the core military capacities while building non-war military operation capacities. In the Defence White Papers issued in 2008 as well as 2010, there has been extensive emphasis on training requirements, methodology and reforms required to be carried out in the training to prepare PLA for IJO. Accordingly, the PLA established joint training as the main thread to guide all levels of training for various arms and services, carried out Theatre joint training and organised group training for different operational directions.

Five steps Joint Operational Training System and OMTE

Setting a course for joint training, a “Five steps”⁴⁰ joint operational training system was devised. The Five steps are: scientific posts and positioning, establishing quality standards, optimizing training modes, strict examination and evaluation, and improving training files. In step with these guidelines and as per instructions outlined in a series of Outline for Military Training and Evaluation (OMTE) issued periodically (the latest OMTE was issued in Jan 2018), domains of bilateral and multilateral joint military exercises and strategic and operational war-gaming systems were developed where networked training, simulation training, and other advanced training methods are being employed.

Current Training Architecture of PLA

The erstwhile GSD was responsible for all training related matters pertaining to PLA. Post reform, a Training Administration Department has been established and it functions directly under CMC in order to provide greater leadership over the details of joint training from the highest level. The Central Military Commission (CMC) and the Training Administration Department are responsible for directing strategic-level exercises to ensure standardization and uniformity in the conduct of joint training. The Theatre Commands are responsible for organizing campaign exercises at advanced combined arms tactical training bases (CATTB). The Training Administration Department, TCs and service headquarters, would be entrusted to develop uniform joint training requirements based on operational missions, publish uniform joint regulations and provide greater high-level direction and coordination in general, experimentation, evaluation and assessment reforms and to cater for increased funding as well as improved joint training areas.⁴¹

The PLA's joint training consists of individual and unit training, and is divided into the following areas: basic, tactical, campaign, strategic and specialized. Individual joint training or professional military education (PME) is conducted primarily in military educational institutes for commanders and staff personnel, and non-commissioned officers, specialized and technical personnel as well as high level reserve officers.⁴² PME has been covered in Chapter 2. Individual basic training and basic field training can also occur at the unit. Unit training focuses on specific joint operations and support tasks, and includes the formation of temporary force groupings. Joint tactical training is carried out to provide tactical commanders and staffs with joint combat principles and methods. China also conducts joint exercises and multinational joint exercises primarily focused on problem areas of joint command structure, coordinating and organizing campaign and strategic level training.⁴³ These aspects have been covered in Chapter 3.

Chapter – 2

Reforms in Professional Military Education (PME):

Upgrading PLA Human Resources for Prosecuting IJO

In various party forums, meetings and PLA discourses on reform measures, continued training and education reforms have been identified as the key factors for meeting the challenge of finding and employing qualified personnel at right places so as to enable them to operate in the condition of high-tech warfare and informationisation. In 1999, the then Chairman Jiang Zemin, while addressing CMC stressed on development of high-quality talented military people and reiterated it in 2001, “though we’re unable to develop all high-technology weapons and equipment within a short period of time, we must train qualified personnel first, for we would rather let our qualified personnel wait for equipment than the other way round.”⁴⁴ The PLA has stressed that it needs personnel that are well trained and educated in joint operations and the use of new technology if they are to operate using tactics and doctrines that have not yet been battle tested.⁴⁵ For operating high-tech weapon systems and hardware, handle modern communication equipment ensuring interoperability in the complex environment of IJO, quality of PLA personnel requires a marked upgrade. There were major reforms being continually

undertaken in PME i.e. direct entry of technically qualified personnel, affording opportunities to officers to pursue higher education, improvement in training curricula, NCO training, reforms in conduct of training in Military academies etc.

Strategic Project for Talented People

In order to induct personnel with higher education and more technologically qualified personnel, the “Strategic Project for Talented People,” was initiated in August 2003 having a realistic timeline. In addition to requiring that all new officers have a bachelor’s degree, the PLA also encourages its officers to pursue continuing education, including obtaining Masters and Doctoral degrees from military and civilian universities in China, going abroad to attend foreign war colleges, and attaining various forms of non-degree education. Examples of non-degree education are short-term training programs in military topics, night classes at local civilian universities, specialized training classes provided by civilian universities, and self-directed study in reading rooms and computer laboratories maintained by military units.⁴⁶ The PLA has also been constantly making efforts to attract more college educated people into its ranks, not only as officers but also as NCOs and conscripts. There is an incremental trend in the number of college students entering the military.

The PLA is continuously pushing forward personnel development under conditions of informationisation, exploring strategic plans for personnel training with Chinese characteristics, such as facilitating macro-planning and top-level design, strengthening coordination, and utilizing human resources rationally. National Defence University, Academy of Military Science, and National University of Defence Technology and other Joint service academies entrusted with evolution of Joint doctrine and education of higher commanders, are also endeavoring to create more

meaningful and effective training methodology to equip the senior commanders with appropriate intellectual acumen for undertaking higher command functions in a complex scenario of IJO. Senior officers and even few mid-level officers are being regularly sent to foreign military academies to learn the theoretical aspects of modern warfare, doctrine development, methodologies to be adopted for organizational restructuring as well as latest mechanisms for conduct of training and joint exercises.

Restructuring of Military Academy System

As part of an ongoing military reform measures, the military academy system has been restructured. As a result, there are now 43 military education institutions, including two the National Defense University of PLA and the National University of Defense Technology directly under the CMC, 35 specialized in specific armed services, and six of armed police forces.⁴⁷ After the disbandment of the four general departments in the 2016 military reforms, all military academies and schools have been placed under the joint control of the CMC Training and Administration Department (CMCTAD), and the appropriate service branch.⁴⁸ As reported in Chinese media, Xi has called on the country's major military research and educational institutions to cultivate more talent for the armed forces, and to build world-class military research and educational institutions further stressing that the National Defense University of the PLA is a significant base to cultivate talent for joint operations as well as PLA officers, and should push forward innovation in its education, research and management to become a top comprehensive college on unified command. As for the National University of Defense Technology, it must follow the worldwide trends of the development of military science, and work harder to make key technological breakthroughs, in order to build a world-class institution of higher education.⁴⁹

Two Strategic Priorities: Development of Joint Operation Commanders and Technical Experts

The key solution to the problem of incompetence in commanding and winning informationised warfare is to give prominence to the two “strategic priorities,” namely, joint operation commanders and high-calibre specialized technical experts. The onus is thus on the PLA to establish and improve cultivation models for commanders at the strategic and operational level, improve the training system for joint operation commanders, reform the teaching programs and methods for joint operations, increase post-rotation and cross-training for commanding officers, and to consolidate emergency training for commanders of joint operations. Various measures are being taken to step up efforts to train commanding officers for joint operations, such as institutional education, on-the-job study and rotation of posts.⁵⁰

A second priority laid down is the cultivation of high-calibre specialized technical experts, specifically focusing on the cultivation of three kinds of talented individuals: leaders in science and technology who can design and lead important interdisciplinary projects; pioneers in various disciplines who can direct and advance academic and technological innovations; and specialized technical experts who can tackle complicated problems in the technical support of equipment. This would entail the overall development of specialized technical personnel and provide intellectual support for the informationisation drive.⁵¹

Chapter – 3

Conduct of Joint Training

Joint Training at Unit Level

Incorporating joint operations into the whole training process, the PLA carefully distinguishes between the training tasks of educational institutions of different levels and types, and couples institutional education with training in units, so as to establish a system for training joint operations commanding officers which emphasizes both institutional education and practice in units. In this regard, the PLA had launched the Key Projects of Military Educational Institutions and had made step-by-step progress in these projects.⁵² Reports regarding conduct of field exercises by PLA units are few and far between. In general, following several months of individual skill and small unit training, late summer/early fall is the peak season for unit evaluation training, often culminating in relatively large force-on-force exercises and live fire drills. Deployment drills, refinement of skills to operate and sustain the mix of old and new equipment that is actually found in operational formations, night training, and other minor tactics are practiced by the participating units.⁵³ Probably, only during participation in large exercises, units are exposed to training in complex electromagnetic environments, unfamiliar terrain, complex weather conditions and conditions of informationisation.

Conduct and Effectiveness of Joint Training Exercises

The most important indicator of combat readiness and the capability of a military force to execute IJO are: Successful conduct of joint exercises, overall performance of the participating forces, integration achieved, and ability of the commanders at all levels and troops to execute assigned tasks. In 2004, PLA General Staff Department designated Chengdu MR as one of the test centres for experimentation on IJO. Chengdu MR developed a series of documents that outline general guidelines that included an “Overall Plan of Experimental Integrated Training,” “Opinions on Strengthening the Building of Combat Capabilities of Units in the Military Region Under Informationised Conditions,” a “Development Program for the Comprehensive Integration of Emergency Mobile Combat Units,” and a plan for “Constructing a System of Integrated Training and Training Methods Based on Research and Exchange Activities of All-Army Integrated Training Experimentation.”⁵⁴

“Sharp Sword”, “Vanguard”, “Stride”, “Mission Action Series”, and Other Exercises

The overall experimentation and conceptualisation process as brought out in the preceding para, culminated in a series of “Sharp Sword” exercises and demonstration held in October 2005. Further experimentation was carried out with Exercise Sharpening Troops-2008 and Exercise Joint-2008. The concept of trans-regional mobility and improvement in capabilities in air-ground integrated operations, long distance manoeuvres, rapid assaults, special operations as well as strategic projection using PLAAF were clearly outlined in the 2006 Defence white paper and further reiterated in 2008 Defence white paper. These training themes with further emphasis on combined training of different combat components and joint training of all systems and all components were deliberated further

in 2010 Defence white paper. Jinan MR (location of PLA's strategic reserve force) became the focus of experimentation for trans-regional mobility exercises due to its location (devoid of any international land border) and extensive transportation networks within its boundaries.⁵⁵

Until 2009 most large-scale ground force training used to occur at Combined Arms Tactical Training Bases (CATTB) located in each MR. Brigades and Divisions within the MR used to travel to their respective CATTBs to carry out collective training.⁵⁶ However, exercises involving Cross-MR Mobility commenced with Exercise Stride-2009. The Vanguard series of exercises commenced in year 2008 to serve as the PLA's test-lab for fine-tuning their doctrine and tactical reforms. In 2008, Vanguard experimented with combat methods with the PLA's new battalion battle-group; it featured 2200 troops that centered on a battle-group augmented by mechanized infantry, artillery, engineering, communication, ECM and army-aviation elements from non-organic sources. The core of the battle-group was drawn by the 1st Tank Battalion of the 58thGA. The battle-group exercise was divided into four parts strategy-planning, mobilization, long-distance manoeuvres, and ended with a live fire joint operation against the "Blue Army" from the Beijing MR at Jinan MR's CATTB in Queshan. The exercise was also open to 179 foreign military students representing 67 countries from the National Defence University and the Nanjing Army Command College. Vanguard-2009 was much larger in scale and focused on joint "theatre of military operations" and included the entire 58th plus elements from 11 separate service arms placed under a single joint operation command.⁵⁷

Campaign level mission-action series of exercises commenced in the Year 2010 with the aim of developing rapid response and joint operations capabilities in unfamiliar environments and under complex conditions. Information technology based integrated command platforms were used

for the first time in “Mission Action-2013”. The Stride-2014 and Stride-2016 were conducted with improved force-on-force theme as well as bringing in more realism. PLA also conducts Communication Exercises (COMEX) and live-fire drills every year with focus on integration of available C⁴I²SR resources and synergistic application of the combat power. In 2013, the army and paramilitary police planned nearly 40 training exercises as reported by the China News Service. But in the past two years (2017-18), the PLA alone conducted at least 45 exercises a year, according to data compiled by the South China Morning Post, and it staged them in more complex and harsher conditions on land, at sea and in the air.

PLA Red-Blue Exercises

Many countries have so-called opposing forces (OPFOR) dedicated to playing enemy units in military training. In the West, the opposing force is usually called the red army, but that colour, highly symbolic for communist states, represents the PLA side in China. China’s 2013 Defence White Paper specifically identified “force-on-force training” as a goal for enhancing troop training and exercises. Though China had been conducting large-scale integrated exercises entailing long distance mobilisation under informationised condition, the blue force was always nominated from the host MR (erstwhile), e.g. 6 Armoured division in Beijing MR. However, China’s permanent blue force, the 195th Mechanised Infantry Brigade, was officially set up at Zhurihe⁵⁸ in 2014. In the Stride series of battle exercises, PLA troops from different regions were organised into red units to battle the blue units. The blue force had adopted a command system and tactics similar to those of NATO forces. Colonel Xia Minglong, its first commander, said its job was to “study the enemies and act like the enemies”. During the war games, soldiers have laser receivers scattered all over their bodies, which detect when they are “hit” by enemy fire. The Zhurihe base allows the army to practise on different

types of terrain and the exercises also include mock nuclear, chemical and biological warfare as well as urban combat. The tactics used by the red and blue armies can get creative. During a mock battle in 2014, some blue troops dressed up as local government officials came to offer the red unit cabbages and potatoes. After they were invited into the red force's command building, the blue soldiers "kidnapped" their enemy's commander. In the mock battles, both sides can use regular weapons such as tanks, armoured vehicles and artillery. They also have equipment for electronic warfare and air surveillance. To better imitate the US army, the blue force has been given upgraded weapons and artillery, including the advanced ZTZ-96A battle tank, the Type-07 self-propelled artillery and an early warning system.⁵⁹

Marked Enhancement of Joint Exercises in Xi Regime

Chinese military expert Li Jie said, the PLA had stepped up its military training under Xi's leadership. "China has not fought in any war for decades, while the US has trained its soldiers in many overseas war zones," he said. "Only through an increased amount of training set in conditions close to real war can the PLA gain effective combat readiness." Another Beijing-based military analyst, Zhou Chenming, said, China had begun stepping up its military training under Xi's predecessor, Hu Jintao, but was now more confident about letting the world see its combat capabilities. "The reasons outsiders only began to notice the increased frequency and improved quality of PLA training from 2013 were that the US demanded more transparency from the Chinese military and that President Xi Jinping is more confident about giving PLA exercises a higher profile, something that can help Beijing send messages to neighbouring countries and Taiwan," he said.⁶⁰ As brought out by Major General Rajiv Narayanan, defence analyst, eminent China watcher and distinguished fellow, United Services Institution of India, there is a strategic continuum since Deng

Xiaoping era, which exists⁶¹ and all PLA activities to include joint training activities need to be viewed in this light.

The PLA's improved training regime has also seen the navy and air force conduct exercises further from China's coast. The Chinese aircraft carrier Liaoning conducted exercises with J-15 fighters in China's Bohai region in January 2016, while Chinese warplanes flew through the Tsushima Strait, between Japan and Korea, for the first time, prompting Japanese and South Korean fighters to scramble in response. In Jan 2016, just days after a landslide election win by an independence-leaning opposition party in Taiwan, 31st Group Army based in China's south-eastern city of Xiamen, opposite Taiwan conducted a massive live-fire military and landing drill. Images of amphibious armoured vehicles ploughing through the sea towards a landing site, helicopters firing missiles at shore locations and soldiers parachuting down from helicopters were broadcasted on Chinese media.⁶²

Recent state media reports have also revealed how the PLA is now honing the combat abilities of all its forces year round in a variety of locations, enhancing their ability to cope with adverse weather, difficult terrain and battlefield confusion. "We saw more air-land-sea mobilisation training, involving strategic lift of massive numbers of troops and material across vast distances, at the theatre level, and also more inter-fleet training in the navy, as well as other instances of joint exercises involving multiple armed branches and services," said Collin Koh, a maritime security expert at Nanyang Technological University in Singapore.⁶³ PLA troops have also conducted live-fire drills at China's first overseas military base, which opened in Djibouti in August 2017. Close observers of the Chinese military say the PLA's improved and more frequent training in recent years has helped promote inter-services integration and made it more agile in responding to national defence needs.

Multilateral Exercises

PLA has also enhanced its combat readiness by training with forces from other countries, joining the biennial, US Navy-led RIMPAC exercises (In 2018 China was uninvited for the exercise due to its increased militarisation of South China Sea) around the Hawaiian Islands and holding joint drills with Russia, Kazakhstan, Pakistan, India and other countries in the last decade. After virtually never exercising with other militaries prior to 2003, China has since conducted an average of three or four exercises annually with other nations, and about half of these exercises have been conducted outside of China's borders and nearby waters.⁶⁴

In 2005, a major new development in bilateral security relations between China and Russia took place—the first Peace Mission exercise, which was held in China's Shandong Province and within the Shanghai Cooperation Organization (SCO) framework. The initial exercise, Peace Mission 2005, was the biggest Peace Mission exercise ever, involving more than 10,000 servicemen (including 1,800 Russians) and a combination of ground, air, and naval forces. Peace Mission exercises are generally held every two years within the SCO framework. Since 2012, Peace Mission exercises have been augmented by a maritime exercise called "Maritime Cooperation." Like Peace Mission, Maritime Cooperation is held on a rotational basis in Chinese or Russian waters in the Far East. In 2015 and 2017 the exercises were conducted in two phases, with Phase 1 taking place in the Atlantic. In 2017 the Chinese naval squadron came into the hotbed of the Russia-NATO military tensions, i.e. the Baltic—to hold a joint exercise with the Russian Navy. The two sides carry out training in joint air defence, anti-submarine warfare (ASW), landing operations, joint missile and artillery strikes, as well as submarine rescue. Since 2014 Russia and China have been participating in a growing number of competitions involving various services of

their armies and air forces. Since 2016 Russia and China have held yearly theatre missile defence exercises called Aerospace Security, in the form of computer simulation. The exercise involves establishing a joint air/missile defence area using long-range SAM systems such as the Chinese HQ-9 and the Russian S-300/400 series. Russia is also continuing to train Chinese military personnel—both the technical staff (who operate Russia-supplied equipment) and the commanding officers. In late 2016, Russian defence minister Sergei Shoigu said that the Russians had trained more than 3,600 Chinese officers in their military academies and training centres.⁶⁵

Last year (2017), China conducted at least 20 bilateral and multilateral exercises with other militaries, according to the US defence department (See Table 1). These included a number of firsts, including a naval drill in the Baltic Sea with Russia and the inclusion of Chinese navy aircraft in drills with Pakistan.⁶⁶

Table 1: Selected Bilateral and Multilateral Exercises of China in 2017⁶⁷

Exercise Name	Type of Exercise	Participants
Unnamed	Counterterrorism	Nepal
Unnamed	Maritime	Cambodia
International Army Games	Miscellaneous	Hosted by multiple countries (28 countries participated)
SHAHEEN VI JOINT SEA 2017	Air	Pakistan
FRIEND 2017	Maritime	Pakistan
Unnamed	Counterterrorism	Vietnam
Unnamed	Maritime	Vietnam

Exercise Name	Type of Exercise	Participants
FALCON STRIKE 2017	Air	Thailand
Joint Sea 2017(MARITIME COOPERATION 2017)	Maritime	Russia
COOPERATION 2017	Counterterrorism	Russia
AIRSPACE SECURITY 2017	Missile Defense	Russia
AMAN 2017	Maritime	Hosted by Pakistan(37 countries participated)
Unnamed	Disaster Relief	Malaysia
Unnamed	Border Security	Tajikistan
UNITED SHIELD 2017	Counterterrorism	Belarus
Unnamed	Maritime	Burma
Unnamed	Maritime	Iran
Unnamed	Counterterrorism	Kyrgyzstan
KHAAN QUEST 2017	Peacekeeping	Host-Mongolia(26 participants)
Unnamed	Maritime	Thailand, the Philippines, Cambodia, Myanmar, Laos, and Brunei
Unnamed	Maritime	Hosted by China (SCO countries participated)
Unnamed	Disaster Relief	United States

Exercise Name	Type of Exercise	Participants
IMMSAREX	Maritime	Hosted by Bangladesh(32 Countries Participated)
Unnamed	Peacekeeping	Organized by African Union-United Nations Mission in Darfur

There are certain other multi-lateral exercises not listed in the table, e.g.; “Joint Rescue-2017”, “Golden Cobra-2017” (The “Golden Cobra-2017” military exercise is an annual mechanism of multilateral joint military exercise hosted by the US and Thailand. It is also the largest multilateral joint military exercise in the Asia-Pacific region.), “Tianshan-3 (2017)” joint anti-terrorism exercise, “Peace-17” multinational maritime joint military exercise, China-Pakistan “Shaheen-VI” joint air training exercise, “Aerospace Security 2017” Chinese-Russian Joint Anti-Ballistic Missile (ABM) defence computer command post exercise (CPX), “Cooperation Spirit 2017” joint humanitarian assistance and disaster relief (HADR) table-top exercise.⁶⁸

Chinese and Thai air forces had carried out a series of joint exercises codenamed Exercise Falcon Strike starting with year 2015.⁶⁹ The recent one was conducted in Sep 2018. Also in the month of Sep 2018, China participated in Ex Kowari-2018, a trilateral survival training exercise involving Australia and US. PLAN also participated in Exercise Kakadu-2018, which is Australia’s largest maritime exercise in the Indo-Pacific. Vostok-2018 offered new strategic insights on the extent of the relationship between Russia and China. For the first time, the Vostok drills hosted People’s Liberation Army (PLA) troops at the Tsugol military range in the Zabaykalsky Krai.

China deployed some 3,200 troops and numerous pieces of equipment. Both armies conducted joint firing operations and further tested their interoperability.⁷⁰ Vostok 2018 was important not only in its bilateral context but also because it involved all the three Services of both countries. A joint statement released later stated that the PLA will build on the “experience of decision making, coordination and joint action” gained during the exercise and continue to “boost the troops’ overseas combat capabilities and readiness”.⁷¹

China has even begun to bring its Red-Blue exercises to the international stage. In September 2017, units of both the PLA Navy and the Russian Navy participated in joint exercises in the South China Sea.⁷² The exercises, which marked the fifth round since the two countries began the exercises in 2012, for the first time included Red-Blue confrontation exercises.⁷³

These large-scale exercises can, to a large extent, be seen as truly integrated and joint training activities of PLA. These exercises involved physical trans-regional move of large formations of all the arms and services. The moving columns were subjected to EM interference. A Blue force was nominated and pitted against the Red Force, though the outcome invariably used to be, ‘well fought blue, red the winner’. For 2016’s Stride exercise, the PLA Army’s training department issued “Evaluation Standards for Simulated Blue Force Drills” in an effort to further systematize and improve Red-Blue exercises. Joint Command and Control centres were established, aspects of interoperability were tested and exercises were conducted under conditions of informationisation characterised by system-of-system operations.

PLA Training Activities Having Direct Impact on Indian Armed Forces

The tectonic shift in PLA training activities and revolution in training affairs in conjunction with whirlwind military reform

measures recently adopted, demonstrates Beijing's resolve to hold centre stage in the global strategic playing field. It is natural to assume that, the first step in this grand Chinese design, is achieving hegemonic power in the Asian strategic landscape and Indo-Pacific Region. CCP presumes India to be a threat in being, in its hegemonic ambition in Asia and Indo-Pacific. In addition, Tibetan Autonomous Region (TAR) being a Chinese vulnerability, the Himalayan Borderland assumes added significance in Chinese scheme of things.

Analysis of trends of China's foray into Indian Ocean Region (IOR) in the garb of need for protection of Sea Lines of Communication (SLOC), its incessant effort to influence Nepal, Bhutan and the littoral Indian Ocean States (Indonesia, Malaysia, Maldives, Sri Lanka, Djibouti, Myanmar, Pakistan, Iran), PLA training activities as well as force mobilisation plan to include massive infrastructure development in Himalayan Border Region and study of China-Pakistan nexus to include their joint exercises would help Indian political leadership to frame a diplomatic strategy. It would also help the Indian armed forces in framing their policy on force level required, equipment, deployment and employment philosophy, short-term as well as long-term strategy for countering the PLA.

PLA's conduct of large-scale Joint exercises in TAR, China-Pakistan bilateral military exercises, PLA's maritime exercises in Indian Ocean Region (IOR), and India-China joint military exercises, have been discussed in succeeding paragraphs.

PLA Exercises in Tibetan Autonomous Region (TAR)

TAR has become a training ground for PLA's Western Theatre Command in the last decade. There were extensive training and exercises by combined arms formations conducted in TAR commencing in the year 2010. In the Nov 2011 exercises, airborne and armoured forces rehearsed capture of mountain passes in high altitude. In Mar 2012, an exercise

to validate integrated joint operations with the Air Force using live ammunition and laser-guided conventional bombs was carried out. As can be ascertained from reports in the PLA Daily, Xinhua news agency and the People's daily, PLA units in the Western Theatre Command (WTC) train for mountain and high altitude combat, particularly the 52nd and 53rd Mountain Infantry Brigades, and the 54th Mechanized Infantry Brigade located in the Qinghai Tibet Plateau, as well as a Mechanized Infantry Division garrisoned in Hotan. This training acclimatises troops to the high-altitude Mountain and meteorological conditions. The 76th and 77th Group Armies train in high altitude mountain terrain over 4000 meters, as do motor transport units in the region providing heavy equipment transport and logistics support. Army training includes joint operations with Air Force and Rocket Force units. The training of Air Force includes joint operations with Army units, long-range mobility, ground attack and air defence, emergency operations, and operating under complex meteorological conditions.⁷⁴

In Jul 2017, the Western Theatre Command also held an armoured brigade military drill in Tibet at 5,100 metres above sea level for the first time to "test combat readiness". The official Xinhua News Agency reported from Lhasa that the drill also included the PLA's most advanced battle tank, the Type 96B and was aimed at testing "full combat readiness". The report, dated July 3, showed pictures of the Type 96B tank in action for the first time. It did not mention the date of the drill but said it was a first-ever exercise at 5,100 metres for the armoured brigade and the 96-B and was aimed at "carrying out battlefield environment analysis, combat operations command, combat coordination and other real combat and live-fire shooting training" to test integration of military operations. The report said the drills were aimed at "paying close attention to officers command skills training, command and control

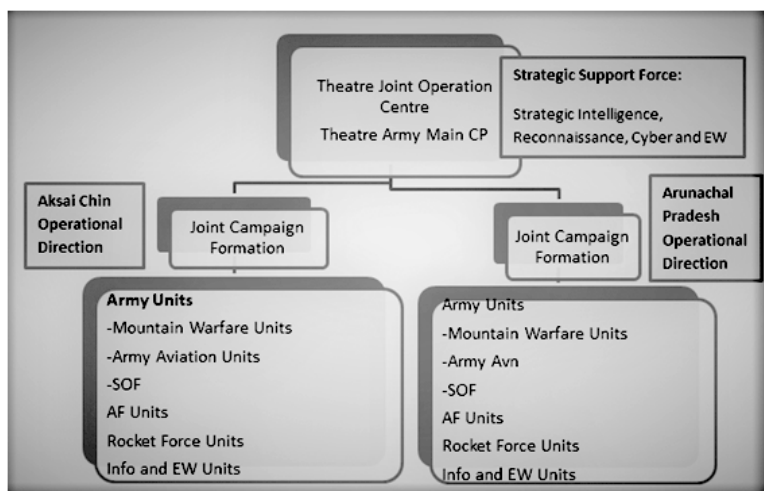
systems, combat unit synthesis and combat readiness” in the “complex high altitude environment of the Tibetan plateau”. The drill was also reported on Thursday by the Global Times in apparent signalling to India, in a report headlined “India urged to drop delusion of military strength”.⁷⁵

Recently, On 29 June 2018 , as per Chinese official media reports, Chinese military units stationed in Tibet carried out a drill testing armament support capabilities as well as military-civil integration in the Himalayan region bordering India. Going by numerous reports published in state-run media, the special forces of the Chinese military have conducted drills in Tibet, including ground training for helicopter pilots, to test their skills in the high altitude region, the training simulated a behind-enemy-line infiltration mission at an elevation of 4,000 metres, “Pilots and special forces rappelled down to the ground from helicopters and conducted the mission together.” Song Zhongping, a military expert and TV commentator, told the state-run Global Times that the latest military exercises prepared participants for a potential military confrontation with India.⁷⁶

Earlier in the year, the most advanced J-20 stealth fighter jets conducted air combat training with other fighter planes to include J-16, and practiced beyond-visual-range air combat, with other aircrafts including the J-10C, J-11B, the H-6K bomber and also exercised with the Y-20 transport aircraft in order to improve their capability in long-range military transport and air combat, in Plateau region.⁷⁷

A mountain campaign typically is conducted by an Army commanded formation either consisting of or supported by Air Force, Rocket Force, and other services. PLA has also established Joint Operations Command Centre (JOCC) in each theatre command. The JOCC of Western Theatre Command responsible for conduct of IJO has been operationalised since

Feb 2016 and is located at Chengdu. The JOCC would have a Joint operations planning centre, battlefield electronic warfare centre, situational awareness centre, data resource centre (DRC), navigation centre, national mobilisation centre and weapon and equipment support centre. A diagram drawn by Kevin McCauley in China Brief, Vol 17, Issue 12 is given below (Figure 1), which shows a notional border campaign operational system of systems composed of the theatre command and joint campaign formations.⁷⁸



**Figure 1: Notional Border Campaign Operational System:
Theatre Command and Operational Forces.**
Diagram redrawn. Original by Kevin McCauley.
Source: China Brief, Vol 17, Issue 12, 21 Sep 2017

The conduct of regular exercises in TAR seen in the backdrop of Doklam stand-off and PLA's enhanced build-up and infrastructure development in the region do raise serious concerns for India. Satellite images doing the rounds in the media show that the build-up of Chinese troops and advanced assets behind Doklam has only increased despite a rather harsh

winter in 2017-18. Analysis of satellite imagery from two PLA Air force (PLAAF) airbases in the Tibetan Autonomous Region near Doklam shows a significant presence of fighter aircraft, a notable increase in helicopter deployments compared to 2016, as well as the positioning of KJ-500 airborne early warning and command aircraft, components of the HQ-9 long-range surface-to-air missile system and even Soar Dragon UAVs, the last being at Shigatse. The entire route from Yadong in the Chumbi Valley to Doklam has seen hectic activity and creation of command posts and bunkers, besides other tunnelling activity. Reports also suggest successful up-gradation in PLAAF capability to take off and fly from airfields on the Tibetan plateau. The Chinese have actually made a number of major airfield upgrades at Shigatse itself, and a new runway was opened there in mid-December 2017. Furthermore, reports of Chinese winter manoeuvres clearly reveal that the untested PLA Ground Force (PLAGF) is being toughened to withstand alpine (and even arctic) combat conditions.⁷⁹ Exercise Polar Guarantee-2018 was carried out at an altitude of approx. 4000 mtrs in Tibet in August. The joint battle preparation of both combat arms as well as services including movement of combat and logistics echelons in high-altitude terrain, casualty evacuation by road and air were practiced during the exercise.

Aksai Chin Terrain Scale Model

PLA has prepared a 1:500 scale terrain model (900m x 700m model replicating an area of around 1,57,500 Km) of eastern Aksai Chin and adjacent Tibet, built near the town of Huangyangtan, about 35 kilometres South West of Yinchuan, the capital of the autonomous region of Ningxia in China which was first revealed in year 2006. A visual side-by-side comparison shows a very detailed duplication of Aksai Chin in the camp. A military unit with artillery firing range is also attached to this terrain model.⁸⁰ Probably China wants its troops to have perception management about the world's most

tough terrain before any hostility. Military commanders take help of sand models all across the world so as in India too. But the terrain model is just of few meters rendering battlefield perception. The only known reference of similar model before it is the Area 51 of United States' Air force test and training of experimental aircraft and weapon system in Nevada.

China-Pakistan Military Exercises: Looming Scenario of a Collusive Threat

Exercise YOUYI which meant "friendship" had been held in 2004 between PLA and Pakistan Armed forces. The exercise initially included joint search & rescue operations, patrolling and searching for suspected intruders. The YOUYI-IV exercise conducted in the Year 2011 was a Brigade level joint exercise between the two armed forces in which Special Forces from both sides participated. Senior Military leadership from both sides attended the Exercise. As claimed by Pakistani media, the YOUYI-IV was a true demonstration of a famous Chinese saying "Pakistan-China friendship is higher than the mountains and deeper than oceans." YOUYI-V was conducted in the year 2017. In 2016, Pakistan and China have showcased their all-weather friendship with the launch of one of the biggest joint military exercises in decades. According to the Inter-Services Public Relations, the war games that began on 11 April 2016 near Jhelum following speculation over whether China will step in to fill the economic, military and diplomatic void if Pakistan's relationship with the US further deteriorated. This exercise is the fourth in a series in which Special Forces from both sides participated. The two-week-long exercises aimed at "mutual exchange of experience and information through a comprehensive training programme in real time".⁸¹

Pakistan and China started a joint naval exercise in Karachi in 2003. It was for the first time that the Chinese Navy conducted joint maritime exercise with any foreign navy.⁸² PN-

PLAN Bilateral Exercises were instituted in 2014 when Pakistan and Chinese navies conducted an inaugural joint exercise in Pakistani waters of North Arabian Sea. The second exercise of the series was conducted in East China Sea in year 2015 whereas both third and fourth exercises were held in beginning and end of year 2016 in North Arabian Sea. In Dec 2017, the 5th exercise of the series was conducted in Chinese waters off Shanghai wherein Pak Navy Ship SAIF and frontline warships of PLA Navy along with air and subsurface assets participated to carry out joint drills and naval manoeuvres to develop interoperability between the two naval forces. Observers from both navies were also exchanged to learn and benefit from each other's professional experience. In addition, marine teams of both PN and PLAN also held joint training and tactical drills.⁸³

The air forces of China and Pakistan also have been holding Shaheen series of exercises since 2011. In Sep 2017, the PLAAF and PAF contingent, comprising combat pilots, air defence controllers and technical ground crew participated in "Shaheen-VI" conducted at Korla Air Base in China. During the exercise, the contingents from both sides demonstrated mutual trust by sitting in the same fighters. In the joint drills, air force personnel cooperated in planning and implementing strategies, as well as learning operational concepts and tactics from each other. JF-17 Thunder, Mirage, F-7PG and ZDK aircraft from PAF along with PLA Air Force J-8, J-11, JH-7 and KJ-200 AWACS aircraft and ground forces including surface-to-air missile and radar troops took part in the exercise.⁸⁴ The air forces of Pakistan and China launched seventh joint drills, Shaheen VII, at an operational airbase in Pakistan on 03 Dec 2018.⁸⁵

China has increasingly reached out to Pakistan, a nuclear power and India's primary rival. In addition to conduct of such joint military exercises, the strategic partnership has been further strengthened through the China-Pakistan Economic

Corridor and infrastructure development projects undertaken by China in Pakistan.

Joint Military Exercises in Indo-Pacific

China's participation in a number of joint military exercises is looming ever larger in its strategy as it expands its power and influence in the Indo-Pacific region. Its growing might is spurring other nations to initiate their own joint drills to counter Beijing. "China has created a situation among South China Sea and East China Sea rim nations wherein they are compelled to protect their territorial claims."⁸⁶ It is not surprising that, this year China has uninvited itself from the RIMPAC, the largest Naval exercise conducted every year by US. The PLA Navy is also becoming more active in IOR. Over the course of the next decade, the PLA Navy will likely seek a presence in the Indian Ocean and the Bay of Bengal that will involve combined operations with other countries in South Asia.⁸⁷

India-China Joint Exercises

The exercise 'Hand-in-Hand' between the armies of the two countries commenced in the year 2007, continued in 2008, and then again after a break of 4 years recommenced in 2013 and continued up to year 2016. Suspended in the year 2017 after Doklam stand-off, the military exercise is scheduled to recommence and planned to be held at Chengdu from 10-23 December 2018.⁸⁸ The aim of the hand-in-hand joint exercise conducted in Nov 2016 was "to acquaint both the Armies with each other's operating procedures in the backdrop of counter terrorism environment." The 13-day schedule was focused upon training on crossing of obstacles, special heli-borne operations, firing of various weapons, handling and neutralisation of improvised explosive devices and conduct of cordon & search operations in insurgency and terrorism environment. In the Year 2016 India and China also conducted 'Sino - Indian Joint Exercise'-I and II as part of the ongoing initiative to enhance

interaction and cooperation between India and China, under the provisions of the Border Defence Cooperation Agreement, 2013.⁸⁹

In a break-through development, the military exercise, Peace Mission 2018 was held in Russia in Aug 2018 with Army contingents from China, Pakistan, India along with Russia and other Shanghai Cooperation Organisation (SCO) member countries taking part in a joint counter-terrorism exercise as part of multi-national war games. The war games held under the umbrella of (SCO), featured soldiers from China, Russia and other SCO countries.⁹⁰ Apart from learning from each other, joint exercises with China would also give valuable insight about the human resource potential of PLA. With conduct of such multilateral exercises, both nations must take advantage of opportunities to reduce potential tension and engage in security and confidence building measures.⁹¹

Chapter – 4

Shortcomings in PLA Training and Steps Taken to Address Vital Training Issues

PLA Shortcomings Affecting IJO Training

From the reports in Chinese media and close observation of conduct of military exercises by military analysts and their writings, certain glaring shortcomings in conduct of training and preparation for IJO may be revealed. There is a resource crunch and shortages in terms of training infrastructure and facilities. Secondly, there is a shortage of technically qualified IT-savvy service personnel to man, manage and operate the large and disproportionate influx of high-tech weapon system, equipment and inventory, IT-enabled C4ISR systems, simulated training systems and modern training aids. Thirdly, there is lack of qualified instructors, joint teaching materials to impart training on these modernised systems. Fourthly, information literacy is poor and there are deficiencies in level of informationisation. Fifthly, there is a lack of uniformity in training methodology across the vast geographic spread of China and lastly, there are major deficiencies in training academies making it difficult for these institutions to cope up with rapidly changing dynamics of war-fighting. Sixthly, development of uniform joint training requirements based on operational missions is still evolving.

There is perceptible lethargy in overcoming a peace-time mind-set, since China has not been involved in any major

operations since 1979 post the war with Vietnam. There are problems in discipline due to “little emperor syndrome” of the soldiers hailing from one-child family and other societal influences. There are concerns over ability and competency level of senior leaders and insufficient understanding of modern operational art and inadequate problem solving ability. Directive style of command, which is considered to be a prerequisite for IJO, is yet to evolve in a proper manner. There is a dichotomy of party ideology vis-à-vis professional military thinking. Deep-rooted inter-service rivalry is another major impediment in the process of training reforms.⁹²

That there are serious shortcomings in conduct of joint operations can be gathered from PLA newspaper reports and reports giving out analysis of various joint exercises. Certain issues which have often been highlighted are; problems pertaining to interoperability and inter-communication, inability to work in EM environment, functional aspects of joint command centres, and problems in trans-regional movement, poor decision-making ability at all level and flaws in conduct of Red-Blue exercises. Such exercises are essential to prepare for future conflicts against a specific adversary, as also they afford valuable opportunities to evaluate a military’s capabilities vis-à-vis its adversary. Joint exercises are mostly stage-managed and very little attempt is being made to enhance the difficulty level and bring in realism.⁹³ In the analysis of Exercise Peace Mission-2010, the heavily scripted nature, noticeable lack of realism and lack of in-depth coordination among the multinational forces has been highlighted.⁹⁴ As China’s leaders pursue their ambitions for a more globally deployable strategic force, the PLA will need to develop the doctrine, institutional structures and procedures, infrastructure, and platforms to project, support, and sustain forces abroad—all of which appear relatively nascent today.⁹⁵

Steps Taken for PLA Revolution in Training Affairs

The revolutionary measures propounded by PLA to bring in complete overhaul of the system of military training and the spurt of training activities conducted by PLA mainly over past one and half decade can truly be termed as a Revolution in Training affairs, in the spirit of the Chinese penchant for using jargons. Arguably, China has been adopting a scientific approach in planning, implementation and execution of training activities in the spirit of “the two transformations”⁹⁶ announced in 1995 by Jiang Zemin laying down the broad aim of PLA training as well as providing a strategic context for training. Top level doctrinal outline on joint operations was first given out in 1999 by academy of military science. Parallel set of guidance on PME and operational training were also promulgated by military leadership.

The initiative known as “Strategic project for talented people”(discussed earlier) along-with National Defence University Programme, commenced in 2003 to improve the quality of personnel. According to 2006 Defence White Paper, 112 civilian universities are engaged in educating National Defence students for PLA. Recent Chinese Military reports suggest that there are 80% university Graduates in PLA cadre now.

Two Incompatibles and Two Gaps

Hu Jintao first called for emphasis on military training in his Apr 2005 speech in the Jinan MR and in an All-arms training work conference. He personally delivered instructions on informationised training and the PLA was directed to pursue a three-pronged training strategy of simulation, networking, and base-based training. The theory of “Two incompatibles and two gaps”⁹⁷ was also enunciated by him in 2006 to identify and address the weaknesses in PLA in its preparation for modern high-tech warfare. In 2007 a GSD training directive emphasised

on research on military training under Informationised conditions and focus on improving joint training at unit level.

Outline of Military Training and Evaluation (OMTE) and Other Training Guidance Literature

Guideline for training in the form of “Outline of Military Training and Evaluation” (OMTE) was first issued by erstwhile GSD in 2002. The OMTE set uniform standards and led to an increased focus in many training areas such as combined arms and joint operations, force on-force training, rapid reaction, information countermeasures, and comprehensive logistical support. Comprehensive guideline on joint operations was first issued in 2006 by Hu Jintao, titled, “transforming PLA training by training commanders and staff on joint operations concepts”. PLA efforts toward joint operations since 2008 have centred on: developing faculty expertise in military educational institutions; getting PLA commanders to think in terms of joint training; and developing information systems to facilitate joint command.⁹⁸ In 2012, CMC issued the 2020 Military School and education reform and development programme outline. In 2013, the PLA was in the process of updating joint operations basic guidance, to include a new “Joint Campaign Outline,” “Joint Operations Command Outline,” and “Joint Campaign Coordination Outline.” This guidance provides the conceptual foundation needed to reform the training program structure. This includes a “Strategic Training Compendium,” “Joint Campaign Training Compendium,” “Unit Joint Training and Evaluation Outline,” as well as specialized training documents for various operational elements such as reconnaissance/intelligence, command and control, joint fire strikes, and logistics.⁹⁹

OMTE-2018

The latest OMTE has been issued in Jan 2018, as reported in Chinese media. The latest revision to the outline is the

PLA's eighth overall remodelling of the system of the military training content since April 2013, as stated by the PLA Daily, the official organ of the military. The state run Xinhua news agency reported that it looks to establish "a system of training content and related mechanisms that are more into combat and joint operations, as well as [being] more scientific and normalised." Moreover, the outline sets up a standard system covering personnel at different levels and in different fields that meets the requirement of modern warfare, laying the basis for the PLA's training, while setting a significant rule for military training in the new era.¹⁰⁰

Establishment of Training Bases

PLA has Combined arms tactical training bases (CATTB) located in each erstwhile MR. While initially established primarily for ground-force combined arms training, these training bases have evolved into more sophisticated exercise venues featuring facilities to integrate war-gaming and simulation training, monitoring equipment to support unit evaluations, umpires and multiple integrated laser engagement systems (MILES) to provide greater realism, specialized training facilities and increasingly support joint training with the PLAAF.¹⁰¹ The Zhurihe base, "China's Fort Irwin", is a massive military training facility located deep in the Inner Mongolia Autonomous Region. The PLA's largest and most advanced training base, it has been set up to provide realistic battle conditions for Chinese soldiers to enhance their combat skills. The training base covers an area of 1,066 sq km, almost the same as the land area of Hong Kong, and has its own hospitals and army logistic facilities. At Zhurihe, PLA troops have mock battles in grasslands, hills and deserts. Clips broadcast by state-controlled China Central Television have shown soldiers fighting near a building that closely resembled Taiwan's Presidential Office Building, suggesting Taipei is a likely target of the PLA's urban combat training. In 2014,

Zhurihe also hosted a six-day joint anti-terror drill, with forces from Russia, Kyrgyzstan, Kazakhstan and Tajikistan teaming up with PLA personnel.¹⁰²

The PLA had sped up the construction of large-scale integrated training bases that meet the requirements for joint training, as well as IT-based upgrading of combined tactical training bases, with the priority being given to the construction of complex electromagnetic environments. The PLA strives to develop simulation training devices and systems, and to improve training information networks.¹⁰³ The PLA even constructed a simulated “Taiwan Special Region” near the mountainous areas of Anhui Province, where it conducted “Red” vs. “Blue” war games, including amphibious landings, as well as airborne, air-to-sea, sea-to-air, and ECM/ECCM operations. Deployment of rapid reaction forces is subject to adequate air and sea lift capabilities.¹⁰⁴

Refining the Training Tasks

The PLA is intensifying the training of command organs, training in operating command information systems and informationised weaponry and equipment, and information skills. It is enhancing training to fulfil its missions, strengthening research and training in maintaining maritime, space, and electromagnetic space security, and is carrying out MOOTW training. According to training methodologies, based on and supported by command information systems, the PLA organizes combined training of different combat components (joint operational units, task-organised groups or tactical formations), assembly training of various combat elements (combat elements are task-organised to form operational units)¹⁰⁵, and joint training of all systems and all components. It is further intensifying joint training of task formations and confrontational training, and places emphasis on training in complex electromagnetic environments, unfamiliar terrain,

and complex weather conditions.

Bringing in Realism

Training continued to focus on executing large-scale, complex joint operations. This included increasing exercise realism by evaluating unit performance during force-on-force confrontations against dedicated opposing-force units, strengthening strategic campaign training, and executing long-distance manoeuvres and mobility operations.¹⁰⁶ Judging from the conduct of exercises discussed earlier and as brought out by military analysts, the PLA is vigorously practicing combined force operations with emphasis on long-range mobile rapid-deployment and amphibious landing capabilities.¹⁰⁷

Operationalisation of Joint Command and Control (C2) System

The January 2016 CMC Opinions on Deepening Reforms on National Defence and Armed Forces explained that: “By adapting to the requirement of integrated joint operation and command, we will establish a sound two-level joint operation and command system between the CMC and the theatres, and build a strategic and operational command system that integrates peace time and war time, that operates in a normal state, that specializes in main operations, and that is lean and highly efficient.” Accordingly, concurrent with establishment of Theatre Commands (TC), a new joint C2 structure was established. Joint Operations Command Centre (JOCC) with Xi Jinping as its C-in-C has been established at national level with CMC continuing to hold the highest command authority. CMC decisions will likely be passed down to the theatres through the JSD. The CMC (through the JSD) will also likely approve transfers of combat units from one TC to the next in the case of cross-theatre training or operations. The JSD will be responsible for other duties associated with joint operations, including developing campaign plans, formulating

military strategy, performing combat capability assessments, and ensuring combat readiness. The JSD's Operations Bureau will directly supervise out-of-area operations through its Overseas Operations Office. At TC level, TC JOCC led by respective Theatre Commanders has been established. The new C2 mechanism would allow forces to "quickly shift" to wartime operations without the need to set up a temporary command structure.¹⁰⁸ It has also been reported by Chinese media that the new two-level C2 structure is being vigorously put to test during the exercises conducted by PLA recently. Evolution of the joint training architecture (covered in Chapter 1) to supplement the evolution of Joint operations structure is also apparently being vigorously pursued.

Chapter – 5

Implications for India, India's Actions, Response and Counter-Strategy

Undertaking 'Integrated Theatre Battle' with an operationally adaptable force, to ensure decisive victory in a network centric environment across the entire spectrum of conflict in varied geographical domains, will be the guiding philosophy for evolution of force application and war fighting strategies.

– Joint Doctrine Indian Armed Forces-2017 (p-13)¹⁰⁹

A study of the articulated doctrine of China, when correlated with force structuring, technology development and training, provides a robust basis for assessing Chinese strategy and tactics as pertaining to India. The professed Chinese experience and the Revolution in Training Affairs (RTA) underway to convert its military to a transformed warfighting machine in order to reorient her security apparatus towards a more robust, current and dynamic organisation in sync with the modern armed forces of the world have one definite and straight forward implication for India—India has to deal with the menace of a better-prepared and better-trained adversary on her Northern Border and expanding its strategic space and influence in the Indo-Pacific to include Indian Ocean Region (IOR). To be relevant in the context of evolving war fighting doctrine and philosophy world over, especially when India's potential adversary has apparently made serious headway, India needs to carry out reappraisal of her joint training philosophy and

be proactive in implementing all that is needed for ensuring effective Joint Operations.

Widening Capability Gap

Each passing day, the gap in overall military capability, preparedness, military technology and informationisation etc. between India and China is widening. Before the gap becomes unbridgeable, India needs to get its counter-strategy right and get its act together. The evolving command and control structure, infrastructural build-up, force accretion, informationisation and enhanced joint training activities in the Tibetan region as discussed earlier, should force India to evolve its own joint operations doctrine, joint training doctrine and training methodology to meet the impending challenge in a befitting manner. It is also imperative for India to carry out necessary readjustment in command and control structure, employment philosophy and force restructuring to enhance her capability development, and put these to test through robust conduct of joint training enabling preparedness for integrated joint operations so as to be more relevant as far as her military might is concerned. The impact of Chinese RTA on India's overall geostrategic interests can also not be overlooked.

Comparative Assessment of Joint/Integrated Operations Capability of India and China

The national military strategy sets forth strategic concepts. The strategy has three components: peacetime engagement, deterrence and conflict prevention, and fight and win. The strategic concepts are the facilitators of the strategy; the strategy's three components are the tasks to be performed by the joint military. The execution of these tasks is based directly on military capabilities which may be listed as under:-

- Land warfare
- Strategic mobility and sustainability

- Sea, air, and space superiority
- Nuclear deterrence
- Command and control
- Information warfare
- Intelligence, surveillance, and reconnaissance
- Regional engagement and presence
- Joint Training

None of these capabilities is the exclusive domain of any one military service—these are joint capabilities to which all services could contribute. Based on the above list, a comparative assessment of Joint operations capability of India and China, purely based on individual perception, has been made and summarised in the table below.

Table 2: Comparative Assessment: India and China's Joint Operations Capability

Parameters	China	India	Remarks
Strategic Concepts	One China Policy, Power projection, Overseas presence, Securing the “China Dream”	Sino-Pakistan collusive threat, safeguarding interests in IOR	India has no officially declared strategic concept.
Land Warfare	Slow progress on Jointness and integrated approach.	Lacking in joint approach. Conceptually only amphibious operations	Andaman & Nicobar Command (ANC) should provide guidelines

Parameters	China	India	Remarks
	Declared intent to take proactive actions on war-footing.	planned to be carried out jointly.	for conduct of joint operations and training by other theatre-level forces.
Strategic mobility and sustain-ability	Special Forces, and Brigadisation, Continuous improvement in road and rail communication Infrastructure, Definite steps towards Integrated logistics.	IBG in conceptual form, Poorer communication infrastructure, no tangible steps towards joint logistics.	Infrastructure development in the Himalayan border needs priority action. Concrete steps needed to move from conceptual to functional mode.
Sea, air, and space superiority	Concrete steps towards integration with formation of SSF, joint acquisition etc.	Lacking in any coordinated approach towards integration	Urgent steps needed for achieving jointness and subsequently integration.
Nuclear deterrence	PLARF- an independent service now. Efforts on for integrated employment	SFC-a tri-service organisation. One of India's three integrated organisations.	India needs to build on its robust missile development program and creation of a more robust triad of delivery means

Parameters	China	India	Remarks
Command and control	Establishment of five TCs, Joint operations centres up to Theatre level.	Lacking in any joint/ integrated C2 except for creation of HQ IDS, A & N Command, and SFC	Innovative approach required to graduate to integrated C2 system.
Information warfare (Info W)	Informationisation is the buzzword. Relentless efforts towards building a modernised information infrastructure up to tactical level	Command, Information and decision support System (CIDSS) architecture in experimental stage. Tardy progress.	Full exploitation of available technology, acquisition of state-of-the art technology and formalisation of info W, as a force-multiplier required.
Intelligence, surveillance and reconnaissance (ISR)	Speedy progress in achieving integrated application of ISR resources.	Still service-centric. Has established Defence Intelligence agency (DIA).	China maintains technological edge over India. India has a better talent pool. India needs to exploit the advantages.
Regional engagement and presence	Enhanced bilateral and multilateral Exercises. Established Overseas office under CMC	India also conducts a number of bilateral and multilateral exercises.	India moving in the right direction.

Parameters	China	India	Remarks
Joint Training	OMTEs emphasise joint training. Focussed and methodical approach to PME. Markedly enhanced joint training activities. Trans-regional mobilisation under Informationised condition practiced regularly. Specialised Training Bases established for conduct of joint training	Joint doctrine and Joint Training doctrines (JTD) released. Joint Command and control system in nascent state. Joint training activities few and far between. No permanent training bases for joint training.	Added emphasis on conduct of joint exercises. Need to evolve its joint training methodology and practice it with missionary zeal.

Being Joint and Integrated

In a 2009 report on the Indian Armed Forces joint operations capability prepared by a team of researchers of US think-tank RAND Corporation, the researchers have brought out certain glaring lacunae in the joint war-fighting preparedness of Indian Armed Forces. The major shortcomings identified by them were, lack of a “single training methodology”, weak Joint structures, no joint doctrine, and episodic joint training, “though robust when it does occur.” The study also said that to describe Indian training methodologies, the methodologies of the three single services have to be described.

The reason for this shortcoming is clearly the lack of a Chief of Defence Staff (CDS). The training component of the HQ Integrated Defence Staff (a weak substitute for the CDS) looks at only joint PME and not joint collective training. That aspect remains the responsibility of the Service Headquarters or their individual Training Commands. None of the services has established a Collective Training Centre (CTC). The RAND study further states that the Indian armed services equate training with schooling. Evaluated in the light of the 1999 Kargil War and the 2002 Operation Parakram (a general mobilisation), these training methodologies at the operational level led to considerable difficulty integrating air operations and ground manoeuvre. Lastly the study states that “Joint Structures and Training for Joint Operations Joint structures in the Indian armed forces are best described as immature.”¹¹⁰ India has since then (in last decade) made some progress towards achieving synergy amongst the three services, but the progress is slow.

The Indian Armed Forces must take concrete steps to graduate from a principally service-centric organisation (with few joint structures) to a joint and integrated military. India has been taking or contemplating certain steps towards achieving jointness through creation of joint structures. Formation of joint structures like HQ, Integrated Defence Staff (IDS), Defence Intelligence Agency (DIA), Andaman and Nicobar Command and Strategic Force Command (SFC) are clearly very solid steps taken. The government is also planning to set up a “surgical strike” force comprising the best Special Forces soldiers drawn from the three Services (to comprise of Paras, Garuds and Marcos). This special unit will conduct surprise precision strikes deep inside enemy territory, inflicting maximum damage in the shortest possible time and leave the battle area swiftly, similar to the operation carried out by the country's Special Forces on seven terrorist launch pads across

the Line of Control in September 2016.¹¹¹

Formulation of Joint Doctrine Indian Armed Forces -2017 (JDIAF-17) and Joint Training Doctrine-2017 (JTD-17) are welcome steps at least from the theoretical point of view. While the Joint doctrine documents India's progress and intent on conduct of joint operations, the joint training doctrine dwells on the approach to joint training fundamentals, objectives, joint structures, planning and organisations, amongst other theoretical aspects.¹¹²

Joint Training Doctrine of India

As brought out in the JTD-17 the edifice of "Jointness" rests on three pillars viz, Joint Operations, Joint Warfare Doctrines and Joint Training. Joint training is therefore a fundamental requirement to achieve "Jointness" in operations. The JDIAF - 2017 brings out the critical necessity to operate "Jointly" and the need to continuously evolve the capability to do so. In Chapter 1 of JTD-17, the aim and principle of joint training is given as, "It is therefore imperative that our training efforts be optimally synergized towards maintaining such capability in keeping with the principle that 'We Ought to Train as We Shall Need to Fight as We Will Fight Only as We Would Have Been Trained'!...Joint training is of central importance, because it is only through Joint training that mutual understanding, interoperability, Joint doctrines, co-ordination, capability, capacity, networking and Joint war fighting skills lead to "Force multiplication effect" in combat power."¹¹³

Graduating from Synergistic Application of Combat Power towards an Integrated Approach

It is apparent from these documents and actions taken at operational and strategic level that presently the focus is on synergising the combat power of the three services with a lead service concept. While India is taking baby-steps in achieving

synergy, which would enhance India's potential additively, China has been apparently making giant strides in the direction of integrating its armed forces which has force-multiplication effect. India needs to graduate to a mode of developing capability to achieve jointness and integrated application of forces while prosecuting operations against a transformed PLA.

Indian Armed forces movement toward jointness is rather slow but continuing to gather momentum. Achieving jointness and further integration at the operational level need to be given impetus in the beginning. The commitment to joint operations and joint warfighting requires that all forces be capable of operating in a joint environment. The evolving joint military vision should be that, the joint system of systems, supported by information warfare, will provide the Indian Armed Forces with information superiority and permit the creation of totally new operational concepts to change war-fighting.

Impact of Emerging Technologies

China is following in the footsteps of advanced armies such as those of the United States and its allies who have graduated to launching "effects-based" operations in a "network-centric" battlefield environment. China has also been laying added emphasis on Cyber warfare, development of artificial intelligence (AI) for military purpose, development of killer robots and autonomous combat vehicles and exploitation of "big data". Chinese science and technology priorities and civil-military integration goals clearly indicate that China intends to achieve military advantage from key technologies such as quantum computing and communications, hyper-sonics, artificial intelligence, big data applications, cloud computing, 3D printing, nano-materials, and biotechnology.¹¹⁴ India can ill-afford to ignore the impact of these emerging technologies in a futuristic battle-field. These capabilities are highly capital intensive as they are based on secure, state-of-the-art command

and control systems with adequate redundancy, accurate ground, air and space-based reconnaissance, surveillance and target acquisition (RSTA) systems and failsafe precision guided strike munitions. The Indian armed forces will need to be alive to these developing technologies, carry out judicious allocation of these resources and ensure optimal utilisation of limited resources by ensuring joint procurement and joint employment.

Need for Reorganisation and Restructuring

In Oct 2018, India's biennial Army Commanders Conference convened to deliberate upon four major in-house studies.¹¹⁵ One of these studies on the "Re-organisation and Rightsizing of the Indian Army," made a decision to proceed with forming all arms integrated battle groups (IBG). The IBG's that India is now contemplating to form may be considered lighter divisions or heavier brigades. The IBGs facing China would be smaller and more suited for mountain warfare as compared to larger ones for the plains facing Pakistan. Each IBG could have four to six battalions of infantry and armoured units, two to three artillery regiments, an engineer unit, an integrated signals unit and dedicated integral logistics (eight thousand to ten thousand troops). The Indian Army has been clear however that not every corps, division or brigade will be replaced by an Integrated Battle Group. The terrain, threat perception and options available to the enemy will be critical factors for determining whether or not an IBG will replace the present structure.¹¹⁶

The formation of IBG needs deliberate planning keeping in mind the changing war-fighting and in keeping with the current military thinking and futuristic application of forces. Noted China watcher and Distinguished fellow in United Services Institution of India, Major General Rajiv Narayanan, in an informal discussion has brought out certain pertinent

issues on formation of IBGs: “In the context of China, brigadisation was a necessity due to requirement of moving forces from the Han heartland to large distance for peripheral defence as well as for enhancing its power projection potential. Unlike India, China has border defence forces, and it must be noted that China still maintains four Divisions in Tibet which have not been brigadised. While deciding on the three Rs’ (Reorganisation, Restructuring and Relocation) it is incumbent to analyse how would the same facilitate conduct of operations at tactical, operational as well as strategic level in a futuristic scenario, as envisaged in the joint operational doctrine.”

A holistic look needs to be taken and all options must be analysed thread-bare. Questions like, if relocation facilitates conduct of operation, is there a necessity to re-organise, and if reorganisation would help meet operational requirements should restructuring be done or vice versa? Operational necessity and considerations must take precedence while deciding these important aspects. Composite but compact organisations may facilitate better mobility, better coordination of long range firepower, deep surveillance, electronic warfare, secure communications and air defence in the tactical battle area and would probably facilitate better coordination with other services for conduct of integrated operations in a seamless manner with Airforce and Strategic force command (SFC) with an integrated C⁴I²SR structure in place. Any plan for reorganisation and restructuring must be done with this aim in mind rather than with other requirements like cadre management etc. Restructuring and organisational change need to be effected keeping in mind the futuristic requirement of carrying out integrated joint operations. More important for India is to take concrete steps for identifying the requirements, evolving and putting in place, viable and functioning joint structures (in line with HQ IDS, SFC, A and N Command, DIA) at all levels, achieve integration in C⁴I²SR capabilities

and new concepts of operations and testing their efficacy through conduct of a series of focussed, joint and integrated exercises and training activities.

India's Counter-Strategy

Reforms/ Restructuring of Training Organisations/ Institutions

The training activities of major training institutions of the individual services are coordinated by respective training commands. There are also training directorates in each Service HQ as well as in HQ, Integrated Defence Staff (IDS). Except for the tri-service institutions (National Defence College, New Delhi, NDA Khadakwasla, DSSC, Wellington, College of Defence Management, Secunderabad) and certain service specific training institutes, e.g., Indian Military Academy, Indian Naval Academy (Ezhimala), Indian Air Force Academy (Secunderabad), Army War College (Mhow), Naval War College (Goa), Naval Maritime Academy, Mumbai and College of Air Warfare (Secunderabad), other training institutions are Arms specific. While the training institutions need to cater for training of personnel of specific Service or specific Arm, the HQs responsible for coordinating all training activities need to have a joint outlook. There is therefore a case for integrating the service specific training command HQs and form function-based training HQs (e.g. Joint Operational Training HQ, Joint Logistics training HQ etc.). The HQ IDS in consultation with the three service HQs, need to develop uniform joint training requirements based on operational missions, publish uniform joint regulations and provide greater high-level direction and coordination in general.

The fully integrated functional training commands should then be responsible for carrying out research, doctrinal development and development of course materials for PME as well as for collective training including joint training.

The Training HQs should also be responsible to develop methodology for Joint training experimentation, evaluation and assessment. Conduct of Joint education at military educational institutes requires better joint teaching materials and instructors for training. Coordinating training of trainers should also be the responsibility of the integrated training HQs. In the quest for enabling Indian Armed forces to conduct integrated joint operations, the existing training Commands thus afford great opportunity for integration and restructuring for achieving jointness in the Indian Armed forces.

Case for Establishment of Training Bases for Joint Training

India has a number of training areas for conduct of training by respective Services. Sometimes joint training is also conducted in some training areas which affords such facilities. However, it is worth considering formalising the system of joint training by having permanent designated training bases with requisite infrastructure and training facilities as well as a permanently earmarked Opposing force (OPFOR) for conduct of force-on-force joint training.

Joint Tactical Training, Simulation and War-gaming

The joint tactical command training for commanders and staffs using war-gaming/simulations and confrontation training need to be given emphasis in order to overcome deficiencies in joint command and coordination procedures, as well as the transfer and use of command posts in joint tactical formations. Joint training includes simulation and war-gaming to train joint commanders and staffs, as well as dispersed field training with units at training areas spread over great distances but linked together in a joint exercise scenario by the command information system. The dispersed training supports long-range synchronization of operations by the dispersed staffs and units, which approximate the vision of the future battlefield. Simulation and war-gaming provide an efficient and cost-

effective means for experimentation and testing of new operational concepts.

Development of Human Potential

The human resources development (HRD) policies, particularly the adequacy of current training regimes, must also be re-evaluated so that adequate and requisite talents are available to operate the futuristic weapons and equipment, and lead tech-savvy futuristic organisations. Availability of talent must precede technology influx as envisioned by Jiang Zemin (discussed earlier in Chapter 2). Inculcation of a joint outlook and joint culture from the early stage of military training must be accorded topmost priority. The training curricula, methodology and structure must be reframed accordingly. Adequate and appropriate exposure to joint exercises and joint training must be afforded to all ranks that would be required to be part of joint operations in future battles. There is a need for a quantum jump in the attitude and outlook of officers from being arms-specific to being joint-minded. Regimentation and regimental spirit needs to be confined within the time- space limit of the *paltan* (battalion). There is definitely a need for drastic steps and methodical approach to be adopted to ensure development of human potential of the armed forces of India in line with joint military thinking.

Conduct of Multilateral Joint Exercises

“Transformation should not only be focussed on warfighting but to develop and strengthen military alliances and interoperability among allies and partners.”¹¹⁷ Conduct of multilateral exercises to include bilateral joint exercises is one of the important facets of security and strategic relations and cooperation between countries. India conducts as well as participates in a number of bilateral and multilateral joint exercises every year e.g. the Indo-U.S. Exercise Malabar, Singapore-India Maritime Bilateral Exercise (SIMBEX),

“Yudh Abhyas” series of exercise and “Cope India” exercises with US and “Indra” series with Russia. “Milan” (Getting-Together) is a multinational biennial exercise hosted by Indian Navy under the aegis of Andaman and Nicobar Command. India also participates in Rim of Pacific (RIMPAC) exercises, world’s largest international maritime exercises held biannually, hosted and administered by US Navy’s Pacific Fleet. The fourth edition of “Cope India” commenced on 2 December 2018. The IAF and Russian Air Force will also conduct the second leg of their “AviaIndra” Exercise at Jodhpur from Dec 10 to Dec 22, after holding the first leg at Lipetsk, Russia in September. Indian Navy warships have made 113 foreign port calls and held 16 exercises/coordinated patrols with different navies this year. The Indo-UK “Konkan” naval exercise is also currently underway off Goa. The Indra war-games with Russia is also set to be held in India’s East Coast towards End December.¹¹⁸ Conduct of such exercises, even though service-specific, does also provide operational exposure and afford mutual exchange of best practices towards enhancing operational capabilities. However to reap maximum benefits, India must participate in joint exercises involving more than one service with the aim of learning the nuances of integrated joint operations as envisaged to be conducted in a future battle-field milieu.

Utilising Multilateral/Joint Exercises for Deterrence Effect

The large-scale exercises including multilateral exercises with allies and partners, conduct of military training with missionary zeal, massive infrastructure development and provocative attempts at border intrusion in TAR and China’s assertion in the Indo-Pacific and growing influence in IOR, are truly unnerving for India. Publicity to large integrated exercises, including inviting observers as was done in Vostok 2018 is itself a strategy to showcase capabilities for achieving deterrence. India must use such stage-managed Joint/multilateral exercises to show its capabilities as a counter strategy for leveraging her strengths.

Building on India's Inherent Strengths

India enjoys certain advantages vis-à-vis China mainly in terms of geography, global diplomacy, amenable, discerning, and resilient human resources potential with a spiritualistic outlook, and a better-trained, battle-hardened military. India's security apparatus vows its allegiance to the Nation state and not to a dictatorship or to an autocratic party and India is always in the safe hands of a government which has the mandate of the people. Lastly, India is a more credible idea of a tolerant and not obscurantist, robust, thriving and more acceptable Nation-State.

As Brig Narender Kumar, Distinguished fellow in the United Service Institution of India puts it, "India's diplomatic acumen, allies, bilateral trade, social, cultural and technological leverages, all accounted towards strategic strength."¹¹⁹ Brig Narender Kumar has also laid out a very pragmatic and realistic timeline to achieve capabilities to meet the challenges from China by 2030.¹²⁰ Formalisation of joint training to achieve integration of resources during operations, as per him, must be done in the period 2015-2020.

Learning from the Enemy

India needs to exploit its potential by honing its skills through robust training methodology and carrying out enhanced joint training and exercises. In this context, very pertinently, it was brought out by Lt Gen GS Katoch (Retd), Distinguished Fellow in United Service Institution of India and an ex-Director General Perspective Planning, in an informal discussion that, "the reorganisation of the Chinese military into Theatre Commands should not only be looked at in the context of its synergising joint operations, but also at its potential for synergising joint training." In the context of India, It is presumed that in wartime, endeavour will be made for optimal utilisation and employment of forces by ensuring jointness based on a

lead service concept by the Government based on the advice of our Higher Defence Organisation which would designate the Lead Service depending on the area and nature of operations/operational environment. However the moot question is, “who’ll do this in peace-time in the context of integrated joint training?” Hence there is an urgent requirement of creating a structure to facilitate conduct of integrated collective training and integrated joint exercises. The PLA training model would be instructive in this respect.

The use of technology including artificial intelligence, the approach adopted by China to morph Western model of war-fighting and conduct of training for their own implementation in double-quick timeframe, the focus, the meticulousness, scientific and the methodical approach to problem solving (“Two Incompatibles and Two Gaps”)¹²¹ as being adopted by China are certain tenets which can be imbibed by India in carrying out transformation of the military. This can also be used for evolving the most suitable training philosophy and methodology to achieve the desired end state in case of a conflict. Learning from the enemy in order to beat them in their own game is perhaps not a bad idea!

Conclusion

When a military of a Nation is not fighting a war, what should it be doing? The obvious answer is; the Military should be preparing for War and military struggles. Preparing for military struggle involves acquiring dissuasive or deterrence capability against a potential external adversary or enemy, or for winning a war if thrust upon a nation. In the preparation for military struggle, there are myriad strands and there are umpteen number of tangible and intangible aspects which need to be addressed and plethora of factors which are required to be identified, framed in a coherent and logical manner and tackled with missionary zeal. However, in this fog of preparation, there is one unmistakable and constant factor, i.e. Military training. One cannot help but wonder how meticulously and assiduously China is going about the onerous task of preparing PLA for military struggle in the “new era”!

PLA has been unceasingly flaunting its new-found self-assurance and presumptuousness through various international forums, media reports and claims that: “After more than ten years of steady gradual reform, China’s national defence and army building has achieved a new historic development. The most important aspects of this are as follows: the PLA’s ideological and political construction has been comprehensively strengthened; the level of strategic management has been significantly increased; military organization is more reasonable; preparation for military struggle is constantly being expanded and deepened; the transformation of military training and weaponry is more Informationised; and the building of military

personnel has been significantly enhanced.”¹²²

However, close scrutiny of its conduct of military exercises, monitoring of its actual progress on the declared reform measures on ground stands getting biased by its self-proclamations, and ability to read between the lines would reveal a more pragmatic picture. There is no gain-saying that, deficiencies are aplenty, shortcomings are numerous, and there are plethora of impediments in PLA's ability to train for staging IJO. The progress in overcoming these roadblocks is rather slow. Information on successful execution of the joint exercises, effectiveness of PME and military preparedness of PLA, sourced mainly through China's state-controlled media, are, to a large extent, demonstrative in nature-to propagate Beijing's notion of growing military might with the aim of raising its global power status as well as instilling confidence in the populace on the legitimacy of the Party and CCP's ability to govern the nation and lead China to realise the “Chinese Dream”.

That said, one cannot overlook the fact that, the problems, by and large, have been identified, analysed, corrective measures chalked out and a very scientific, well thought-out and methodical system has been evolved by CMC and PLA to overcome these obstacles and carry out systematic reforms in training for joint ops. At higher echelons of PLA, the system seems to have been effective. But ultimately the measure of success of the system depends on effective implementation on ground and mainly at unit level. Apart from overall enhancement of competence at all levels, sustained and effective implementation is incumbent on the PLA senior and mid-level leadership's amenability to a changed mind-set, level of understanding of the application and implications of the reform measures. The realisation of the necessity of carrying out drastic changes, willingness to grow out of the comfort zone as well as how motivated and willing are the PLA lower-level leadership to adapt to changes and to create a distinct

belief system in units and headquarters is yet to be seen. These intangible aspects cannot be thrust upon their throat and can only be addressed by focussing on aspects of empowerment of individuals, inculcating independent and creative thinking ability, affording higher degree of freedom, enabling individuals to develop inner motivation on their own. Such concepts of freedom and individual empowerment can be honed by the service personnel, only with change in organisational culture. How it is going to unfold in a relatively closed communist society is a matter of conjecture.

However India could ill-afford to be complacent or bank upon a “strategy of hope” and diplomacy to ensure its security, and would do well to always be on guard against the unpredictable behaviour expected of an ambitious and hegemonic power with a leader deficient of the people’s mandate, at helm of affairs. India must adopt a dynamic robust strategy, do some lateral thinking and always be prepared for unforeseen eventualities. It must continually build its defence preparedness with a capability-base assessment. Indian Armed forces must adopt concrete steps towards jointness and integrated application of forces supported by pragmatic, evolving and dynamic joint operations and joint training doctrine. Robust joint structures and C⁴I²SR system must be put in place and endeavour to, achieve and maintain technological edge must always be the priority. Defence preparedness of Indian armed forces must be honed through conduct of methodical joint training activities. Creating suitable and integrated joint training organisations, adequate joint training infrastructure and facilities, evolving a viable training methodology, and empowering the soldiers and leaders through imparting PME of high standard and with a futuristic outlook are certain measures which are required to be taken with due deliberation. Planning and conduct of purposeful and resolute training activities to include joint training exercises and multilateral exercises would surely help

in enhanced defence preparedness. India can take a few leaves from the Chinese in regard to conduct of integrated joint operations and joint training and adopt those yet retaining India's distinct approach.

Endnotes

- 1 Xi Jinping's address during 90th Anniversary of PLA , <https://www.scmp.com/video/china/2104938/xi-jinpings-party-address-pla-90th-anniversary>
- 2 Xi's speech Delivered at the 19th National Congress of the Communist Party of China October 18, 2017, http://www.xinhuanet.com/english/download/Xi_Jinping's_report_at_19th_CPC_National_Congress.pdf
- 3 Deng Xiaoping's Four Modernizations are Modernizing Agriculture, Expanding Industry, Developing science and technology and Upgrading China's defence forces
- 4 The "three represents" is the notion that the Chinese Communist Party represents the advanced productive forces, represents advanced culture, and represents the fundamental interests of the vast majority of the people. See Jia Hepeng "The Three Represents Campaign: Reform the Party or Indoctrinate the Capitalists?" *Cato Journal*, Vol. 24, No. 3 (Fall 2004)
- 5 The scientific outlook on development means China has to change from over-reliance on a cheap labour force, funds and natural resources to well-educated workers and improvement of science and technology, a development mode that not only values quantity and speed but also high quality and energy-saving. See "Scientific Outlook on Development", [xinhua/chinadaily.com.cn/people.com.cn](http://xinhua.chinadaily.com.cn/people.com.cn) accessed at http://cpcchina.chinadaily.com.cn/2010-09/08/content_13918103.htm on 18 Sep 18
- 6 A moderately prosperous society, reform, rule of law, Party discipline -- these "Four Comprehensives" are Xi Jinping's blueprint for China's future. See "China Voice: Xi's "Four Comprehensives" a strategic blueprint for China" in *Xinhuanet* 25 Feb 2015. Explaining Mr. Xi's theoretical blueprint in detail, Robert Kuhn, a political and economic commentator listed the four comprehensives as: Comprehensively building a moderately prosperous society, comprehensively deepening reform, comprehensively governing the nation according to law

and comprehensively strictly governing the Communist Party. "A moderately prosperous society is the goal, deeper reform is the means, rule of law is the principle, and strict definition of the Party is the action or state of affairs

- 7 "Informatization" is defined as "conditions in which modern military forces use advanced computer systems, information technology, and communication networks to gain operational advantage over an opponent".The concept refers to "high-intensity, information-centric regional military operations of short duration." See Office of the Secretary of Defense, *Military and Security Developments Involving the People's Republic of China*, Washington D.C.: U.S. Department of Defense, 2011, p. 3. See also Information Office of the State Council, *China's National Defense in 2010*, March 2011.
- 8 "Full text: China's Policies on Asia-Pacific Security Cooperation," *Xinhua News*, (January 11, 2017) www.xinhuanet.com/english/china/2017-01/11/c_135973695.htm, accessed Feb 17, 2018. The White Paper is forthright about China's desire for an expansive security role: "China will shoulder greater responsibilities for regional and global security, and provide more public security services to the Asia-Pacific region and the world at large." The language emulates America's declared role to provide regional and international security and stability. The message is that China too can and will do this. There is no longer any inhibition in openly declaring that China will be a great military power: the Paper says that China will build armed forces that are commensurate with China's "international standing and its security and development interests.
- 9 Office of the Secretary of Defence, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2018*, Department of Defence, USA, 16 May 2018.
- 10 Li Xiang, "Military Transformation with Chinese Characteristics in the New Century", *Institute for Security and Development Policy Report*, Stockholm, Jul 2013, URL: <http://isdpeu.org/content/uploads/publications/2013-xiang-military-transformation.pdf>

- 11 Office of Secretary of Defense, US, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China*, 2018(pdf)
- 12 *China's National Defense in 2004*, December 2004, <http://www.china.org.cn/e-white/20041227>
- 13 Kristin Huang, "Here's how China's military has been preparing for war", *South China Morning Post (SCMP)* 19 Jan 2018, <https://www.businessinsider.com/heres-how-chinas-military-has-been-preparing-for-war-2018-1?IR=T>
- 14 Xi's Speech during NPC and CPPCC Annual Conference-2017 in which he said, "Efforts to improve the training system of military personnel should also be strengthened to foster a large number of high-quality military talent, adding that enhancing scientific and technological attainment of officers and men should be a basic requirement for the PLA." <http://english.cctv.com/2017/03/13/ARTIiXiJ30IOengcngavyDDH170313.shtml>
- 15 "Xi issues instructions at 2018 PLA training launch", *Global Times*, 3 Jan 2018 <http://www.globaltimes.cn/content/1083123.shtml>
- 16 "Military hones its skills in exercise", *China Daily*, 8 Jan 2018. <http://www.chinadaily.com.cn/a/201801/08/WS5a52a4c0a31008cf16da592f.html>
- 17 "China air force stages real combat training", *Xinhua*, 11 Jan 2018. <http://www.globaltimes.cn/content/1084320.shtml>
- 18 "PLA training hard for potential conflict", *Global Times*, 11 Jan 2018 <http://www.globaltimes.cn/content/1084489.shtml>
- 19 "Tech, training key to upgrading China's military forces", *Global Times*, 04 Feb 2018. <http://www.globaltimes.cn/content/1088167.shtml>
- 20 "Chinese military, PLA, holds ground combat drills in Tibet to test their skills", *Financial Express* PTI | Beijing | 20 July 2018

- <https://www.financialexpress.com/defence/chinese-military-pla-holds-ground-combat-drills-in-tibet-to-test-their-skills/1252318/>
- 21 Tom O'Connor, "China Trains for Taiwan Invasion in Military Drills that could Cover Entire Island," *News Week*, 18 Jul 2018, <https://www.newsweek.com/china-trains-taiwan-invasion-military-drills-cover-entire-island-1031807> accessed on 15 Sep 18
 - 22 "Military training: First class of college", *China Daily*, 05 Sep 2018 http://eng.chinamil.com.cn/view/2018-09/05/content_9272647.htm
 - 23 "Joint military drills broad-based", *China Daily* 13 Sep 2018. http://eng.chinamil.com.cn/view/2018-09/12/content_9279777.htm
 - 24 "PLA takes part as massive military drill begins", *China Daily*, 12 Sep 2018. http://eng.chinamil.com.cn/view/2018-09/13/content_9280624.htm
 - 25 "Xi inspects military, stresses training, war preparedness", *Xinhua*, 30 Sep 2018 http://eng.tibet.cn/eng/index/focus/201809/t20180930_6294459.html
 - 26 Summarised from the Newspaper reports referred to in the previous paragraph.
 - 27 Michael S. Chase, Jeffrey Engstrom, Tai Ming Cheung, Kristen A. Gunness, Scott Warren Harold, Susan Puska, Samuel K. Berkowitz; *China's Incomplete Military Transformation*, 2015, the RAND Corporation, Santa Monica, Calif. https://www.rand.org/content/dam/rand/pubs/research_reports/RR800/RR893/RAND_RR893.pdf
 - 28 China's National Defense in 2010, Mar 2011, p-11-13 at URL: http://www.china.org.cn/government/whitepaper/node_7114675.htm
 - 29 Jeffrey Engstrom, *Systems Confrontation and Systems Destruction Warfare*, 2018, RAND, p-23 <https://www.rand.org/content/>

- dam/rand/pubs/research_reports/RR1700/RR1708/RAND_RR1708.pdf
- 30 “Three attacks” refers to attacks on helicopters, tanks, and airborne troops. “Three defences” means to defend against nuclear/biological/chemical attacks, electronic countermeasures, and precision-guided weapon systems.
- 31 System of systems operations is described as essentially a process, based on the information systems, to optimise and allocate operational forces and resources in order to generate combat power, increase combat effectiveness, and streamline and integrate systems and organisations. Refer PLA Daily, 18 Aug 2011, Quoted by Kevin N McCauley “System of Systems Operational Capability: Key Supporting Concepts for Future Joint Operations” *China Brief-XII(19)*, 05 Oct 2012
- 32 For details read Mark R. Cozad and Astrid StuthCevallos “Chapter Two: Trends in PLA Air Force Joint Training Assessing Progress in Integrated Joint Operations” in Ed. Edmund J. Burke, Astrid StuthCevallos, Mark R. Cozad, Timothy R. Heath, *Assessing the Training and Operational Proficiency of China’s Aerospace Forces Selections from the Inaugural Conference of the China Aerospace Studies Institute (CASI)*, 2016, the RAND Corporation, Santa Monica, Calif.
- 33 *China Strategic Perspectives*, No. 10
- 34 Mark R. Cozad, “PLA Joint Training and Implications for Future Expeditionary Capabilities”, The *RAND Corporation Report Before the U.S.-China Economic and Security Review Commission* 21 Jan 2016, https://www.rand.org/content/dam/rand/pubs/testimonies/CT400/CT451/RAND_CT451.pdf
- 35 Andrew N. D. Yang and Col. Milton Wen-Chung Liao (ret.), “PLA Rapid Reaction Forces: Concept, Training and Preliminary Assessment”, RAND, https://www.rand.org/content/dam/rand/pubs/conf_proceedings/CF145/CF145.chap4.pdf, assessed on 22 Oct 2018.
- 36 Capt Sandeep Deshmukh, “Ch 1: Trends in World Economy”,

- China's Economy and Military Budget Annual Issue-2018*, China Maritime Study and Research Group, Naval War College, Goa
- 37 Andrew N. D. Yang and Col. Milton Wen-Chung Liao (ret.), "PLA Rapid Reaction Forces: Concept, Training and Preliminary Assessment" , RAND, p 51.
- 38 "Hu Jintao's Speech at a Conference on PLA Military Training", June 2006.
- 39 Hu Jintao's speech at the meeting of PLA delegates during the second session of the Eleventh National Congress of the Communist Party of China, March 11, 2009.
- 40 Li Xiang, "Military Transformation with Chinese Characteristics in the New Century", Jul 2013, *Asia Paper*, Institute for Security and Development Policy, Sweden
- 41 These details have been compiled based on Joint Tactical Training (Beijing: Tide Publishing House: 2008), Joint Training Science Course of Study (Beijing: Military Science Press, 2013) and Joint Operations Research, (Beijing: National Defense University Press, 2013 in an article By Kevin N. McCauley , " Incomplete Transformation: PLA Joint Training and War-fighting Capabilities" in China Brief, Volume XV, Issue 5, 6 March 2015
- 42 Ibid.
- 43 Ibid.
- 44 Bernard D Cole, "Chapter 2: China's Navy Prepares: Domestic Exercises, 2000-10", Roy Kamphausen et al (ed), *Learning by Doing, The PLA Trains at Home and Abroad*, 2013, Vij Books India Pvt Ltd, New Delhi, p-23
- 45 Report in *China Brief*, May 9, 2013
- 46 David E. Johnson, Jennifer D.P. Moroney, Roger Cliff, M. Wade Markel, Laurence Smallman and Michael Spirtas, *Preparing and Training for the Full Spectrum of Military Challenges, Insights from the Experiences of China, France, the United Kingdom, India,*

- and Israel*, RAND Corporation. (2009) p 33, Quoted in *China's Navy, 2007*, Office of Naval Intelligence, p. 71.
- 47 "Reforms in Military Training Academies," *Xinhua* BEIJING, (July 19, 2017)
- 48 Ying Yu Lin, "One Step Forward, One Step Back for PLA Military Education", *China Brief*, Jamestown, 24 April 2018 <https://jamestown.org/program/one-step-forward-one-step-back-for-pla-military-education/>
- 49 "The Central Military Commission headed by President Xi Jinping has approved the outline for military training." *Xinhua news agency*(Jan 28, 2018)
- 50 Li Xiang, Military Transformation with Chinese Characteristics in the New Century", Jul 2013, *Asia Paper*, Institute for Security and Development Policy, Sweden, p-20
- 51 *ibid* p-21
- 52 *China's National Defense in 2008*, January 20, 2008, http://www.china.org.cn/government/whitepaper/node_7060059.htm.
- 53 Chinese Defense Minister Chang Wanquan has called on military and governments at all levels to strengthen national defense education with practical measures, *Xinhua* 14 May 2017)
- 54 Mark R. Cozad and Astrid Stuth Cevallos "Chapter Two: Trends in PLA Air Force Joint Training Assessing Progress in Integrated Joint Operations" in Ed. Edmund J. Burke, Astrid Stuth Cevallos, Mark R. Cozad, Timothy R. Heath (eds), *Assessing the Training and Operational Proficiency of China's Aerospace Forces Selections from the Inaugural Conference of the China Aerospace Studies Institute* (CASI), 2016, RAND Corporation, Santa Monica, Calif, https://www.rand.org/pubs/conf_proceedings/CF340.html
- 55 Dennis J. Blasko, "Chapter 5: Clarity of Intentions: PLA Transregional Exercises to Defend China's Border", Roy Kamphausen et al (ed), *Learning by Doing, The PLA Trains at*

- Home and Abroad*, 2013, Vij Books India Pvt Ltd, New Delhi, p-182
- 56 Ibid, p-175
- 57 “Vanguard-2009” military drill starts in C. China”, URL:<http://english.cctv.com/program/newshour/20091011/102145.shtml>
- 58 Situated in the depth of the Inner Mongolian Grassland, the Zhurihe Combined Tactics Training Base of the Beijing Military Area Command (MAC) of the Chinese People’s Liberation Army (PLA) is not only Asia’s largest training base but also the PLA’s most modernized training base, the only training base where the PLA can hold group-army-scale actual-troop campaign exercise. URL: <https://productforums.google.com/forum/#!topic/gec-military/b6xCLxV1Ph8>. Zhurihe CTTB is now also the main training base for the PLA Airborne troops.
- 59 “8 things to know about China’s biggest army training base: Zhurihe base in Inner Mongolia offers realistic battle conditions in a variety of terrains”, *South China Morning Post*, 24 July 2017, <https://www.scmp.com/news/china/diplomacy-defence/article/2103593/8-things-know-about-chinas-biggest-army-training-base>
- 60 “Don’t Read Too Much Into Our Massive Military Drills, China Says”, Reuters, 22 Jan 2016, URL: <https://www.ndtv.com/world-news/dont-read-too-much-into-military-drills-china-says-after-taiwan-alarm-1268723>
- 61 Major General Rajiv Narayanan, AVSM, VSM (Retd), *PLA Reforms of Xi Jinping in an Era of Assertive Diplomacy*, USI Monograph No3, 2018, Vij Books India Pvt Ltd, New Delhi, p-5
- 62 “Don’t Read Too Much Into Our Massive Military Drills, China Says”, Reuters, 22 Jan 2016, URL: <https://www.ndtv.com/world-news/dont-read-too-much-into-military-drills-china-says-after-taiwan-alarm-1268723>
- 63 “Here’s how China’s military has been preparing for war”,

- SCMP*, Sep 18, <https://www.businessinsider.com/heres-how-chinas-military-has-been-preparing-for-war-2018-1?IR=T>
- 64 Office of Secretary of Defense, US, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2018*, p 19-20
- 65 Vasily Kashin, "The Current State of Russian-Chinese Defence Cooperation," *Occasional Paper*, CNA, Aug 2018.
- 66 Steve Mollman "China's growing power is bringing military drills center stage in Asia," *Quartz*, August 23, 2018 URL: <https://qz.com/1366425/chinas-growing-power-is-bringing-military-drills-to-the-fore-in-asia/>
- 67 Office of Secretary of Defense, US, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China*, 2018, p 20 (pdf)
- 68 As reported in Chinese Media, Xinhua, and Global Times
- 69 "China, Thailand host joint air force exercise "Falcon Strike 2018," China Military Online, 7 Sep 2018, http://eng.chinamil.com.cn/view/2018-09/07/content_9275202.htm
- 70 Chatham House, , Report, "Russia's Vostok Exercises Were Both Serious Planning and a Show", Royal Institute of International Affairs, London 17 Sep 18: https://www.chathamhouse.org/expert/comment/russia-s-vostok-exercises-were-both-serious-planning-and-show?utm_source=Chatham%20House&utm_medium=email&utm_campaign=9867673_CH%20Newsletter%20-%202021.09.2018&utm_content=Russia-CTA&dm_i=1S3M,5VHY1,U72UCP,MZ2VV,1
- 71 "China declares Vostok 2018 war games a success as troops are 'toughened up for battle'", *South China Morning Post*, 18 Sep 2018, <https://www.scmp.com/news/china/military/article/2164592/china-declares-vostok-2018-war-games-success-troops-are>
- 72 *Xinhua*, September 11, 2016

- 73 *PLA Daily*, September 14, 2016
- 74 Kevin McCauley, “Himalayan Impasse: How China Would Fight an Indian Border Conflict,” *China Brief*, Vol 17 issue 12, 21 Sep 2017
- 75 Ananth Krishnan, “PLA armoured brigade holds ‘high altitude drill’ in Tibet with most advanced tank,” *India Today*, 6 Jul 2017, <https://www.indiatoday.in/world/story/china-india-military-drill-doklam-plateau-pla-armoured-brigade-1022657-2017-07-06>
- 76 “Chinese military, PLA, holds ground combat drills in Tibet to test their skills,” PTI, Beijing in *Financial Express*, 20 Jul 2018, URL: <https://www.financialexpress.com/defence/chinese-military-pla-holds-ground-combat-drills-in-tibet-to-test-their-skills/1252318/>
- 77 “PLA training hard for potential conflict” *Global Times* 11, Jan 2018, URL: <http://www.globaltimes.cn/content/1084489.shtml>
- 78 Kevin McCauley, “Himalayan Impasse: How China Would Fight an Indian Border Conflict”, *China Brief*, Vol 17, Issue 12, 21 Sep 2017.
- 79 Col Ashish Khanna, “Don’t Become Militarily Complacent Vis-à-Vis China”, *Delhi Defence Review*, August 5, 2018, <http://www.delhidefencereview.com/2018/08/05/opinion-dont-become-militarily-complacent-vis-a-vis-china/>
- 80 Shiv Aroor, “From sky, see how China builds model of Indian border 2400 km away”, *Indian Express*, 05 August 2006, <http://archive.indianexpress.com/news/from-sky-see-how-china-builds-model-of-indian-border-2400-km-away-19972/1>, and report in URL: <https://virtualglobetrotting.com/map/aksai-chin-terrain-scale-model/view/google/>
- 81 “Pakistan, China 2016 joint military exercise!”, *Kashmir Watch*, 16 Apr 2016, <http://kashmirwatch.com/pakistan-china-2016-joint-military-exercise/>

- 82 Ahmad Waqas Makhdoom, Abdul Basit Khan Mazhar and Abbas Khan, "Study of Pakistan-China Defense Relations (2000-2012)", *M phil Research Paper*, Research on Humanities and Social Sciences, ISSN (Paper) Vol.4, No.22, 2014, <https://www.iiste.org/Journals/index.php/RHSS/article/view/16834/17173>
- 83 "Pakistan, China hold joint navy exercise", *The Nation*, 10 Dec 2017, <https://nation.com.pk/10-Dec-2017/pakistan-china-hold-joint-navy-exercise>
- 84 "Pak-China joint air exercise underway", *The News*, 27 Sep 2017, <https://www.thenews.com.pk/latest/232246-Pak-China-joint-air-exercise-underway>
- 85 "Shaheen VII: Pakistan, China air forces launch joint drills", *Daily Pakistan*, 03 Dec 2018, http://english.chinamil.com.cn/view/2018-12/03/content_9364047.htm
- 86 Brig Narender Kumar, *Rise of China A: Military Challenge to India*, 2018, CLAWS in Association with KW Publishers Pvt Ltd, New Delhi, p-196
- 87 Roy Kamphausen David Lai Andrew Scobell (Eds), *Beyond the Strait: PLA Missions Other Than Taiwan*, April 2009, p-359
- 88 PTI report "India, China to resume annual military exercise later this year," 25 Apr 2018, *Times of India*, http://timesofindia.indiatimes.com/articleshow/63914853.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst
- 89 Press Information Bureau , Government of India, Ministry of Defence " *Year-end Review – 2016*", 31-December-2016 , <http://pib.nic.in/newsite/PrintRelease.aspx?relid=156049>
- 90 "Pakistan, India Participate Together in Military Exercise", *The Express Tribune*, 25 Aug 2018 <https://tribune.com.pk/story/1787450/3-pakistan-india-participate-together-military-exercise/>
- 91 Roy Kamphausen David Lai Andrew Scobell (Eds), *Beyond the Strait: PLA Missions Other Than Taiwan*, April 2009, p-335

- 92 Culled out from various reports in Chinese media and also see, Michael S. Chase, et al., *China's Incomplete Military Transformation: Assessing the Weaknesses of the People's Liberation Army (PLA)*, RAND Corporation, February 2015, especially pp. 43–124.
- 93 Mark R. Cozad and Astrid StuthCevallos “Chapter Two: Trends in PLA Air Force Joint Training Assessing Progress in Integrated Joint Operations” in Edmund J. Burke, Astrid StuthCevallos, Mark R. Cozad, Timothy R. Heath (Eds.), *Assessing the Training and Operational Proficiency of China's Aerospace Forces Selections from the Inaugural Conference of the China Aerospace Studies Institute (CASI)*, 2016, the RAND Corporation, Santa Monica, Calif.
- 94 Daniel M Hartnett, “Looking Good on Paper: PLA Participation in the Peace Mission 2010 Multilateral Military Exercise”, Roy Kamphausen et al (ed), *Learning by Doing, The PLA Trains at Home and Abroad*”, 2013, Vij Books India Pvt Ltd, New Delhi, p-232.
- 95 Office of the Secretary of Defence, “Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2018,” Department of Defence, USA, 16 May 2018.
- 96 The “Two Transformation” calls for the PLA to transform itself (1) from an army preparing to fight local wars under ordinary conditions to an army preparing to fight and win local wars under modern, high-tech conditions and (2) from an army based on quantity to an army based on quality. Read more in, David Finkelstein” Chapter 7: National Military Strategy of China” James C Mulvenon and Richard H Yang ed, *The People's Liberation Army in the Information Age, Volume 145(1999)*, Center for Asia-Pacific Policy (Rand Corporation), RAND Corporation, Project Air Force (U.S.), p 135
- 97 “Two incompatibles” is a statement of what the problem is and “Two gaps” seeks to explain why the problem exists and how the problem can be addressed. The first incompatible is,

“PLA’s level of modernization in fighting Informationised wars is incompatible, because there is a substantial gap which endures between the PLA and the advanced modern militaries of the world”. The second incompatible is, “PLA’s level of modernization in fighting informatised wars is incompatible, because there is still a gap exists between the current military power of the military and the requirement of fulfilling the historic missions. And PLA considers Training reforms to be the basic path to resolving the two incompatibles. This is explained very lucidly in, Michael S Chase et al, *China’s Incomplete Military Transformation: Assessing the Weaknesses of PLA*. Since 2013, under Xi’s leadership, the “Two Big Gaps” and the “Two Inabilities” – translations of the Chinese terms vary) have come to prominence as general descriptions of PLA capabilities. Similar to the “Two Incompatibles,” the “Two Big Gaps” states “(1) there are big gaps between the level of our military modernization compared to the requirements for national security and the (2) level of the world’s advanced militaries” (China Air Force, April 16, 2013). The “Two Inabilities” reinforces these points and further identifies problems specifically in officer capabilities: The PLA’s ability “(1) to fight a modern war is not sufficient, (2) our cadres at all levels ability to command modern war is insufficient” (China Air Force, July 12, 2013). These two formulas sometimes are paired together and have been associated with the “Two Incompatibles” (China Military Online, February 5, 2015 and CPC News Network, December 11, 2013). Beginning in 2015, the “Five Incapables” formula began to be used which criticizes “some” leaders’ command abilities: “Some cadre cannot (1) judge the situation, (2) understand the intention of the higher up authorities, (3) make operational decisions, (4) deploy troops, and (5) deal with unexpected situations” (China Military Online, February 5, 2015). See, Dennis J. Blasko “The New PLA Joint Headquarters and Internal Assessments of PLA Capabilities”, *China Brief*, Volume XVI • Issue 10, 21 June 2016

- 98 Wanda Ayuso, Lonnie Henley, “Chapter 5: Aspiring to Jointness: PLA Training Exercises and Doctrine, 2008-2012”, in Roy Kamphausen, David Lai, Travis Tanner (Eds), *Assessing the*

- People's Liberation Army in the Hu Jintao Era*, Strategic Studies Institute and U.S. Army War College Press, Apr 2014, p-171, <http://www.StrategicStudiesInstitute.army.mil/>
- 99 Based on *Joint Training Science Course of Study* (Beijing: Military Science Press, 2013) as compiled in the article By Kevin N. McCauley , “ Incomplete Transformation: PLA Joint Training and War-fighting Capabilities” in *China Brief*, Volume XV, Issue 5, 6 March 2015
- 100 ”The Central Military Commission headed by President Xi Jinping has approved the outline for military training.” *Xinhua news agency*, 28 Jan 2018.
- 101 Kevin N. McCauley, “Incomplete Transformation: PLA Joint Training and Warfighting Capabilities”, *China Brief*, Volume XV Issue 5 march 6, 2015
- 102 “8 things to know about China’s biggest army training base: Zhurihe base in Inner Mongolia offers realistic battle conditions in a variety of terrains”, *South China Morning Post*, 24 July 2017, <https://www.scmp.com/news/china/diplomacy-defence/article/2103593/8-things-know-about-chinas-biggest-army-training-base>
- 103 *China's National Defense in 2010*, March 31, 2011, http://www.china.org.cn/government/whitepaper/node_7114675.htm
- 104 Andrew N. D. Yang and Col. Milton Wen-Chung Liao (ret.) “PLA Rapid Reaction Forces: Concept, Training and Preliminary Assessment” https://www.rand.org/content/dam/rand/pubs/conf_proceedings/CF145/CF145.chap4.pdf
- 105 For Details see, Kevin McCauley, *PLA System of Systems Operations: Enabling Joint Operations*, 2017, James Town Foundation(pdf), p-14-15
- 106 Office of the Secretary of Defence, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2018*, Department of Defence, USA, 16 May 2018.
- 107 “Chinese Military Reform in the Age of Xi Jinping”, Center

- for the Study of Chinese Military Affairs, Institute for National Strategic studies, National Defence University, US, *China Strategic Perspective- 10*
- 108 “Chinese Military Reform in the Age of Xi Jinping”, *China Strategic Perspective- 10*
- 109 HQ Integrated Defence Staff, Ministry of Defence, *Joint Indian Armed Forces Doctrine -2017*, New Delhi, Apr 2017,p-13
- 110 David E. Johnson, Jennifer D.P. Moroney, Roger Cliff, M. Wade Markel, Laurence Smallman and Michael Spirtas, *Preparing and Training for the Full Spectrum of Military Challenges Book Subtitle: Insights from the Experiences of China, France, the United Kingdom, India, and Israel*, RAND Corporation. (2009), p-182 URL: <https://www.jstor.org/stable/10.7249/mg836osd>
- 111 “A “Surgical Strike” Unit To Fight Behind Enemy Lines: Government Sources”, NDTV, 04 Dec 2018, <https://www.ndtv.com/india-news/new-surgical-strike-unit-to-fight-behind-enemy-lines-government-sources-1957469>
- 112 Shaurya Karanbir Gurung, “Navy chief launches document on joint training of 3 services” *ET*, Nov 14, 2017, <https://economictimes.indiatimes.com/news/defence/navy-chief-released-the-joint-training-doctrine-indian-armed-forces-2017/articleshow/61646852.cms>
- 113 Headquarters Integrated Defence Staff, Ministry of Defence, *Joint Training Doctrine, Indian Armed Forces*, New Delhi, Nov 2017, p-2
- 114 Testimony of Cortez A. Cooper III1 The RAND Corporation, Before the U.S.-China Economic and Security Review Commission, “PLA Military Modernization: Drivers, Force Restructuring, and Implications”, February 15, 2018
- 115 Four theme based committees have been formed, each under a Lt Gen, with terms of reference. These are — reorganising and optimisation with an aim of transforming the Indian Army, reorganization of the army HQ, cadre review of officers and

- review of terms of engagement of other ranks (OR).
- 116 “Integrated Battle Groups Are India’s Response to Pakistan,” *Defence News*, 18 Nov 18, accessed at <http://www.defencenews.in/article/Integrated-Battle-Groups-Are-Indias-Response-to-Pakistan-581627> on 18 Nov 18
- 117 Brig Narender Kumar, *Rise of China A Military Challenge to India*, 2018, CLAWS in Association with KW Publishers Pvt Ltd, New Delhi
- 118 “India tries to do a balancing act with combat exercise”, 1 Dec 2018, *Times of India*.
- 119 Brig Narender Kumar, *Rise of China A Military Challenge to India*, 2018, CLAWS in Association with KW Publishers Pvt Ltd, New Delhi, p-197-198.
- 120 Ibid, pp 212-213.
- 121 See note 97
- 122 Li Xiang, “Military Transformation with Chinese Characteristics in the New Century”, *Institute for Security and Development Policy Report*, Stockholm, Jul 2013, URL: <http://isdpeu/content/uploads/publications/2013-xiang-military-transformation.pdf>