People's Liberation Army:
Army Campaign Doctrine in Transition

Kevin McCauley

KEY TAKEAWAYS

- The PLA develops generic offensive, defensive, and special conditions campaign models to support planning and training for operational scenarios it believes are relevant to potential conflicts. These generic campaigns provide planning factors, force organization, and operational methods for combat.

- The choice of campaigns reveals that Taiwan and Indian conflict scenarios are the key scenarios for which the PLA is planning and training.

- Some of the campaigns do not appear to represent operational situations the PLA is likely to face in the near to mid-term.

- PLA doctrinal change is evolutionary, and in the past slow. The available PLA sources on Army doctrine appear to show incremental change to date due to developing technologies such as artificial intelligence or research on operational methods exhibited in recent foreign conflicts such as the United States military operations in Iraq and Afghanistan.

This monograph examines current People's Liberation Army (PLA) Army campaign doctrine, with a discussion of PLA theorists' vision of the evolutionary development of warfare to provide context for current doctrine as well as potential future direction. The PLA develops doctrinal joint and service campaign scenarios for possible offensive and defensive operations. PLA campaigns represent the operational level of war between strategic operations and tactical combat. The PLA's current focus on specific campaigns provides insight into Beijing's perception of potential conflict scenarios. The campaign scenarios provide commanders and staff data on command and control, coordination, combat actions, support, and other critical campaign elements for specific operational environments. The description of each campaign's operational environment and combat actions provides valuable support to operational planning and a context for staff and unit training for their specific operational mission. The Army campaigns are executed as components of a joint campaign, or as a primarily independent Army campaign with support from other services.

Authors

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PLA ARMY CAMPAIGNS AND POTENTIAL CONFLICT AREAS

The *Science of Campaigns* published by the PLA's National Defense University (NDU) in 2006 highlighted four Army campaigns and a counterinsurgency operation as follows: maneuver campaign, mountain offensive campaign, positional offensive and defensive campaigns, and anti-terrorist stability operations.[1] The *Lectures on the Science of Army Campaigns* published by the Academy of Military Science (AMS) in 2013 is the most recent PLA publication on Army campaigns and provides an expanded examination of the total inventory of potential PLA Army campaigns. This book represents an authoritative doctrinal publication by the AMS which is responsible for developing PLA doctrine, and conducting research on military art, joint operations, and foreign militaries. This monograph examines all Army campaigns discussed in the AMS book. The AMS book also includes campaigns under special conditions that were not included in the *Science of Campaigns.*[2]

The 2006 *Science of Campaigns* list of PLA campaigns represents what the PLA considered the most likely Army campaigns to be conducted at that time. The anti-terrorist stability operation does not appear in the later AMS Army campaign book and has likely been dropped as the People's Armed Police has been reformed and further militarized to take primary responsibility for large-scale internal control and counterinsurgency operations. The AMS publication highlights the importance of maneuver, urban, and border counterattack campaigns. A 2014 publication by the former Nanjing Army Command College *Informationized Army Operations* examines landing assault and follow-on island combat, offensive operations against coastal islands, as well as border defense and counterattacks highlighting these as potential Army operations. Based on an examination of these PLA authoritative publications, the Army campaigns considered most likely in a future conflict include the following:[3]

- Landing campaign, and offensive operations against smaller islands
- Urban offensive and defensive campaigns
- Mountain offensive campaign
- Border defense and counterattack campaign
- High-altitude plateau campaign under special conditions

These campaigns suggest that the PLA Army expects to operate in two primary conflict scenarios. The landing, mountain offensive, urban offensive and defensive, and positional offensive campaigns are targeted at a Taiwan scenario, either an assault on Taiwan or Taiwan-held islands *(see Figure 1)* for a map of the People's Republic of China (PRC) and border areas, theater commands and Group Army locations). The border defense-counterattack campaign is focused on an Indian conflict scenario. Additionally, the border defense campaign could be intended for a Korean peninsula crisis scenario to seal the border against North Korean refugees as well as defend the Northern Theater's border region. The maneuver and positional campaigns are operations that could apply to either the Taiwan, Indian, or North Korean scenarios. The maneuver campaign, desert grassland, and mountain campaigns could apply to operations in Central Asia under the auspices of the Shanghai Cooperation Organization (SCO). The SCO Peace Mission series of exercises have focused on larger-scale counterinsurgency operations to maintain stability within Central Asia.
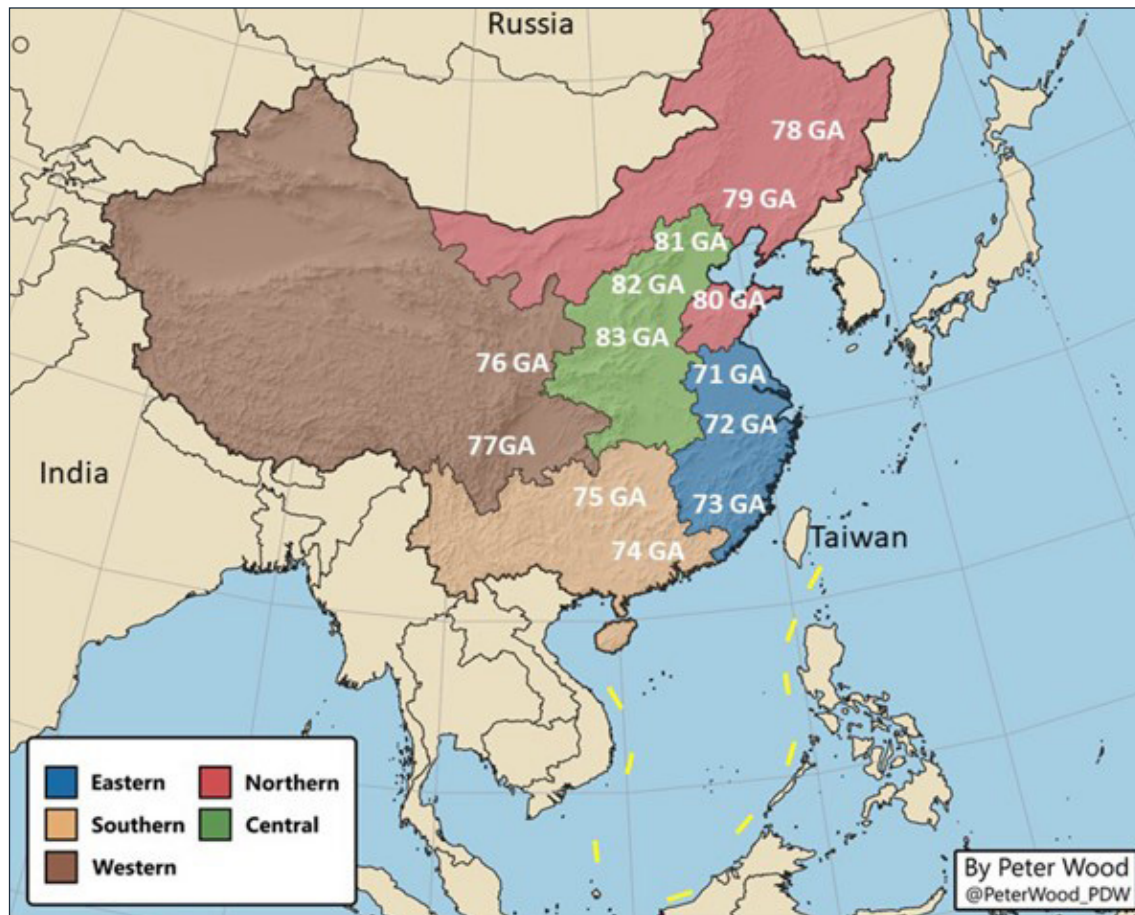
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Figure 1: Theater Commands and Group Armies (GA)
By Perter Wood @PeterWood_PDW

The following campaigns are analyzed by the PLA indicating they are considered possible campaign scenarios. However, they do not appear likely in the current strategic environment. These campaigns are discussed in the appendix of this paper. They include the following:

- Maneuver offensive and defensive campaigns: These could be employed during combat in Taiwan if Taiwan retains extensive military capabilities after the PLA establishes a landing base for the disembarkation of follow-on forces and logistics, although this scenario appears unlikely.

- Positional offensive and defensive campaigns: These campaigns also represent possible operations in Taiwan but appear unlikely.

- Anti-airborne campaign: this campaign does not appear to be likely at the campaign level but would be a consideration at the tactical level against an enemy with airborne or air assault capabilities.

- Coastal defensive campaign: this campaign appears unlikely at the campaign level but could be required at the tactical level. However, the PLA does maintain a fairly strong coastal defense force. The most relevant aspect is the coastal defense cruise missile force to protect the coastal waters.

- Desert Grassland Campaign: This campaign under special conditions could apply to

operations in Central Asia under the auspices of the SCO, although they would likely be at the tactical rather than campaign level.

- Tropical mountain and jungle offensive and defensive campaigns: These campaigns under special conditions would be most likely relevant to operations against the Socialist Republic of Vietnam, although the PLA has been demining the border area. Flash points with Vietnam are more likely in the maritime domain.

- River network offensive and defensive campaigns: These campaigns under special conditions appear most applicable to operations within China. River crossing operations at the tactical level apply to some degree to every campaign, but areas consisting of large river networks do not appear applicable to likely scenarios facing the PRC.

AREA OF OPERATIONS

The Army campaigns represent potential operations within the PRC or near its borders. The newer AMS publication frequently discusses support by local forces and the militia which would only occur within the PRC. The PLA would currently have difficulty transporting and supporting a Group Army far from its borders. PLA theorists are discussing force projection and expeditionary operations supported by expanding strategic delivery capabilities and the establishment of overseas naval and air bases. The PRC believes a force projection capability is required to safeguard Beijing's increasing global interests expressed in the "Going Out" [走出去] strategy and the Belt and Road Initiative (BRI). These expanding global interests require new military capabilities. The PLA currently lacks the logistics, strategic delivery,

overseas support facilities, and prepositioning required to transport and sustain the large force required to conduct an Army campaign. Some PLA sources have described current logistics problems supporting a peacekeeping battalion. Strategic delivery and logistically supporting overseas operations by a regiment or brigade-size force would currently stress PLA capabilities without foreign support. However, the PLA's strategic air transport and maritime delivery capabilities are increasing. Additionally, the continued expansion of overseas support bases combined with the future establishment of equipment prepositioning could support expeditionary forces of increasing size in the future. At that point, these Army campaigns could become applicable to overseas operations; especially the campaigns in special conditions that are comparable to foreign terrain and climate conditions where the PLA might be called upon to operate in support of the PRC's global interests.[4]

THE PLA'S CURRENT VIEW OF WARFARE

The *Science of Strategy* published by the NDU in 2017 states that wars will represent a "system of systems confrontation" [体系对抗]. The Science of Strategy published in 2020 also revises integrated joint operations to include multi-domain. The PLA envisions warfare conducted on the tangible and intangible battlefields. The tangible battlefield includes land, sea, air, space, and cognitive domains, while the intangible battlefield includes the electromagnetic spectrum, cyberspace, and psychological cognition. Cognitive domain operations consisting of both influence and kinetic operations have been a focus of recent PLA articles. Operations are characterized as highly dynamic, decentralized, with a blurring between front and

rear areas, and rapid transitions between offense and defense. Characteristics include non-contact, non-linear, and asymmetric operations.[5]

The PLA defines non-contact, non-linear, and asymmetric operations as follows:[6]

- **Non-contact:** Compared to contact operations, striking enemy weapons systems outside their effective counterattack range. This concept is based on an analysis of the North Atlantic Treaty Organization's Operation ALLIED FORCE.

- **Non-linear:** Compared to linear operations, the irregular deployment, and dispersion of forces throughout the depth of the battlefield with no fixed combat locations. This concept was developed by various militaries to mitigate the effects of precision munitions.

- **Asymmetric:** Compared to symmetric operations, the employment of forces, means, and methods against dissimilar opposing forces; and conducting cross-domain attacks. An example includes using the Air Force against enemy ground forces, launching a surprise attack, or outmaneuvering an enemy to gain an advantage. The PLA stresses that both symmetric and asymmetric operations should be employed. The PLA attributes the concept of asymmetric operations to the US military.

The PLA currently views warfare as multidimensional with forces dispersed across an expanded battlespace encompassing multi-domains. The distinctions between strategic operations, campaigns, and tactical combat become blurred as tactical actions can have a strategic effect. Operations are non-linear, synchronized, and conducted throughout the enemy's depth simultaneously. Forces are organized for specific operations and committed to combat according to the formation's mission and the operational phase. Modular units with plug-and-play capability allow the campaign or tactical formation to reorganize as needed to adapt to changing battlefield situations. An integrated command information system supports the command and coordination of dispersed forces and synchronizes multiple operations. Command posts will dynamically adjust tasks while controlling operational deviations from the operational plan to ensure objectives are achieved. Firepower and information warfare combine as key capabilities to destroy or paralyze enemy forces.[7]

Army campaigns in transition feature a mix of mechanized and informationized warfare. The Army campaigns examined in the *Lectures on the Science of Army Campaigns* are updated with elements of informationized warfare compared to the older *Science of Campaigns*. However, the campaign actions continue to reflect the characteristics of the mechanized warfare era. Army campaigns and campaign actions are reminiscent of the Soviet Deep Battle concept upgraded with informationized communications, modern reconnaissance, and precision strike systems that have been integrated into the force. This should not be surprising since the three-stage military modernization plan's goal for 2020 is a fully mechanized force with important progress incorporating information technologies.

The Army likely trails the other services in informationized modernization. Army operations still discuss breakthrough operations even though PLA doctrine emphasizes non-linear and non-contact operations. Campaign doctrine does call for specialized force groupings to move through gaps or rapidly overcome enemy weak points to develop the battle into the enemy's rear area. Deep

attack groups or deep thrust and detour combat groups exploit frontal operations to strike key targets in the enemy depth in coordination with special forces and airborne or air assault landings. There is greater reliance on precision firepower destruction and paralysis, information operations to seize information superiority, employment of vertical envelopment and special forces to attack key targets in the enemy rear area, informationized communications to control dispersed forces, and high-tech reconnaissance and surveillance equipment to provide situational awareness and targeting. The PLA believes that firepower support is a critical component of operations, and modern command systems, satellite positioning systems, and advanced reconnaissance systems can shorten the kill chain in what the PLA calls "detection equals destruction" [发现即摧毁].

The PLA is fielding an integrated command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR)—command information system in PLA parlance—providing greater situational awareness and a common operating picture to command posts down to the battalion level. The command information system includes a digitized battlefield situation map with layered information input from different intelligence and reconnaissance assets and includes databases and normative combat data to support planning. The digital map display includes basic geographic information, enemy and friendly force disposition, operational plan information, electronic environment, air, and maritime situation, as well as video feeds. Units can query the intelligence database for information. The PLA has also fielded aerial, ground, and maritime unmanned vehicles for reconnaissance, strike, electronic warfare, and communication into the force down to the tactical

level. The PLA routinely uses the Beidou satellite navigation system for location and positioning, as well as its communication capability during training and non-war operations The Beidou system achieved a global network in 2020.[8]

PLA Doctrine in Transition: The Impact of Technology and Characteristics of Future Warfare

An examination of the PLA's views on the evolution of warfare and future warfare provides a clearer understanding of where Army doctrine is currently as well as the future direction. The PLA views technology revolutions as the key driver for evolution in the patterns of warfare and operational methods. Mechanized warfare was enabled by the industrial era, transitioning into informationized warfare brought about by developments in information technologies. The PLA has been attempting to catch up with the world's advanced militaries since being surprised by the revolution in military affairs based on information technologies demonstrated during Operation DESERT STORM. PLA doctrine evolves albeit slowly. Although PLA academicians and theorists discuss the newest technological, force structure, and operational concepts, it can take several decades for the integration of these theories into official doctrine and operationalized into the force. Examples include the recent establishment of theater commands and combined arms battalions that were theoretically discussed by academicians for several decades before implementation.[9]

Emerging and disruptive technologies are important research areas for the PLA military. The PLA believes that a combination of technological developments and strategic requirements based on national security interests shape the evolutionary pattern of future warfare. Strategic

objectives determine the overall military capability requirements. Technology determines tactics as it drives fundamental changes in the form of warfare and engagement means. While the PLA continues to integrate information technologies into weapons and equipment and revises operational methods, theorists are examining what many believe is the next revolution in military affairs based on intelligent technologies. Informationized warfare represents a shift from kinetic-based warfare to warfare based on information systems and from the physical domain to the information and cognitive domains. The PLA believes that seizing information superiority has become a dominant factor in determining the outcome of operations. As warfare shifts from platform confrontation to system of systems confrontation, the command information system becomes critical in integrating service and branch forces, weapons, and equipment into an operational system of systems that will conduct hard and soft strikes on key nodes in the enemy's operational system of systems to gain victory. Combat is transitioning from large-scale operations to limited-scale precision operations supported by intelligent technologies. Precision operations include command, planning, strike, reconnaissance, maneuver, and logistics. The timely initiation of precision strikes on the opponent's key points can achieve initiative and control in combat and can decisively determine victory or defeat.[10]

Emerging and Disruptive Technologies

Warfare will continue to evolve based on emerging and disruptive technologies leading to a new revolution in military affairs. PLA theorists believe the current informationized warfare will incorporate intelligent technologies transitioning the digital battlefield into "intelligent warfare" [智能化战争]. Many new operational methods

discussed by PLA sources are acknowledged to have originated with the U.S. military such as drone swarm operations, multi-domain warfare, algorithmic warfare viewed as "intelligent + warfare," and concepts for the central employment of unmanned and autonomous systems. New disruptive technological innovations such as biotechnology, brain science, new manufacturing technologies, new materials, and new energy technologies are triggering revolutions in military affairs identified by PLA theorists as follows: the perception revolution is triggered by the internet of things; the computing revolution triggered by cloud computing; the predictive revolution initiated by big data; the communication revolution initiated by quantum technologies; the material revolution initiated by nanotechnology; the behavioral revolution triggered by artificial intelligent technology; and the strike revolution triggered by military aerospace, electromagnetic, directed energy, unmanned and autonomous combat systems, and smart ammunition developments. Warfare's method of confrontation will change from the current system of systems confrontation to an algorithmic competition with the side that best masters the advantages of algorithms achieving a cognitive advantage. The PLA believes the intelligent technologies will speed up decision-making by greatly improving the accuracy and timeliness of battlefield information by more precisely searching, identifying, and transmitting battlefield information to allow the location, identification, and monitoring of key targets, guiding strikes, and assessing the strikes' effect. The enhanced information sharing, situational awareness, and planning capabilities on the integrated battlefield will compress time and space. The kill chain will be shortened with "cloud" sharing of information and assisted decision-making to plan, launch and guide a strike.

The maturity and development of technologies such as big data, cloud computing, and quantum computing will speed up the decision-making cycle, as well as improve multi-domain linkage and synchronize multi-dimensional operations.[11]

Autonomous Operations: Humans vs. Technology

The PLA believes that unmanned operational systems in intelligent warfare will become deeply integrated with the manned system to form an organic symbiosis. The result will be a manned-unmanned operational system. The PLA believes that many factors decide victory or defeat and that weapons and technology are core factors in warfare. A key factor in intelligent warfare is the autonomy of unmanned systems. However, PLA theorists continue to believe that humans are the decisive factor determining victory or defeat. Intelligent weapons and systems will execute operational intentions and achieve operational objectives determined by humans. Humans will continue to plan, organize, and execute wars, deciding on the command and operational methods employed, assisted by intelligent technology.[12]

Hybrid Warfare

PLA theorists are analyzing "hybrid warfare" [混合战争] based on U.S. military writings on the subject, Hezbollah tactics during the 2006 Israel-Lebanon conflict, and Russian military operationalization of the concept in the annexation of Crimea and operations in Syria. The PLA views hybrid warfare as integrating and closely coordinating regular and irregular forces in the same combat space. Irregular forces become the main force assisted by regular units. The concept is not alien to the PRC. The PRC waged a victorious guerilla war transitioning to more conventional operations against the Nationalist forces and Japanese occupation. Strategic guidance [战略方针] remains People's War and the PLA integrates local, militia, and paramilitary forces into military operations. Maritime militia and paramilitary forces are employed in grey zone operations to harass other countries in the South China Sea. In the future, the PLA could copy the Russian employment of private military contractors to conduct operations supported by regular units. Chinese private security firms protect overseas enterprises. The employment of irregular forces can lower the cost of employing regular military units, and lower risks by providing plausible deniability. In operations abroad, irregular forces can include opposition political groups, tribal militias, mercenaries, or even terrorists, religious extremists, criminal gangs, and other violent groups. Hybrid warfare also incorporates the full spectrum application of military and non-military means to achieve a political goal. Political, economic, diplomatic, and other national means are employed comprehensively with military force to achieve victory. Combat styles are diverse and flexible on a hybrid battlefield including intense, high-tech regular combat, covert employment of special forces, modern guerilla warfare, cyber warfare, and psychological warfare. Hybrid warfare is based on achieving political objectives with minimal cost and risk while disintegrating the enemy from the inside out with the use of irregular forces acting as a fifth column. Cognitive warfare will attack the enemy's will to resist using public opinion, psychological, and legal warfare to confuse the enemy and disrupt the decision-making process. Hybrid warfare creates new, low-risk confrontational choices against major opponents.[13]

Potential Roadblock to Doctrinal Implementation: Cultivating Talent

PLA theorists are discussing new military revolutions and types of operations including intelligent warfare, algorithm warfare, and other novel forms of conflict. However, there are several systemic problems the PLA needs to resolve before advancing from its current hybrid mechanized and informationized warfare force to incorporate the next revolution in military affairs. Military education reforms have been stymied by corruption, obsolete courses, and teaching materials, as well as problems attracting and retaining quality professors to name a few problems. Reforms of military education to cultivate a cadre of quality military talent required to plan, organize, and lead a modernized force with innovative operational methods has been ongoing for over twenty years with serious problems unresolved. The PLA is continuing to play catch up addressing the need to educate officers on information technologies that could adversely impact incorporating the next RMA into the force.[14] Possibly related to difficulties in cultivating high-technology talent is the slow integration of operational and tactical innovation by the PLA.

CURRENT ARMY CAMPAIGN DOCTRINE

This section examines the full list of Army offensive, defensive and special condition campaigns discussed in the AMS publication. The PLA believes that future local wars will occur in the primary operational environments of large and medium cities, territorial waters, on islands, and oceans. Currently, Army campaigns will be conducted within the PRC or in regions along its periphery. Delivering and sustaining a Group Army or large force beyond regions near the PRC's borders currently are beyond the PRC's capabilities. As the PRC enhances its strategic delivery and logistics, expeditionary capabilities will increase to support growing global interests and security requirements.

Command, Intelligence, and Planning

Whether conducted as part of a joint campaign or a relatively independent campaign, the Army campaign is under the direction of an Army main command post. The Army's main command post would include staff attached from supporting services. The campaign command is centralized and would be subordinate to a theater command's joint operation command center.[15]

Army campaign command under informationized conditions has become complex with an increased span of control over widely dispersed forces. Diversified operations in a multi-dimensional non-linear space with frequent combat transitions place greater requirements on command and control. Command confrontation has become fierce with a focus on destroying or paralyzing the opponent's command information system utilizing electronic warfare, cyber warfare, or firepower destruction.[16]

Command Posts

The Army campaign command normally deploys main, alternate, rear, and forward or directional command posts. The main command post (CP) plans, coordinates, and controls the entire operation, and is located along the main operational direction. The alternate command post acts as a reserve CP to take command if the main CP is destroyed or needs to transfer to a new location. The forward CP is deployed in the

main operational direction to provide greater control over fast-paced operations and changing battlefield situations. The rear CP is mainly responsible for logistics and equipment support as well as rear area security. Subordinate units would deploy a similar command post structure. Some PLA theorists suggest that fewer CPs could be employed in future operations depending on the situation. Options discussed include establishing only a main CP; a main and rear CP; or a main, alternate, and rear CP.[17]

Command post organization is not uniform and depends on the situation. A command post contains multiple functional centers or departments to direct specific aspects of a campaign. These functional centers could include the following centers and departments: command and control center; intelligence center; communication center; information operations center, air defense operations center; special operations center; comprehensive support department; military affairs mobilization department; firepower coordination center; and political work department. The alternate and forward CPs would likely mirror the main CP's organization. The rear CP might contain a comprehensive plan and coordination department, a logistics and equipment support department, and a local supporting the front" department to coordinate logistics and equipment support with civilian organizations. A rear CP would have to be prepared to take control of an operation if the other CPs ceased functioning. The PLA's operational communication system is the command information system composed of the command and control, intelligence and reconnaissance, comprehensive support, and administrative sub-systems.[18]

Campaign Intelligence

Intelligence support is based in the command post's intelligence center at each echelon. The Central Military Commission's Strategic Support Force will provide strategic intelligence through the theater joint operation command center's intelligence center. The theater intelligence center provides support from theater assets to the Army command post and campaign formation. The Army command post's intelligence center will collect and process intelligence and reconnaissance from subordinate assets, neighboring units, and theater to disseminate as needed to subordinate units. As mentioned above, the battlefield situation map depicts available intelligence down to battalion level. A key intelligence development is the intelligence database units can query for required information. The status, capabilities, and functioning of this intelligence database system are unknown. In the intelligence process, the intelligence centers at each echelon collect, process, and disseminate information to subordinates. In addition, units can query the database for information required for operations.[19]

Campaign Plans

PLA sources are not consistent on the types of plans developed for a campaign. The chief of staff prepares the operational plan based on the commander's intent. The operational plan will delineate the campaign purpose, main operational direction, main objectives, division of campaign phases, force deployment, campaign actions, command organization, and main campaign actions. Alternate actions are evaluated using computer simulation, sand table, or map deduction if time allows. The operational plan also includes an operational action plan and support plan. The operational action plan delineates the overall operational actions and includes an operational
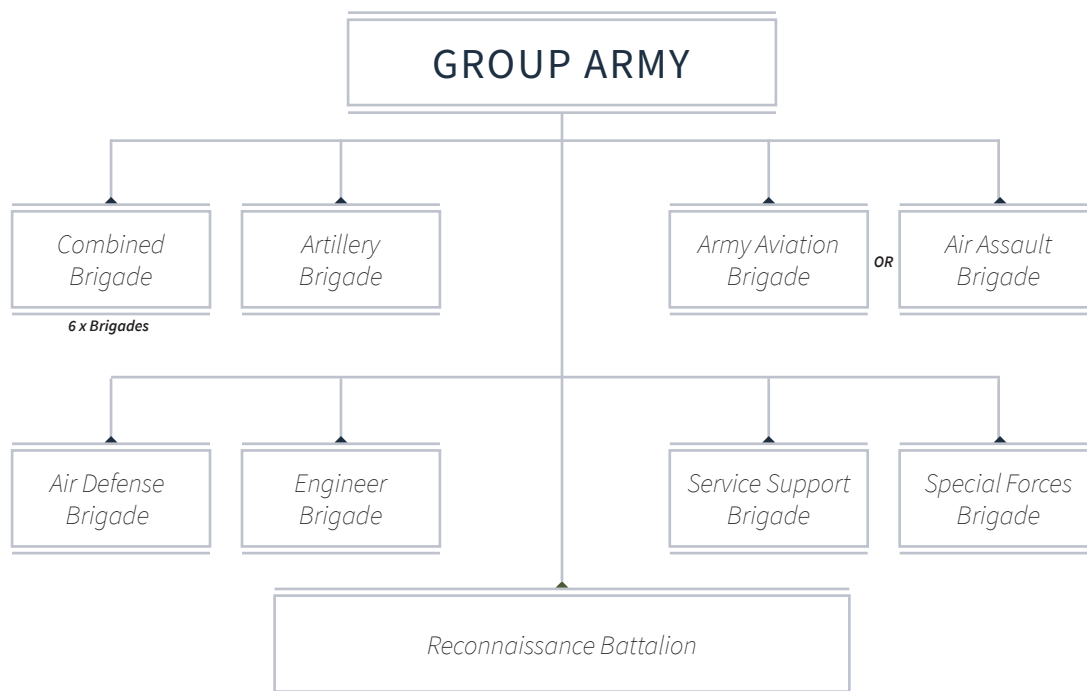
Figure 2: New Standarized Group Army Organization
Graphic by Kevin McCauley

action master plan, an operational action branch plan, and a coordination plan. Branch plans include reconnaissance, counter-surveillance, firepower, information operations, and rear area defense plans. The support plan includes operational, logistics, and equipment support. The coordination plan includes coordination procedures and methods between forces during operational stages, responses to possible enemy actions, coordination of support, and recovery measures if coordination is disrupted.[20]

CAMPAIGN FORCES AND ORGANIZATION

Army campaigns would be conducted by one or more Group Army with support from other services as required. Group Armies were reorganized in 2017 into a standard structure *(see Figure 2)*. The tactical force has reorganized into combined brigades and combined arms battalions. These brigades and battalions are organized as heavy (tracked armor vehicles), medium (wheeled armor vehicles), and light (high mobility wheeled vehicles) brigades and battalions with tanks, tracked and wheeled infantry fighting vehicles, and light vehicles providing mobility to the ground force. The PLA Army also has independent divisions, brigades, and regiments primarily in the Western Theater Command. Campaign forces would be task organized into one or more Army "campaign formations" [军团] which could include subordinate "tactical formations" [兵团] *(see Figure 3)*. A campaign or tactical formation is an integrated task force that contains various modular operational elements[21] such as command and control, maneuver, fire support, reconnaissance and intelligence, and comprehensive support to allow for independent operations. A campaign formation would be a group
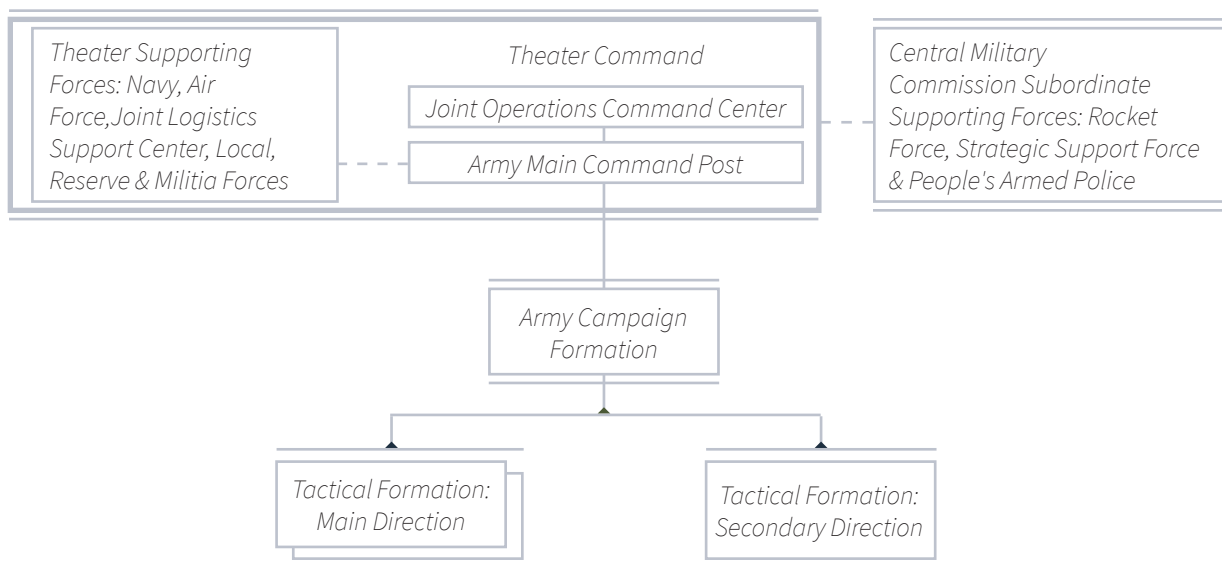
Figure 3: Notional Army Campaign Organization
Graphic by Kevin McCauley

army-size task force, while a tactical formation would be a division or multi-brigade size force depending on the operational requirements. Campaign and tactical formations represent "operational system of systems" [作战体系]. An operational system of systems is a joint or service integrated task force at the strategic, campaign, or tactical echelon capable of independent operations. The operational system of systems is part of the terminology the PLA has developed to explain "system of systems operations" [体系作战]. System of systems operations is the integrated command information system that will enable the PLA's transition to an integrated joint operations capability. The operational system of systems is composed of multiple "operational systems" [作战系统] that represent a single system type such as reconnaissance systems. In addition to the capability to conduct independent operations, a key characteristic of an operational system of systems is the ability to recombine modular components to optimally meet changing operational phases or new operational requirements. The PLA's system of systems operational theory was influenced by the US military's network-centric warfare and systems theory.[22]

Central Military Commission subordinate forces that will support an Army campaign include the Strategic Support Force and Rocket Force. The unique Strategic Support Force (SSF) was established in December 2015 consolidating strategic aerospace reconnaissance, warning, communication, navigation, and offensive and defensive information warfare assets to support all the services. Theater supporting units include Air Force, Navy (Northern, Eastern, and Southern Theater fleets), and Joint Logistic Support Forces assigned to the theater. In September 2016, the Joint Logistic Support Force (JLSF) was established under the CMC Logistic Support Department consisting of the Wuhan Joint Logistic Support Base with subordinate centers in each of the five theater commands. The JLSF provides logistics support to theater forces. Service logistics provide

specialized support to their units. Since logistics facilities are located within China apart from the Djibouti Support Base that supplies the Gulf of Aden anti-piracy escorts and peacekeeping forces. The Rocket Force remains under CMC command but provides firepower support to theater forces as needed. Rocket Force personnel are assigned to the theater commands to support planning and coordinate operations. SSF personnel are likely attached to each theater for coordination.[23]

Campaign Disposition

A Group Army or campaign formation's frontage and depth would be influenced by terrain and operational requirements. Typically, a Group Army would have a frontage as wide as 60 kilometers (km) and a depth of 65-70 km. The PHL-03 300mm Multiple Rocket Launcher (MRL) with a range estimated at 130-150 km is the longest-range artillery system in a Group Army. The Army Aviation brigade would establish a forward base approximately 40-60 km from the front lines, with standby areas designated at approximately 15-20 km from the front. Campaign tactical missile positions could be established approximately 65-70 km from the front to support the campaign formation. The campaign formation can include various tactical formations equivalent to a division or brigade in size and capabilities.

Tactical Groupings

The tactical formations would organize subordinate forces into various offensive functional tactical groupings and can include the following:[24]

- Forward attack group: main and secondary forward attack groups are formed to attack enemy forward defensive positions.

- Frontal attack groups: in mountain combat frontal attack groups are formed to attack enemy defensive positions in coordination with detour attack groups attacking the enemy's flanks and weak points.

- Deep attack group: responsible for conducting attacks on enemy in-depth defensive positions.

- Detour attack group: in mountain combat, this group attacks the enemy in-depth defensive positions in coordination with frontal attack groups.

- Deep thrust and detour combat group: responsible for attacking important enemy objectives in depth in coordination with the main forces attacking from the front

- Airborne/airlanding group: seize and control key points in the enemy depth or attack enemy units from the rear in coordination with main forces attacking from the front.

- Advance attack group: responsible for forward reconnaissance, expelling or annihilating enemy troops, cover, or screen enemy units, and seizing key points to create favorable conditions for main force operations.

- Storming attack group: responsible for attacking enemy fortified positions, strong points, defended buildings, or underground facilities.

- Assault landing group: responsible for attacking and occupying enemy coastal defensive positions; usually divided into the main direction and secondary direction assault landing groups.

- Barrier breaching and clearing detachment: responsible for opening passages and clearing obstacles.

- Raiding group: special operations groups to attack important enemy targets such as command posts, airports, ports, transportation

hubs, important weapon systems, and logistics sites.

Tactical defensive groups and areas include the following:[25]

- Forward defense group: Defense of forward positions and usually divided into a main direction defense group and a secondary direction defense group.

- Deep defense group: responsible for the defense of in-depth positions to counter enemy penetrations and encirclement operations.

- Mobile annihilation group: responsible for mobile attacks to wipe out enemy forces conducting penetrations or encirclements during defensive combat.

- Covering group: employed in defensive combat to block enemy reconnaissance, resist, or delay enemy advances, or force the enemy to deploy early.

- Reconnaissance and sabotage raid team: responsible for reconnaissance and raids during defensive combat to determine the enemy's offensive intentions, attack important enemy targets, or harass and delay an enemy's advance.

Other tactical groups in offensive or defensive combat include the following:[26]

- Anti-armor group: responsible for attacking enemy armor and fortified positions during offensive or defensive combat.

- Combat reserve unit: unit for mobile combat missions to respond to emergency and unexpected situations.

- Anti-airborne reserve unit: unit mainly composed of armor, mechanized infantry, infantry, artillery, air defense, and engineering forces to respond to enemy airborne or airmobile landings.

Campaign Actions

Army campaigns include important actions whether offensive, defensive, or under special conditions. These include the army campaign formation's maneuver to the operational area, information operations, special operations, and air defense operations. Considering the importance attributed by the PLA to firepower for the success of operations, it is surprising it is not included. A brief discussion of campaign firepower support is added to the PLA list of campaign actions.

Campaign Firepower

The campaign firepower plan will include layered employment of artillery, rocket, conventional missiles, unmanned aerial vehicles (UAV), and aircraft. The Group Armies contain artillery brigades whose major artillery and rocket systems include 122 mm and 155 mm howitzers, and PHL-03 300 mm MRL. Conventional missiles would support Army campaigns striking targets in the deep rear area of the enemy. These missiles and ground-launched cruise missiles are controlled by the Rocket Force. The Air Force provides attacks against ground targets. Usually, a specified number of sorties are assigned to a ground unit. Target guidance teams or special operations teams provide strike guidance. Service liaisons are attached to firepower coordination centers in command posts during operations.

Campaign Maneuver

The campaign formation's maneuver to the operational area is conducted during the preparatory stage of a campaign to the area where the campaign is launched. Command and control of maneuvering forces are complex

and rely on mobile command posts. The Beidou satellite navigation system allows command posts to track unit locations in real-time, and the communications capability provides secure communications during movement that is employed extensively by PLA units. The main command post closely monitors the situation and provides timely updates to subordinate units on enemy activity and reconnaissance, the battlefield environment, and guidance on adjusting routes. Movement is conducted under threat of enemy reconnaissance and during combat under threat of enemy long and medium-range precision strikes. Denial and deception, air cover, and air defense are important force protection methods on the modern battlefield. Warfare under informationized conditions has accelerated operational tempo and shortened operational processes forcing rapid response times during movement to the combat area. The mechanization of the PLA ground forces supports increased mobility. The delivery of forces can employ multiple means such as road, rail, air, and waterways. China's infrastructure and transportation modernization support force deployment as part of civil-military integration programs.[27]

Long-range delivery of forces is increasingly important, in particular, to support expeditionary operations. The PLA Air Force and Navy's long-range transportation capabilities currently are limited although growing. Reliance on civilian shipping and airlines are important means for PLA expeditionary force deployment and sustainment. However, the PLA currently considers civilian capabilities as inadequate. Civil-military integration and the 2017 National Defense Transportation Law provide for the mobilization of civilian assets and integration of military requirements into the construction of civilian transportation infrastructure. The ability to move forces and supplies will continue to expand based on military modernizations and civilian integration of military requirements into transportation systems.[28]

Information Operations

Information defense and offense are important to protect friendly information capabilities and suppress, destroy, or infiltrate the enemy's information systems. Seizing and maintaining information superiority is critical to a successful campaign. Information operations in wartime represents the continuation of peacetime information operations. Information reconnaissance in peacetime identifies the technical parameters of the enemy information system critical to support wartime information operations. Targets in the operational area are selected in peacetime. Specialized and non-specialized military and civilian forces are employed, although army campaign formations include limited specialized information operations forces, and must rely on non-specialized forces or superior headquarters for support. The Strategic Support Force can provide strategic information warfare and reconnaissance support. Forces are concentrated along the main operational direction to conduct decisive offensive actions against key enemy systems and sub-systems. Cyber, electronic warfare, and firepower strikes are the primary components of information operations. Hard destruction and soft kill are combined to attack the enemy's information system.[29]

Key areas that require protection include Army command posts, communications hubs, relay stations, satellite ground stations, and battlefield computer local area network (LAN) nodes for example. Facilities require camouflage, concealment, and engineering protection.

Electromagnetic spectrum management and control are employed to thwart enemy detection and ensure friendly communications. Information feints are employed to deceive enemy reconnaissance and protect important facilities.[30]

Operational information reconnaissance includes electronic countermeasure reconnaissance and network warfare reconnaissance. Methods include radio technical reconnaissance using various means to discover the composition, configuration, key target locations, and technical parameters of the equipment and facilities of the enemy information system. Radar reconnaissance is employed to intercept electromagnetic signals radiated by enemy radar and determine their position. Network reconnaissance identifies the characteristics and vulnerabilities of enemy network systems.[31]

Information attack is employed to suppress, destroy, or penetrate enemy information systems. At key operational junctures electronic warfare forces conduct electronic interference to deceive the enemy or conduct feints with false electromagnetic signals to lead the enemy to a false analysis of the battlefield situation. Computer network attacks adopt various technical means to control or destroy the enemy's computer network. Computer network intrusion includes obtaining, modifying, or destroying information on the enemy's computer network systems. Computer virus attacks place viruses on enemy computers for activation when required. Physical destruction of enemy information systems includes anti-radiation weapons and electromagnetic pulse weapons, as well as the employment of firepower strikes and special operations forces.[32]

Information defense includes anti-electronic interference, protection of friendly computer systems, and protection from physical destruction. Cyber security software, intrusion detection, and electromagnetic shielding are some of the methods to defend against enemy attacks.[33]

Special Operations

Each group army contains a special operations brigade to provide reconnaissance and conduct direct action against key enemy targets. The PLA believes that special operations forces can have significant impacts on the battlefield when employed in the main operational direction and at a key point in the operation. Special forces conduct operations that other forces cannot accomplish. Reconnaissance is the primary mission, but other actions are emphasized to include guiding fire strikes including by aircraft or helicopters, attacking key objectives, and rescue operations. Special forces brigades field unmanned aerial vehicles for reconnaissance or strikes.[34]

Special forces infiltrate the enemy rear through multiple means. Air delivery includes transport aircraft, helicopters, or autogyros. Teams can be delivered by ships, fishing boats, or submarines. Special forces can also infiltrate by foot or using light all-terrain vehicles.[35]

Special reconnaissance is conducted against key enemy targets that other assets cannot monitor. Reconnaissance teams employ the special intelligence report transmission network or the emergency communication network to provide timely transmission of critical intelligence. Special forces provide guidance to long-range precision strikes by aircraft or other fire support means. The guiding unit employs advanced observation, calculation, and communication equipment to transmit precise location of the enemy target and the frequency of the target's electronic equipment. The targeting team can also employ

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smoke, illumination, laser designation, or other markers to identify the target. The targeting team will maintain observation and provide updates on the target until the strike. The special forces team will also provide battle damage assessments after the strike. Direct action includes attacking, harassing, or seizing key targets. These missions include placing mines or obstacles at key targets such as airports, ports, or transportation hubs. Special forces employ electronic countermeasures to disrupt enemy communications in the rear area; conduct psychological harassment against enemy forces; and rescue and evacuate personnel or prisoners from the enemy rear area.[36]

Air Defense

The PLA considers the modern air threat more seriously than ever before. Air defense operations include organizing air reconnaissance and protection against enemy air raids to support force deployment, protect important objectives, and campaign operations. The PLA believes that its long-range systems such as campaign tactical missiles, multiple rocket launchers, and attack helicopters are insufficient to conduct strikes against enemy air assets and that the capabilities of enemy air forces have increased in range and lethality, placing the campaign's air defense operations in a passive mode. Enemy electronic countermeasures and other suppression of air defenses before air strikes will further complicate air defense operations and early warning capabilities of the campaign formation. Campaign air defenses will focus on protecting command posts, artillery groups, concentrations of forces, transportation hubs, and important rear area facilities. During operations within the PRC, civil air defense units will support the campaign formation. Aerial obstacles such as balloons or cables are set up in likely air corridors to defend

against low-altitude penetrations. Denial and deception are important components for force protection as well as consuming enemy weapons systems against decoy targets.[37]

OFFENSIVE CAMPAIGNS

An Army campaign formation will plan operational objectives, direction, timing, and attack methods to impose its will on the enemy and achieve campaign or even strategic objectives. Information and firepower attacks combined with encirclements are the main operations to annihilate enemy forces. These operations are conducted by the centralized employment of new-type operational forces equipped with high-tech weapons and equipment. Depending on the PLA source, new type operational forces include electronic warfare, special operations, army aviation, cyber warfare, and space forces. Ground assaults are dominated by armor units acting in coordination with Army aviation forces. The objective of combat is to annihilate the enemy's effective strength and paralyze the operational system of systems by attacking key nodes. The PLA believes that future campaigns could include the use of nuclear weapons, and thus campaigns are considered conventional operations under the threat of nuclear employment.[38]

Basic operational methods are dependent on the development of science and technology affecting weapons and equipment development, combined with the geographical environment. Different historical periods have different campaign styles and operational methods. Modern campaigns under informationized conditions are characterized by full-dimensional operations, maneuver, and the concentration of quantity and quality aimed at annihilating and paralyzing the enemy's

operational system of systems. The flexible employment of multi-dimensional encirclement, deep thrusts to destroy the enemy's cohesion, and combinations of hard and soft kills are designed to capture key areas or objectives and destroy the enemy's will to resist.[39]

Offensive Campaign Preparation

The offensive campaign under informationized conditions is complex, with high requirements for timely campaign preparation. Peacetime reconnaissance and intelligence are critical to commanders and their staff to ensure accurate knowledge of the battlefield environment and enemy situation. Important preparation requirements include planning coordination of forces and phases of the campaign, ensuring subordinate commands understand the campaign plan and are fully prepared, and establishing an informationized command structure to ensure command efficiency.[40]

Offensive campaign formations will establish a command structure composed of a main, forward, and rear command post with a clear delineation of responsibilities. An alternate command post can be established to ensure stable and uninterrupted command. Coordination teams are established and usually located in the main command post to ensure coordination with subordinates and other forces such as neighboring forces or supporting services.[41]

A main task is to correctly understand the superior headquarters' operational intent, understand the campaign formation's mission as well as the missions and cooperative relationship with neighboring forces. The campaign staff analyzes and assesses the enemy situation, topography, meteorology, hydrology, and other factors that could impact the campaign. The campaign

commander must also listen to reports and recommendations from subordinate commanders, logistical and technical support personnel, and in particular his chief-of-staff. The chief-of-staff is probably the most important staff position in the PLA command system with multiple responsibilities. Key factors to analyze are the military and political qualities of friendly troops, the quantity and technical status of weapons and equipment, the assessment of the capability to accomplish operational missions, and coordination problems that need to be resolved by superior headquarters. If possible, terrain surveys of critical areas should be conducted.[42]

Determining the campaign guidelines includes planning and preparing the main campaign actions, the basic means, and methods to achieve objectives, campaign directions, the key area for annihilating the enemy, main campaign actions and use of forces, campaign phases, and the changing operational requirements during transitions to new phases, and timing of launching the campaign. Seizing information and air superiority are key campaign objectives. The main campaign direction is determined by the superior headquarters based on the operational environment and campaign objectives. The main operational direction can change as requirements change due to the situation or transitions in campaign phases. Use of force is usually dependent on striking weak enemy forces first, and later dealing with strong formations. Key enemy targets for strikes are determined based on destroying the enemy's overall operational system of systems. These key targets are command and control systems, operational support systems, logistics, and other targets that will disrupt and collapse the enemy's structure and combat effectiveness. When strong enemy forces must be

engaged, destroying key targets in their formation are critical to achieving operational success.[43]

Force deployment is carefully planned based on the situation. Forces can be based on groups, echelons, or a combination. Currently, The PLA appears to prefer employing functional groups during offensive operations. In general, the deployment of forces should be flexible and capable of reconfiguration as required. Campaign deployment should be concealed, in-depth, multi-dimensional, and capable of adapting to changing situations.[44]

Offensive Campaign Planning and Coordination

Based on the superior headquarters' operational intent, the campaign commander makes decisions on the offensive campaign and instructs his chief-of-staff to prepare the offensive campaign plan. This mainly includes the operational plan, the political work plan, and the rear work plan. The operational plan is the core of the offensive campaign plan and is the focus of the chief-of-staff. Based on the superior headquarters' intent, the operational plan formulates the main direction, stages, campaign formation missions, coordination with neighboring forces, and unit boundaries. Firepower preparation and support are planned to include the employment of special weapons. Special weapons are not further defined but an examination of the PLA's use of the term can include weapons of mass destruction.[45]

Political and rear area work are important components of the offensive campaign plan. The political, logistics, and technical departments formulate their respective multi-faceted support plans. The PLA believes that future informationized warfare will be intense with high levels of destruction and consumption leading to complex support requirements. Political work is responsible for ideological work, unity, and loyalty within the military with an emphasis on building morale, and actions to erode enemy morale employing the "three warfares:" psychological, public opinion, and legal warfare. Wartime political work also includes ensuring security and the implantation of orders and intentions of superior headquarters.[46]

The operational plan attempts to analyze and project possible developments and changes that could occur during the campaign. The plan must be flexible with multiple potential courses of action planned. The plan should be concise, outlining the general campaign actions to allow for adjustments or change in reaction to dynamic situations.[47]

Offensive campaign coordination is based on instructions by the superior headquarters, the operational plan, and campaign phases to enable the subordinate tactical formations to conduct the main actions in a coordinated manner at the planned time and place to ensure success. Coordination is planned between the various campaign and tactical formations, groups, and services within a campaign, as well as neighboring forces. Coordination includes planning communication and liaison methods for different tasks, times, and areas. Coordination instructions are concise and precise. If unforeseen situations disrupt the coordination plan during the campaign, new coordination instructions are rapidly issued to all forces to ensure successful operational progress.[48]

Advance Operational Actions

Advance operational actions prepare for the smooth implementation of the campaign. Force protection measures include guarding against sudden attacks, air strikes, firepower assaults

as well as conducting counter-reconnaissance while deploying and assembling forces. Actions to compete with the enemy for initiative include conducting extensive reconnaissance, engineering mobility and counter-mobility support, special operations, and firepower preparation. Actions to seize electromagnetic and air superiority are critical during this phase.[49]

Offensive Campaign Implementation

The initiation of the campaign should be concealed, sudden, and proactive. The campaign formation can initiate the offensive campaign from the march, after temporary occupation of a departure area, or from a state of confrontation. Information warfare, firepower strikes, and special operations are early actions to seize information and air superiority striking key targets to disrupt the enemy defenses.[50]

Initial campaign actions include penetration of the enemy's defenses, deep thrusts, breaking up the enemy's defensive system, bypassing strong points, enveloping, and annihilating important targets, repulsing, and smashing enemy counterattacks, resisting, and supporting actions, annihilating encircled enemy forces, and pursuing retreating forces.[51]

Information warfare includes information reconnaissance by various means to identify the battlefield situation, enemy intentions, terrain, communications, reconnaissance, electronic warfare, and other key systems. Information reconnaissance can identify the enemy's command structure, campaign tactical missile positions, air defense and artillery positions, support and transportation hubs, heavy enemy groupings, and other key targets. Information attack includes psychological warfare, tactical deception, electronic warfare, direct action, and other means to prevent the enemy from accessing and using information. Psychological warfare can include propaganda, deception, and deterrence to influence the enemy's morale and will to fight. Tactical deception can confuse or deceive the enemy using information countermeasures to ensure successful operations. Electronic warfare includes electronic interference, deception and feints, and protection. Electronic jamming is conducted against enemy sensors, guidance systems, and communications. Electronic deception and feints include actions to confuse the enemy and conceal friendly intentions by providing false information, establishing false targets and signals, and conducting reconnaissance to mislead the enemy while controlling friendly electronic emissions. Direct attacks are hard kills against enemy targets through electronic attack, firepower strikes, anti-radiation missiles, nuclear electromagnetic pulse or directed energy weapons.[52]

Air defense actions are intended to defend the campaign formation and ensure air domain initiative. Air defense includes repulsing enemy strikes, conducting counterattacks, and protective measures. Repulsing enemy air strikes is based on thorough reconnaissance to forecast enemy intentions, main attack direction and targets, and timing of strikes. Counterattacks against enemy air offensive formations initially target enemy electronic jamming, early warning, and aerial refueling aircraft. Friendly air and air defense forces organize to intercept enemy air formations as early and forward as possible using a layered structure and with continuous attacks. Interceptor aircraft form an initial defensive layer, with integrated air defense missiles and artillery barriers based on range and capabilities to the rear. Army aviation is also employed to conduct concealed attacks on the flanks of enemy air

corridors and against the rear of enemy air formations. A system of air obstacles can also be established over or near important targets to block enemy aircraft or even destroy them. Counter attacks are intended to seize favorable battlefield opportunities to fight against the enemy's air strikes and seize air superiority. Army aviation, campaign tactical missiles, long-range artillery, and forces operating in the enemy's rear area are employed to attack air bases, weapons storage, command and control, and other key targets. Protection includes maneuvering forces and weapons to avoid strikes, concealment, camouflage, creating false targets, and electronic interference to enhance force protection. Rapid battlefield repair can effectively eliminate the effects of enemy air strikes.[53]

Joint firepower strikes are conducted by artillery, campaign tactical missiles, aircraft and helicopters, armored vehicles, and infantry weapons. Firepower assets integrate fires against key enemy targets including command centers, communication hubs, electronic warfare units, transportation hubs, fire support, ground air defense, logistics, heavy ground forces, and other objectives near the front lines as well as deep in the enemy rear.[54]

Campaign Termination

The campaign commander decides on ending a campaign based on the superior headquarters' intent and the battlefield situation. The decision is determined by achieving the campaign objectives or when the battlefield situation has changed fundamentally to one's disadvantage. In some situations where the original campaign's objectives have been achieved, battlefield opportunities can result in new operational objectives assigned by the superior headquarters. Ending an offensive campaign can lead to a transition to defensive

operations to consolidate campaign objectives. The termination of a campaign can also result in withdrawing forces from the battlefield in a planned and organized manner to designated areas. [55]

DEFENSIVE CAMPAIGNS

Defensive campaigns can include offensive operations as part of an offense-defense by the campaign formation. Defensive campaigns are intended to preserve forces, destroy, and defeat the enemy, gain time, protect regions, or create conditions for conducting counterattacks and transitioning to offensive operations. In local wars under informationized conditions Army campaign formations usually conduct defensive campaigns as a component of a joint campaign formation, but sometimes independently.[56]

Defensive campaigns are relatively passive compared to offensive campaigns with the attacking enemy determining the main operational direction and timing of the campaign. Defensive force mobility and operational area are usually limited. Even maneuver or mobile defensive campaigns are restricted to a designated operational area. The defensive area is selected by the superior headquarters based on the assessment of the direction of the enemy's main attack and cannot be vacated by the defending campaign formation. Defensive deployments, fortifications and obstacles, firepower distribution, and support forces are determined based on the enemy and terrain. When defending forces conduct offensive actions, they are limited in scope and range. Favorable terrain is used to improve the defensive system and protect forces. Defensive areas are chosen to cover important strategic directions, stabilize the war situation, thwart the enemy's offensive

momentum, and safeguard important political, economic, military and transportation centers. The defensive deployment should allow for protecting and cooperating with campaign reserves and maneuver groups in launching attacks against the enemy.[57]

The PLA notes new features to defensive campaigns based on the rapid development of science and technology with its application to improving weapons and equipment. Specifically, the PLA believes that intelligence and reconnaissance, command and control, firepower assault, battlefield maneuver, and various support capabilities have significantly improved. An active defense remains a valid guiding principle. While defensive operations are relatively passive, offensive actions are required to disrupt an enemy's offensive and create conditions for a transition to a counterattack to regain the initiative. Defensive campaigns will be conducted in a full-depth multi-dimensional battlespace opposing enemy omni-directional attacks on multiple defensive key points. Defensive operations must cope with an enemy's long-range weapons and deep attack forces to ensure the stability of the defensive system of systems. The campaign formation will need to establish an extensive, deep, and all-round defensive system that will enable offensive actions against an enemy's attack. The defensive forces will strike the enemy's forces prior to their launching an attack as they move forward or occupy assembly areas. Fire strikes, electronic warfare, and operations in the enemy rear area are critical to disrupting enemy operations.[58]

The defensive system will feature defensive areas and lines in the main defensive direction with obstacles and mines, concentration of electronic warfare units, and comprehensive protection with camouflage, concealment, fortifications, and use of favorable terrain. Campaign formations will organize effective counterattacks emphasizing air forces, campaign tactical missiles, long-range artillery, and special forces to attack the enemy's firepower capability. Coordination of services and branches is critical, and adjustments to the tasks and actions of various operations groups should be made to meet changes to the situation during combat. [59]

Defensive Campaign Command, Planning, and Coordination

The PLA assesses that the campaign formation's command faces new problems including analyzing enormous amounts of information, responding to complex and changing battlefield situations, and providing force protection on a dynamic battlefield. The campaign formation will usually establish a main, alternate, and rear command post in preparation for the campaign.[60]

The campaign intention formulated by the superior headquarters establishes the strategic purpose of the campaign, missions, use of forces and basic actions, terrain considerations, and enemy situation. The campaign determination establishes the main defensive direction and key points, defensive deployment, establishment and positions of command posts, and time limit for defensive preparation. The campaign commander can also dispatch inspection teams to ensure the campaign preparations of subordinates are implemented according to instructions as well as discover and resolve problems before the initiation of the campaign.[61]

The commander of the campaign formation establishes a campaign resolution that includes analysis and judgment of the situation and the campaign actions to include understanding the superior headquarters' intentions, missions

and tasks, the missions and boundaries with neighboring units, and coordination methods. Pre-battle training on similar terrain or simulations can support campaign planning and operational preparations. The campaign formation commander listens to reports and suggestions from his staff to accurately assess the situation and make determinations. If the situation is not clear an advance determination can be made, and a final decision issued when the situation clarifies. Modifications can be issued during the campaign if changing situations require revisions to the operational plan. However, the PLA stresses following the original operational plan unless forced to make changes.[62]

Defensive campaign plans include the operational plan, operational support plan, political work plan, and comprehensive support plan. The campaign commander provides instructions based on superior headquarters' intent to his chief-of-staff who formulates the plans aided by the command post staff. The operational plan provides direction for the campaign stages, direction of operations, missions, operational environment and describes the assessed operational characteristics of the enemy. It includes the expected actions the campaign formation will execute including advance strikes against the enemy, countering enemy assaults, breakthroughs, encirclements, anti-airborne response, and ending the campaign.[63]

Coordination methods are planned for the duration of the campaign to ensure all participating forces act in accordance with the unified plan. Coordination instructions are issued in conjunction with the operational orders. Coordination between the various operations groups is based on the main force according to missions, objectives, time, and location. Coordination includes the use of special weapons if required (not further described but likely refers to weapons of mass destruction).[64]

Defensive Campaign Support

Campaign support includes operational, logistics, equipment, and political work supporting actions. Reconnaissance, counter-reconnaissance, and force protection are considered important missions. Engineering support for defensive campaigns is especially important in preparing defensive fortifications and camouflage for the campaign formation's command posts, assembly areas, artillery, air defense, campaign tactical missiles, and major force groupings. Engineering forces make full use of favorable terrain for protection and concealment. Engineering work is prioritized to ensure the most important projects are completed on time. Engineers prepare forces and materials in reserve to ensure the rapid repair and restoration of damaged and destroyed facilities.[65]

Defensive Campaign Preparation

The defensive system of systems is established as an organic whole comprising campaign deployment, formation of defensive positions and obstacles, and a firepower system. The defensive system should proceed from the campaign formation's organization and capabilities, main tactics, the enemy's likely offensive actions, and the geographic environment. The defenses are required to be multi-dimensional, flexible, diverse, with strong concealment and survivability, and capable of supporting maneuver and offensive actions to defeat the enemy's omni-directional assault.[66]

Defensive Deployment and Formations

The campaign deployment or layout is based on the missions and configuration of the campaign formation that gives full play to the overall combat power of the various services and arms. Sufficient

forces are required on the main defensive direction and main defensive campaign area to achieve the necessary force density to survive the enemy's firepower strikes and defeat the offensive. The PLA describes two forms of campaign deployment under modern conditions or employment of a combination of the two deployment types: group deployment or echelon deployment. A combination of the two deployment types can be used, with one method employed in one direction and the other deployment method in a secondary direction depending on terrain and operational requirements.[67]

The campaign formation can establish subordinate operations groups to conduct specific defensive and offensive tasks. The PLA believes the establishment of groups is more flexible, provides for greater mobility, and conducive to combining defensive and offensive actions. Group deployment is also suitable for large, complex terrain areas; organizing defense over a broad front; or defending a key area independently. Operations groups can include maneuver, cover, enemy rear area, special, ground firepower, air defense, campaign rear area, electronic countermeasures, and other operations groups as required.[68]

Echelon deployment is usually organized for employment in defensive zones with a layered defense in-depth configuration providing for a resilient defensive system. This deployment is suitable for establishing defensive zones with great depth. A mixed echelon and group deployment can be employed with a first and second echelon, campaign reserve, cover operations group, enemy rear area operations group, special operations group, ground firepower group, air defense firepower group as well as electronic countermeasures group, and various branch reserve groups. When the defensive depth is extensive a third echelon can be formed.[69]

The defensive system is based on several operational areas, including the enemy rear area, cover sabotage, main defensive, and campaign rear operational zones. A larger-scale defensive campaign on a theater or multi-group army scale usually establishes these four operational zones. A positional defensive campaign is usually divided into three operational zones: a cover sabotage, main, and campaign rear area. An urban defensive campaign generally establishes a periphery defense zone and an urban defense zone. An Army campaign formation conducting a maneuver defensive campaign establishes a harassment and cover zone, an impedance operational zone, a predetermined anti-assault zone, and a rear defense zone. [70]

Irregular operations and firepower strikes are conducted against important enemy targets in the enemy rear area operational zone. Targets include logistics bases, missile launch sites, command systems, and heavy force groupings. Attacks are intended to disrupt, delay, and attrite enemy forces thereby weakening the overall combat capability and derailing enemy plans. When the PLA is conducting operations within the PRC, areas have been chosen and developed during peacetime to prepare the battlefield for guerrilla operations with concealed weapons, supplies, and fortifications.[71]

A campaign formation may establish a cover sabotage zone near the front of the main defensive area. The area is occupied by irregular forces to ambush, block, attrite and delay the enemy to cover and cooperate with main forces. One to two cover sabotage operational areas can be established for large and medium defensive campaigns based on the situation.[72]

The establishment of the main defensive operational zone can take two forms: A regional position is formed when the main defensive area's terrain is complex, has a wide front, or the defense is based on an urban area. The main defensive area is divided into several defensive zones of varied sizes based on a transportation axis and taking advantage of terrain. The defensive zones can include a frontline defensive group and a deep defensive group to defend important objectives and control the main attack direction. The defensive zones include blocking, ambush, mobile enemy annihilation, anti-tank, anti-airborne, and troop sheltering positions as well as areas controlled by firepower and obstacles. Depending on the terrain a regional position is usually defended by a division-size force or brigade.[73]

The other form of a main defensive operational zone is a belt-type position. This method was widely employed in the past but can still be used. The main defensive operational area is divided into 2-3 defensive lines (zones) from the front to the rear, with each defensive line divided into 2-3 defensive zones (positions) to form a multi-zonal multi-position defensive system of systems. Additional defensive positions can be placed between the main defensive zones and positions to prevent the enemy from developing an offensive into the depth or support offensive actions by friendly forces. Flank positions are established to prevent enemy attempts to envelop or turn the defenses. Multi-level anti-tank forces are deployed along likely routes of enemy armor assaults and anti-airborne defenses are set up in likely drop zones.[74]

The campaign rear area operational zone is occupied by logistics, campaign tactical missile launch positions, and bases, aviation forces, units conducting training, or rear security forces. Campaign reserve forces can be deployed in this area to cover logistics units, conduct rear area operations, or reinforce forces in the main defensive operational area. The campaign rear area includes anti-tank and anti-airborne.[75]

Firepower System

The firepower deployment system is an important means to destroy significant numbers of enemy forces, maintain the stability of the defensive system, and achieve victory. The campaign formation deploys artillery, campaign tactical missiles, aviation, attack helicopters, and air defense forces based on missions, topography, system performance, and enemy operational characteristics. A full-depth, layered, multi-directional, and multi-dimensional firepower system integrated with obstacles is established to combat the enemy's ground, air, and maritime strikes focusing on enemy attack helicopters, cruise missiles, and stealth aircraft.[76]

Firepower is usually deployed in the four operational zones as described above. Campaign tactical missiles and air forces units provide support to irregular and special forces operating in the enemy rear operational zone. Long-range artillery, campaign tactical missiles, air forces, and attack helicopters support friendly forces in the cover sabotage operational zone by attacking enemy forces entering standby areas, preparing, or deploying to launch attacks. The campaign formation's main firepower forces support the main defensive operational zone to stop the enemy's breakthrough operations and flank attacks as well as support friendly mobile groups. Firepower to support the campaign rear area operational zone conducts strikes against enemy airborne operations, mobile groups, or penetrating forces into the friendly rear area.[77]

Air defense and fighter aviation form a counter-air operational firepower system. Civil air defense forces support operations within the PRC. The ground air defense and aviation fighters provide regional cover supplemented by mobile cover to form an integrated air defense system network to seize and maintain air superiority over the defensive area.[78]

Obstacle System

An effective layered obstacle system using advantageous terrain can cover defensive positions, improve firepower effectiveness, isolate, or restrict enemy movement, destroy enemy armor, and enhance the stability of the defensive system. The obstacle system for a positional defensive campaign poses high organizational and engineering requirements and should be established as far in advance as possible. Obstacle systems can incorporate urban areas and explosive barriers integrating defensive regions and firepower.[79]

Specific obstacle systems are established to support each defensive operational zone. Unconventional forces can set up obstacles in the enemy rear area and cover sabotage operational zones. Obstacles in the main defensive operational zone support the defensive lines, zones and positions, front, flanks, intervals between positions, and key areas. The rear command post is responsible for establishing the obstacle system in the campaign rear area operational zone to protect key facilities, logistics sites, and key campaign areas. In coastal defense campaigns obstacles are set up on land, beaches, and in the coastal waters at possible enemy landing sites, and airborne landing zones. Obstacle emplacement forces are established to rapidly set up obstacles in the event of unforeseen situations and defend threatened areas.[80]

CAMPAIGNS UNDER SPECIAL CONDITIONS

Campaigns under special conditions are implemented in areas with special terrain or weather conditions requiring modifications to combat and support operations. The PRC and its periphery contain the environmental conditions discussed by the PLA as special conditions. As the PLA increases strategic delivery and support capabilities for missions abroad these special combat conditions can provide the basis for planning and training for expeditionary operations in areas with these special terrain and climate conditions. These special conditions can be added according to the circumstances to the other campaigns such as the border defense and counterattack campaign to improve detailed planning, provide specialized operational requirements, and tailor training to meet these special environments.

Army campaigns under special conditions include the following:

- Mountain Offensive and Defensive Campaigns: This campaign is potentially relevant to combat in Taiwan.
- High Altitude Plateau Offensive and Defensive Campaigns: This campaign is relevant to an Indian conflict scenario.
- Tropical Mountain and Jungle Offensive and Defensive Campaigns
- River Network Offensive and Defensive Campaigns.

TAIWAN CONFLICT SCENARIO

Amphibious Assault Phase

Landing Campaign

The amphibious assault phase in Taiwan would be the critical phase. Logistics support during this phase would be extensive and could significantly affect the success or failure of the landing.[81] The Army landing campaign is normally conducted as a component of a joint landing operation against a large enemy-held island, such as an invasion of Taiwan. The landing campaign could be a relatively independent Army operation against a medium or small enemy-held island such as Taiwan-held islands off the PRC's coast and in the Taiwan Strait. The Army does contain amphibious combat units and small amphibious landing craft but would require additional support from the other services. The landing campaign consists of breaking through the enemy beach defenses, destroying the defensive system, and seizing a campaign landing base for the landing of the follow-on Group Army to initiate on-island operations. The "Annual Report to Congress on Military and Security Developments Involving the People's Republic of China 2019" states that the PLA does not currently have the amphibious assault shipping to successfully land the required force for an invasion of Taiwan. This would include the employment of civilian shipping to supplement the landing operation.[82]

Support from the other services is critical for a successful landing operation to seize electromagnetic, air, maritime, and information superiority whether the landing is small or large. Meteorological and hydrology information is important for the embarkation, sea crossing, and landing phases of the operation. The main characteristics of a landing campaign include the following:[83]

- Destruction or paralysis of the enemy's landing defense system of systems to create conditions for a successful beach assault and establish a landing base. The establishment of a landing base by the first echelon Group Army supports the landing of logistical support and a second echelon Group Army to conduct on-island operations. Firepower strikes, electromagnetic attacks, mine, and obstacle clearance are critical supporting actions.

  » The campaign formation and fire support initially focus on destroying the enemy's beach defenses. As the landing assault force expands the landing site; fire support assaults shift to enemy artillery positions, transportation hubs, ports, airports, and other important objectives in the rear of the beaches. The campaign formation annihilates the enemy's effective strength and destroys key defensive positions.

- Superior forces are concentrated, and a weak point in the enemy's defensive system of systems is chosen for the main landing direction and landing area. If possible, the landing area should have a low enemy force density, units with weak combat effectiveness, weak firepower and obstacles, and weak counterattack or reinforcing units. Fire strikes, electronic warfare, and psychological operations would play key components in destroying beach defenders and their will to resist.

- A multi-dimensional landing is conducted to achieve a breakthrough of the beach defenses. A conventional landing can be combined with irregular landings of infantry heavy forces

from fishing boats to fix enemy forces and vertical landings by air assault or airborne forces. Special forces can infiltrate by sea or air to attack key targets and guide strikes. The PLA believes multi-dimensional landings can accelerate the seizing of the landing site.

- Joint forces combine firepower strikes, attacks against the enemy's front and flanks, and deployment of obstacles to defeat the enemy counterattack.

The Eastern Theater represents the main operational direction against Taiwan, supported by the Southern Theater and other theaters as needed. The Northern Theater's 80th Group Army has conducted amphibious landing exercises in the past on the Liaoning Peninsula. The Eastern Theater has four amphibious brigades, and the Southern Theater two amphibious brigades. The Marine force has expanded to six Marine brigades, a special operations brigade, and an aviation brigade. These units could form the first operational assault echelon of an amphibious landing in Taiwan. These theaters also contain light brigades that could conduct unconventional landings with primarily infantry using civilian shipping. The heavy and medium brigades could be landed using civilian shipping once the first assault echelon seizes a port or establishes wharves for offloading civilian vessels. Based on open sources – offering contradictory information - the PLA Navy's estimated amphibious assault vessels could land the combat elements of about four brigades in the first wave. PLA doctrine calls for a first operational echelon Group Army to establish a landing base to support the landing of the second echelon Group Army to initiate on-island operations. The first operational echelon would need at least two and probably three Group Armies to secure landing bases and fix Taiwan Army units in support of the main landing. Second-echelon Group Armies would land at the secured landing base to initiate on-island operations.

On-Island Operational Phase

The PLA would need to establish a secure landing base for the debarkation of follow-on forces and logistics to transition to combat in the interior of Taiwan. The campaigns most relevant to PLA Army operations in Taiwan are the urban offensive, the mountain offensive, and possibly the urban and mountain defensive campaigns. The eastern two-thirds of Taiwan is dominated mostly by five mountain ranges. The eastern third where the majority of the population resides is mostly rolling plains with some flat areas. This western area is highly urbanized but consists of areas where the ground forces would need to fight in mountain combat conditions. Combat operations depend on Taiwan capabilities after a landing base has been established to support the disembarkation of follow-on forces and logistics. While the maneuver and positional offensive and defensive campaigns conceivably could be conducted if the Taiwan military retains considerable capabilities although this is unlikely.

Urban Offensive Campaign

After assaulting the landing beaches, the PLA would likely immediately face urban warfare in the heavily built-up areas of western Taiwan. The PLA considers the urban offensive campaign as an important campaign against an enemy defending urban and outlying areas. Many regions including Taiwan's coastal areas contain concentrations of built-up areas. The PLA recognizes that damage to the city and civilian casualties can be high in such an operation. The main tasks include paralyzing the enemy's defensive system of systems, destroying the enemy's will to resist,

destroying or expelling enemy forces, and seizing control of the city. Large and medium cities often represent a country's political, economic, and cultural centers as well as communication and transportation hubs. Capturing key enemy cities can not only annihilate enemy forces, weaken the enemy's war potential, and disrupt the national defensive system, but also win the war.[84]

Modern large and medium cities contain communications facilities, developed transportation systems, many tall buildings in dense concentration, and underground facilities that facilitate defensive operations. Urban warfare involves combat along roadways, buildings, and tunnel warfare. Breakthrough of the enemy defenses is difficult. Operations focus on seizing key objectives. Command and control are complex and should maintain flexibility. Multi-dimensional operations are employed including the employment of special operations forces, Army Aviation, and air assault landings within the city.[85]

The basic requirements and methods of an urban offensive campaign include the following:[86]

- Offensives are fully prepared with strong assaults including firepower strikes. The campaign formation must accurately identify the enemy's defenses and select the main attack direction and deployment of forces. Campaign coordination and support are critical for a successful operation.

- Concentrate superior forces and conduct enveloping attacks on the city defenses. Siege warfare and employment of precision weapons and engineering troops are important. Enemy forces are blocked from breaking through the besieging forces to escape. Operations focus on achieving a quick decision and complete annihilation of enemy forces.

- Concentric assaults from multiple directions and breakthroughs in key areas split the defenses and allow destruction of enemy forces one after the other. However, the PLA recognizes that penetrating strong defenses is difficult. Assaults are conducted in three phases consisting of first blockading and isolating the city, breaking through the outlying defenses on the city's periphery, and then directly assaulting the city advancing to eventually occupy the entire city.

- Combat operations are combined with psychological disintegration of the enemy's will to fight. Blocking relief forces is part of this strategy.

The PLA has no recent urban warfare experience. The last major urban combat the PLA conducted was in the Second Sino-Japanese War 1937-1945 and the Chinese Civil War 1927-1949 with the Nationalists. Some urban combat occurred during the Chinese invasion of Vietnam in 1979. Major PLA training bases often contain urban warfare training areas, with the largest at the Zhurihe Combined Arms Tactical Training Base located in the Northern Theater Command. Units from other theaters rotate through this training base. The PLA has extensively studied Soviet World War II urban warfare operations as well as more recent combat in Mogadishu, Fallujah, and Grozny.

Urban Defensive Campaign

It is not likely the PLA would face an urban defensive campaign unless significant Taiwan Army capabilities survice after PLA forces conduct a successful amphaibious landing. An urban defensive campaign is conducted in cities and surrounding areas. It is usually a component of a large-scale positional or anti-landing campaign but can be conducted independently. The main

task is to defend important cities or use an urban defense to destroy or fix large enemy forces, defeat an enemy's seizure of the city, cooperate with forces in other directions, or create favorable conditions for future operations. An urban defense within the PRC can rely on the urban population to supplement the military in defending the city, peripheral areas, and towns forming a strong defensive system of systems in depth. Tall buildings and underground facilities can provide strong defense points, while cities can contribute medical, material support, communications, transportation, and other means to support defensive operations. Engineers and technical forces reinforce the defensive system of systems. The defense of important large and medium-sized cities that are important political, economic, cultural centers, and transportation hubs are important to controlling strategic positions, protecting national war potential, maintaining civilian morale, as well as significantly affecting the war situation.[87]

Urban defense combines internal and external defensive positions. Priority is given to defending strong points and key lines of communication on the city's periphery by employing favorable terrain and obstacles. Defensive efforts combine campaign forces and civilians defending the city against enemy air strikes, assaults, and blockades in an integrated in-depth circular defensive system under a centralized command. Tenacious defense is combined with offensive actions to defeat the enemy at the city's periphery.[88]

Mountain Offensive and Defensive Campaigns

PLA amphibious assault forces would quickly face mountainous combat after landing on the beaches. This is particularly the situation faces forces landing in the key area of the Linkou plateau that dominates the capital of Taipei and the lines of communication from the south. Various PLA sources provide different definitions of mountainous terrain. The PLA considers mountainous areas as undulating terrain with a height of greater than 200 meters above the general terrain in the area with a slope of 30-50 degrees. Other PLA sources define mountainous terrain as more than 500 meters above sea level; low mountains as 500-1000 meters; medium mountains as 1000 to 3500 meters; high mountains as 3500 to 5000 meters; and extremely high mountains above 5000 meters. The latter two categories would fall under the high-altitude plateau special conditions. The mountain offensive and defensive campaigns generally are focused on mountainous regions in the 200 to 1000-meter range. Roads are few, in poor condition, and usually located along valleys, through gaps, or along ridge lines. Mountains can have steep slopes, rivers, and lush vegetation. Rain can cause erosion and floods. The population is generally small and relatively poor with few supplies available to support operations.[89]

Mountain terrain favors the defense with natural barriers, shelter, concealment, and camouflage providing force protection with secure concealed deployment and disposition. Formations are deployed over a wide front with a large defensive system of systems. Force deployments are usually along primary valleys and lines of communications. Heavy equipment is limited to movement along valleys with offensive and defensive forces competing for control of choke points along lines of communications. Informationized equipment such as reconnaissance, communications, navigation, and positioning capabilities provide important support during mountain operations although they at times display limitations. Command and

coordination of dispersed forces can prove difficult. Mutual support is difficult with forces dispersed over wide areas. Logistics support is difficult with increased consumption, repair, and loss rates. Concealment features of mountainous terrain can benefit the offense with concealed deployment and surprise attacks featuring multi-dimensional maneuver combined with feints.[90]

Combat is focused on controlling key points, roads, choke points, and high ground. Operations require the flexible employment of heavy and light equipment to play to their strengths. Heavy forces can maneuver on relatively flat terrain and plateaus as well as provide cover and support to infantry and lighter forces. Defensive forces are often isolated which can allow the offensive side to penetrate, split, isolate, and outflank the defense while employing firepower strikes to destroy key defensive positions. Airborne, air assault, and special operations units' vertical envelopments along the main attack direction are important actions to disrupt the defensive system, attack key targets, and isolate defensive forces.[91]

An Army defensive campaign is based on establishing a multi-zone in-depth defensive system centered on the main defensive direction with key defensive points and lines established. Accurate assessments are required of the enemy's main attack direction and operational intent. Defensive points are often isolated with limited support or reinforcement. Units are psychologically prepared to fight in isolation and to hold on to their positions. A strong reserve is established to take advantage of battlefield opportunities to launch attacks against isolated offensive forces or initiate a counterattack. Ambushes are set up to block penetrations.[92]

INDIAN CONFLICT SCENARIO

The border counterattack campaign is focused on an Indian conflict that is characterized by the special combat conditions of high-altitude plateau geography. The harsh environmental conditions would significantly impact both sides ground and air operations. PLA sources have stated that the PRC would establish three operational directions in a conflict with India.

Border Counterattack Campaign

The PLA considers a border counterattack to expel a localized enemy invasion as an important offensive campaign in local wars under informationized conditions. The campaign formation concentrates elite forces in the border region to counterattack the enemy and regain occupied territory. Mountainous and high-altitude plateaus in areas disputed with India represent the most likely areas for a border counterattack campaign *(See Figure 4);* also see the high-altitude plateau campaign under special conditions for additional terrain and climate conditions impacting a border counterattack campaign). Border defensive or sealing operations could be employed along the North Korean border during a crisis. In such terrain, forces are channelized and required to conduct relatively independent operations. Command, coordination, and logistics support are difficult. Combat areas contain sparse populations, lack transportation, and other infrastructure, and are characterized by underdeveloped economic conditions providing limited capabilities for local support or maintenance. Forces must rely on organic support with the theater assisting from distant logistics depots. The harsh environment increases non-combat casualties as well as high maintenance and repair requirements for weapons

and equipment.[93]

- The border counterattack campaign can be restricted by political and diplomatic considerations. The basic operational requirements and tactics for border counterattack campaigns include the following:[94]

- Defensive combat and counterattacks are combined to annihilate and expel the enemy. Initial operations defend against the enemy invasion followed by a transition to counterattack operations to annihilate and expel the enemy. Forces in some sectors can conduct primarily defensive operations while those in other areas conduct assaults on enemy forces.

- Forces are concentrated against the enemy from several operational directions. Key counterattack operations are concentrated along the main operational direction. Key objectives are the enemy command systems, transportation hubs, airports, long-range strike weapons, and logistics bases supporting the enemy offensive.

- Operations should be flexible and fast combining ground and air combat. Tactical operations flexibly employ frontal blocking, flank attacks, encirclements, ambush, long-range raids, firepower assaults, and other combat actions. Flexible command includes both basic command through the command chain and delegated command to subordinate commanders in secondary directions.

- The terrain requires relatively independent combat and close coordination by forces separated by terrain and operating along independent axes.

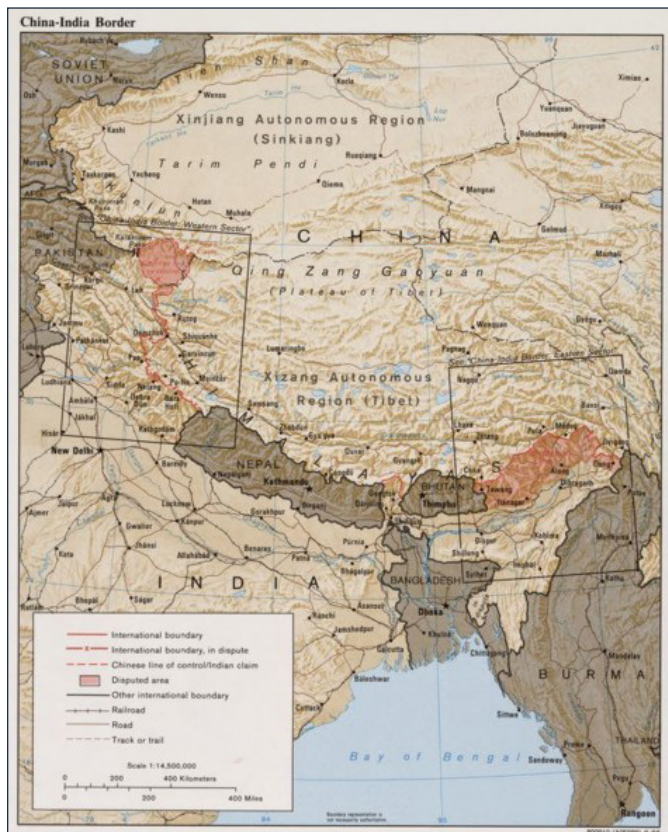- Support operations are fully prepared and

Figure 4: Sino-Indian Disputed Boarder (Source CIA)

reinforced in response to the harsh isolated terrain and environment.

High Altitude Plateau Offensive and Defensive Campaigns

High-altitude cold mountain terrain is found in the PRC's southwest border area near India mainly in the Qinghai-Tibet Plateau. Operations in this area would primarily feature border defense operations. The PLA defines high and extremely high-altitude mountains as 3500 to over 5000 meters. The harsh weather includes severe cold, lack of oxygen, great differences between day and night temperatures, high-intensity ultraviolet radiation, and extended periods of snow. The complex terrain features steep mountains, limited trafficability, few airports, and poor roads. Concealment is difficult, the

population sparse, and economic backwardness provides limited material and other support within the region.[95]

High altitude plateaus have a significant impact on Army campaigns due to the adverse environmental effect on personnel and equipment. High-altitude terrain features thin air, low temperatures, and air pressure significantly decreasing combat effectiveness of units. The environment adversely affects troops physically and mentally leading to pulmonary problems, frostbite, snow blindness, and other health issues. Vehicles are difficult to start, fuel consumption increases, and power is reduced with increased weapon and equipment breakdowns. Fire support systems have increased maintenance and repair requirements, increased munition dud rates, and deviation for missiles. The thin air increases the range of firepower weapons and shrapnel radius. Optical, rubber, and leather products age more quickly affecting equipment life and performance. The climate limits the timing of a campaign with snow and ice affecting the terrain for approximately six months per year. The rainy season causes flash floods and increases the river's water level creating mobility problems. The terrain limits force deployment and mobility reducing the scale of the campaign. The terrain especially affects armor, large-caliber fire support, and other heavy equipment. Air Force employment usually is limited to June through September. The climate usually reduces the time to conduct ground operations to September through November.[96]

The PLA has a number of units specializing in combat in disputed border regions with India in Tibet and the Aksai Chin area. The 77th Group Army and several independent units including two mountain brigades are stationed in Tibet. The 6th Mechanized Division based in Western Xinjiang is trained to conduct operations in the Aksai Chin disputed area. A number of combined brigades in the Western Theater have been reorganized into light brigades suitable for high-altitude mountain combat. Border defense regiments and battalions patrol the border and provide a first line of defense. The PLA has been deploying specialized equipment for high-altitude operations. These include a new Type 15 light tank, light self-propelled wheeled artillery systems such as the truck-mounted PCL-09 122mm SP howitzer and PCL-181 155 mm SP howitzer, and the Z-20 transport helicopter. The PLA recently evaluated an upgraded AR500C unmanned helicopter for high plateau operations with a flight ceiling of 6,700 meters. The unmanned helicopter reportedly can be configured for reconnaissance, electronic warfare, or strike missions.[97]

In preparation for offensive campaigns, troops are politically motivated by propaganda and education to ready them for the difficult operational environment. Troops receive adaptive training to strengthen and acclimate them to the harsh terrain and climate. Equipment must be prepared for operating in the complex environment. Training in similar terrain and climate conditions and wargame exercises are conducted to assess and perfect the operational plan.[98] The Qingtongxia Combined Arms Training Base in the Western Theater contains a large-scale mockup of the Aksai Chin disputed border region with India *(see Figure 5)*. This mockup could be used to orient staff or intended as messaging to India.

Command and control are affected by the environment. Forces are greatly dispersed and separated by mountains increasing the difficulty of coordination and support between forces. Radio communications are attenuated by the terrain. Decentralized command is employed on

Figure 5: Qingtongixia CATTB Aksai Chin Mockup, Western Theater (Source Google Earth)

independent directions to increase command flexibility. Decentralized command allows greater initiative to commanders on secondary directions within the bounds of campaign objectives.[99]

The PLA places greater emphasis on employing firepower to make up for smaller force deployment and decreased mobility. The campaign formation will contain a greater than normal amount of firepower units to support ground force seizing and holding key terrain and destroying enemy forces. Strengthened coordination between the Army, Air Force, and Rocket Force is important to ensure the destruction of key enemy targets in the enemy depth. Ground force operations concentrate on seizing and holding key terrain such as mountain passes, bridges, valleys, and choke points along key crucial lines of communications and in the depth of the enemy's defensive system. The main force rapidly seizes key objectives while follow-on forces occupy and hold the positions to prevent the enemy from regaining the objectives.[100]

Logistics and equipment support are more difficult. Supplies, weapons, and equipment should be prepositioned to reduce movement requirements. Roads should be maintained and improved to support motor transport. Rail and air transport are also used when possible. The campaign formation will rely on specialized and non-specialized logistics forces as well as coordinating with local support to increase the combat units' accompanying logistics. Accompanying, fixed-point and support from superior headquarters from rear area logistics depots are combined to provide comprehensive support to campaign forces.[101]

Defensive operations are relatively passive. Logistics support is vulnerable to interdiction by enemy offensive operations or weather conditions requiring prepositioning of supplies, weapons, and equipment. The in-depth defensive system requires flexibility to defend fortified key points based on mountain passes, favorable terrain,

and lines of communications. Defensive actions are combined with maneuver and offensive actions. Active defense combines ambushes and the capability to conduct small-scale attacks to stabilize the defense or take advantage of battlefield opportunities. Defenses are prepared against the enemy's multi-dimensional attack and form a campaign reserve to support the defensive positions along the enemy's main attack direction. Defensive zones are prepared for relatively independent operations with limited support from other forces. Reinforcements from other regions could take a long time to respond to. The objective is to hold defensive positions and destroy large numbers of enemy forces eventually leading to the transition to a counterattack. The defensive force is composed of infantry, mechanized infantry, artillery, air defense, and engineers as the main force. Reconnaissance is critical to determining the enemy's main attack direction and intent.[102]

CONCLUSIONS

The PLA's Army campaign doctrine provides valuable information on terrain, climate, operational methods, and requirements to support planning and unit training for specific operational missions. Army campaign doctrine is evolving to integrate informationized weapons and equipment capabilities, although this is occurring slowly. Current Army campaigns are in a transition between mechanized warfare and fully informationized warfare. This is not surprising since the Army has only recently achieved full mechanization with the modernization goal of making important progress incorporating information and computer technology by 2020.

The PLA maintains a menu of potential offensive and defensive campaigns, and campaigns under special terrain and climate conditions. An analysis of the emphasis placed on certain campaigns in recent PLA publications provides a shorter list of campaigns that are highlighted providing insight into what the PLA Army considers likely conflict scenarios. The highlighted Army campaigns apply to operations against Taiwan or Taiwan-held islands and to an Indian border conflict. The border defense and positional defense campaigns could also respond to a crisis on the Korean peninsula to secure the border and block an influx of refugees. The maneuver, mountain, and desert grassland campaigns could apply to operations in Central Asia under the auspices of the Shanghai Cooperation Organization.

The Army campaigns represent operations within the PRC or along its periphery. The campaign discussions refer to coordination and support from local and militia forces which would only occur within the PRC or near the borders. The PRC has adopted the Going Out Strategy to support the Belt and Road Initiative and Beijing's increasing overseas interests. These global interests require a new force projection capability to protect overseas interests and lines of communications. However, the PLA currently does not have the strategic delivery, foreign bases, prepositioning, or logistics capability to transport and sustain a large expeditionary force operating far from the mainland support base. As the PLA's capabilities to deliver and sustain an expeditionary force continue to grow, these campaigns could become applicable to overseas operations, particularly in foreign operational environments like those described in the special conditions section.

The PLA is becoming increasingly informationized and adopting new concepts. Doctrinal development, military modernization, and training are focused

on developing an operational system of systems capable of supporting more advanced operations in general and specifically integrated joint operations. The operational system of systems capability represents an integrated command information system seamlessly linking forces, weapons, and equipment. At the campaign level, the operational system of systems is the campaign formation representing an integrated task force of modular units capable of reorganization to meet changing requirements. The PLA envisions future warfare as a system of systems confrontation focused on destroying or paralyzing key nodes or forces to disrupt the enemy's operational system of systems. Non-linear, non-contact, and asymmetric operations will be the norm. While the PLA is incorporating these concepts into the force, anomalies and seemingly outdated concepts remain.

An examination of Army campaigns displays an operational doctrine that is a mixture of mechanized and informationized warfare. Informationized modernization within the PLA has contributed to changes in campaign doctrine from past iterations with the fielding of more modern and integrated communications, precision firepower, and reconnaissance systems. The PLA envisions a dynamic and dispersed battlefield integrated by an advanced command information system to command, coordinate, and synchronize multi-dimensional operations. There is greater reliance on precision firepower support, employment of vertical envelopment, special forces, informationized communications to control dispersed forces, and high-tech reconnaissance and surveillance equipment to provide situational awareness and targeting. Non-contact operations employing precision firepower and information attack are now viewed as the primary offensive capabilities.

The PLA believes that timely initiation of precision strikes on the opponent's key points can achieve initiative and control in combat while decisively determining victory or defeat.

Current PLA doctrine emphasizes the importance of achieving information and air superiority. These are achieved through hard and soft kills to destroy or paralyze key enemy forces. Maneuver, information operations, air defense, and special operations are considered key campaign actions. While some current campaigns incorporate aspects of modern operations, some campaigns do not, while several campaigns appear out of touch with reality. Some observations on the PLA campaigns include the following:

- Some campaign actions such as deep echeloning of forces and breakthrough operations during the positional offensive campaign appear to contradict the lessons of informationized wars featuring non-linear and non-contact operations.

- The landing campaign would most likely be part of a joint landing campaign against Taiwan or could be launched against Taiwan-held islands. While the PLA has sufficient amphibious assault lift to seize Taiwan-held islands, this lift is not sufficient even augmented with civilian shipping to land the requisite forces for a successful large amphibious assault against Taiwan. An operation to seize a contested island in the South China Sea would most likely involve the expanding Marine force or special forces.

- The PLA views the maneuver campaign as a means to achieve a quick decision conducted against an enemy in an unstable or mobile defensive posture.

- The PLA views the urban offensive campaign

as an important campaign. This campaign applies to operations in Taiwan with its heavily urbanized terrain along the coast. The PLA understands the destructiveness of such combat.

- While the PLA considers the anti-airborne campaign important, it is difficult to imagine what country would conduct large-scale airborne landings within China.

- Defensive campaigns contain new features based on informationized modernization within the PLA including intelligence and reconnaissance, command and control, firepower assault, battlefield maneuver, and logistics support. The PLA advocates an active defense featuring limited offensive combat to stabilize a defensive system and conduct counterattacks.

- The PLA's continued inclusion of a positional defensive campaign relying on extensive construction of in-depth defenses appears to fail to consider non-linear and non-contact operations.

- The inclusion of a campaign-level coastal defense relying on positional defensive positions leaves one wondering what country would conduct a large-scale amphibious landing on mainland China.

PLA doctrine evolves slowly, with theorists discussing new developments for decades before implementation in the force. The PLA believes technology drives changes in warfare. The Army campaigns depict a transitional period with current doctrine reflecting aspects of both mechanized and informationized warfare. The PLA continues to play catch up to the revolution in military affairs based on information technologies. Despite reform efforts for twenty years or longer, systemic problems remain retarding military education and training efforts to build an officer corps with a deep understanding of information technologies and the military capabilities they represent. Currently, PLA military theorists are discussing the next revolution in military affairs based on intelligent technologies and its possible impact on military modernization and warfare. Meanwhile, the Army's campaign doctrine remains a mix of mechanized and informationized warfare. The longer it takes the PLA to fully implement critical personnel and training reforms retarding advancements in the operationalization of new doctrinal concepts, the military risks falling further behind the world's advanced militaries.

Analysis of future warfare concepts discussed by PLA sources provides a benchmark for where PLA doctrine is today and its future direction. PLA theorists believe that intelligent warfare will feature a manned-unmanned integration forming an organic symbiosis that can revolutionize warfare. Eventually, PLA theorists believe unmanned systems will represent a large component of the military force. While most theorists believe unmanned systems will operate with some autonomy within the constraints of assigned mission and objectives, humans will monitor and intervene as needed. These theorists believe that technology and weapons represent core capabilities, but most continue to believe that humans are the decisive factor determining victory or defeat in war. Intelligent weapons and systems will execute operational intentions and achieve operational objectives determined by humans. Humans will continue to plan, organize, and execute wars, deciding on the command and operational methods employed, assisted by intelligent technology.

PLA theorists continue examining foreign military operations for lessons learned, and some analyze the potential of hybrid warfare. They believe hybrid operations integrate irregular and regular forces in the same combat space with irregular forces becoming the main force. Hybrid combat styles are diverse and flexible including intense, high-tech regular combat, covert employment of special forces, modern guerilla warfare, cyber warfare, and psychological warfare. Hybrid warfare is based on achieving political objectives with minimal cost and risk while disintegrating the enemy from the inside out. Cognitive warfare will attack the enemy's will to resist using public opinion, psychological, and legal warfare to confuse the enemy and disrupt the decision-making process. Hybrid warfare creates new, low-risk confrontational choices against major opponents. The hybrid warfare concept is not new to the PLA whose history includes successful guerilla warfare transitioning to more conventional operations. Today the PLA incorporates maritime militia and paramilitary forces into harassment operations against other nations to gain maritime control.

The PLA avidly researches military theory, foreign operations, emerging and disruptive technologies, and development trends in future warfare for guiding principles to incorporate into their doctrine. The PLA is making strides in modernization and is not recognizable from the PLA twenty years ago. However, doctrine has evolved at a slow pace, and critical reforms in military education and training have been slow to gain traction. Until the PLA can build up an officer and noncommissioned officer corps knowledgeable in informationized warfare, the military risks playing catch up in the next revolution in military affairs based on intelligent technologies.

APPENDIX: ADDITIONAL PLA CAMPAIGNS

This appendix contains a discussion of campaigns that the PLA considers relevant, but do not appear likely in the short or near term given the current strategic situation.

Maneuver Offensive Campaign

The maneuver or mobile offensive campaign is an offensive campaign of quick decision by an Army campaign formation against an enemy in an unstable or mobile defensive posture. Ground force modernization has fielded a mobile force with tracked and wheeled armor vehicles and high mobility vehicles to enhance maneuver. A maneuver offensive campaign intends to annihilate enemy forces rapidly, transform the correlation of forces and favorably change the battlefield situation. The focus is to concentrate on destroying the enemy's high-tech weapons and key nodes in the operational system of systems. A maneuver offense maintains initiative and can achieve strategic objectives. The PLA believes that Army maneuver offensive campaign is an effective method to rapidly destroy key enemy forces and the cohesion of the enemy operational system of systems. In high-tech informationized wars, multi-dimensional maneuver and firepower create battlefield opportunities to efficiently destroy the enemy's vital forces. However, force protection, command, and support become more difficult on the informationized battlefield.[103]

The fast-paced, dispersed battlefield can create opportunities for commanders to employ initiative during maneuver operations. The campaign commander must carefully plan communications, engineering, and logistics support during the maneuver campaign. Careful selection of the main operational direction and objectives is critical based on the superior commander's intention, the enemy deployment, and battlefield analysis. Campaign objectives can include the enemy's high-tech weapons and equipment, logistics sites, transportation hubs, and command centers. Armor, mechanized infantry, and Army Aviation forces conduct the main offensive tasks. The initial stage of the operation can be decisive and determine the success of the campaign.[104]

Positional Offensive Campaign

The positional offensive campaign is conducted by an Army campaign formation against an enemy in a positional defensive posture. The main tasks are to annihilate key enemy defensive groups and seize key objectives on the battlefield. The enemy's defensive positions can be field defenses employing defensive lines and in-depth multi-dimensional defensive systems consisting of constructed defensive positions, a firepower system, and obstacles. Conducting a breakthrough of the defensive system is the key campaign action. Offensive force deployment emphasizes flexibility, and fierce offensive, and defensive combat, and can include high damage and loss rates, with difficult support requirements. The PLA assesses that enemy forces will concentrate on implementing early countermeasures to destroy logistics capabilities. Combat areas outside of the PRC will increase logistics difficulties as the current logistics infrastructure is in the five theaters. The PLA notes that the First Gulf War was relatively large scale, long duration (approximately 7 months), with high consumption rates.[105]

Positional offensive campaigns require well-prepared forces, planning, and analysis of enemy weaknesses and the battlefield environment. The PLA will conduct pre-combat training on similar

terrain as the operational area, if possible, as well as political training to ensure high morale during the complex operations. Campaign preparations are accomplished rapidly, and in a concealed manner to protect against enemy countermeasures to disrupt the operation. Forces are deployed in a deep echelon formation to maintain offensive capabilities and ensure success. The campaign formation is divided into first and second echelons with a reserve team. The campaign formation can establish a rapid assault group to enhance the capability to exploit initial operations and continue the assault into the enemy's depth. Continuous command is required to deploy the echelons into combat at the correct time and in quick succession.[106]

Concentration of superior forces is required to ensure breakthrough operations. This concentration includes firepower and air strike forces in the main operational direction to support the breakthrough. The campaign formation focuses on intermingling with the enemy forces, dividing them, and annihilate them one after the other. The PLA identifies flexible operational methods to include the following:[107]

- Single or multi-point penetration of the enemy's defensive position

- Penetration with twin pincer assaults concentrated on the enemy's flanks to open a gap in the enemy's defensive position.

- In-depth encirclement with forces penetrating the enemy position from multiple directions to engage and destroy the enemy from all sides.

- Parallel penetration attacking the enemy in two areas at once.

- Splitting the enemy's forces and defeating them in detail

- Roll up both enemy flanks after the penetration

to expand the breakthrough and coordinate with follow-on forces to destroy the enemy.

- Concentric assault on enemy forces from multiple directions, normally employed against an enemy defending an urban area.

- Full-depth simultaneous attack against enemy forces throughout the defensive system at the same time

Maneuver Defensive Campaign

The PLA considers a maneuver defensive campaign as a basic defensive campaign method in future informationized local wars. The maneuver or mobile defensive campaign combines defensive resistance in certain areas with mobile counterattacks as the primary action to defeat the enemy's offensive. The goal is to eventually transition to offensive operations while cooperating with other campaign directions. A maneuver defensive campaign is usually based on an emergency situation with short preparation time and featuring an extensive defensive area with gaps between defenders emphasizing maneuver and non-linear combat.[108]

Positional Defensive Campaign

The PLA still considers a positional defensive campaign where the campaign formation relies on the construction of in-depth defensive positions as a basic campaign method. This campaign appears at variance with the stated objective of non-linear and non-contact operations and appears more of a legacy form of combat. A positional defensive campaign requires extensive preparation time to construct field positions using favorable terrain to defend key areas and objectives to defeat the enemy's attack; provide cover for the maneuver of the main force conducting offensive operations; and consolidate occupied areas and defend against enemy counterattacks.[109]

Positional defensive campaigns are important to defend border areas, resist and stop an enemy invasion, gain time, and protect the main force. Defenses should be omni-directional and in-depth but concentrated in the main direction. An extensive defensive posture is combined with counterattacks to cause heavy enemy losses. Defending forces should be prepared to take advantage of battlefield opportunities to transition to offensive actions to defeat the enemy.[110]

Anti-Airborne Campaign

The anti-airborne campaign is conducted by a campaign formation, local troops such as border defense, coastal defense, garrison troops, reserve, and militia forces as well as People's Armed Police as required to destroy a large-scale enemy airborne landing in the campaign or strategic depth as well as to defend important objectives and facilities against enemy airborne troops. The PLA considers this an important campaign under conditions of informationization, although it is difficult to grasp what country would be conducting a large-scale airborne landing within the PRC. The PLA believes an enemy could unexpectedly launch an airborne landing. Seizing and maintaining air superiority, at least local superiority over the air corridor, is essential to defeating an airborne operation. Preemptive operations are conducted such as attacking enemy airports prior to launching an airborne operation.[111]

Campaign commanders identify potential drop zones to defend. Local forces, reserves and militia, and People's Armed Police units in the area initially respond to an enemy landing, along with an anti-airborne reserve force. Friendly forces should attack the airborne force before they can assemble and organize in the drop zone, divide the enemy force, and destroy them one after the other with superior forces.[112]

Coastal Defensive Campaign

A campaign formation in a coastal defense campaign relies on positional defensive positions to fight against an enemy's landings and is normally part of an anti-landing campaign. The PLA notes the PRC's long coastline and that much of the economically developed and strategically key areas are along the coast. As with the anti-airborne campaign, it is difficult to imagine what country would conduct a large-scale amphibious landing against the mainland PRC. The coastal defensive campaign includes multi-dimensional resistance, comprehensive attack, and counterattacks to annihilate the enemy at the coast or during sea-crossing operations. If the campaign formation cannot stop the enemy from establishing a beachhead, then counterattacks must annihilate or expel the enemy from their positions. The campaign requires effective reconnaissance of the enemy situation as well as hydrological, meteorological, and topographic conditions to prepare defenses, concentration of forces, and firepower in the main direction, and strike the enemy when vulnerable and exposed during transport.[113]

The PLA does maintain a number of reorganized coastal defense brigades in addition to Navy cruise missile units. Several coastal defense units have been converted to Marine brigades. The coastal defense brigades field the PHL-03 300mm MRL, Type 81 122mm self-propelled (SP) MRL, PLZ-45 Type-88 155mm SP howitzer, as well as towed artillery and air defense systems.

Desert Grassland Offensive and Defensive Campaigns

Desert grasslands are mainly found in the north and northwestern regions of the PRC. The

environment features flat terrain and few trees with good observation making concealment and camouflage difficult; a dry climate with large sandstorms and scarce water resources; many sand dunes and soft soil; rapid weather changes with large temperature differences between day and night; and low population density consisting mainly of ethnic minorities and a poor economy. The terrain is favorable for large-scale operations and maneuver. [114]

Operations feature armor force maneuvering and large-scale airborne operations. The open terrain makes it difficult to achieve surprise and the defensive side has difficulty using terrain for concealment or construction of fortifications. Support to personnel and equipment is difficult, with water support difficult and fuel consumption high. The windy and sandy desert environment contribute to arduous equipment support tasks. Medical support requirements and non-combat attrition are high with difficulties treating and evacuating casualties.[115]

An Army desert grassland offensive campaign begins with seizing air and electromagnetic superiority as well as extensive firepower strikes. Air, air defense, and electronic warfare forces are concentrated along the main attack axis. Special forces along with irregular forces such as militia conduct operations in the enemy rear area attacking key targets such as command and control, airfields, fuel depots, and other support facilities to reduce the enemy's combat potential. Armor and mechanized forces conduct rapid mobile operations along multiple directions attacking the enemy's flanks and rear area. The objective is to penetrate the depth to split up the defensive deployment and strike the enemy's center of gravity destroying defensive cohesion. Logistics and equipment support forces are increased particularly water and fuel supply, and medical support. Rear bases are established to enhance and provide flexible logistics support.[116]

Army defensive campaigns require special attention to concealment, camouflage, and fortifications for force protection against enemy firepower strikes, even though protection is difficult in the terrain. False targets are established as part of the deception plan. Campaign reconnaissance assets are strengthened to determine the enemy's main attack direction and intentions. Electronic countermeasures are employed to blind or destroy enemy reconnaissance and weaken the accuracy and intensity of the enemy's firepower strikes. Terminal air defense is strengthened to defend against cruise missiles and other precision strike weapons. The defensive system incorporates three-dimensional depth and flexible response. The defensive positions control water resources, towns and residential areas, transportation, and other key areas and key objectives. Defensive actions focus on countering and restricting the enemy's maneuver and mobility with the use of firepower, anti-tank and anti-helicopter systems, electronic interference, mobile obstacle emplacement, air interdiction, and attacks on the enemy's rear area. Firepower, ambushes, and obstacles are employed to restrict enemy maneuver on the flanks.[117]

Tropical Mountain and Jungle Offensive and Defensive Campaigns

Tropical mountains and jungles are concentrated on the PRC's southern borders. The terrain and climate in these areas are extremely complex and pose serious challenges during Army border defense campaigns. These regions have hilltops, steep slopes, and deep valleys, with many natural caves. The region has a limited road system

mostly in poor condition. Vegetation is dense with interwoven vines. The climate is hot and humid with heavy rain and fog. There are many insects, bacteria, and many prevalent diseases increasing medical support requirements. The population is sparse, consisting largely of ethnic minorities with complex languages, different beliefs, and taboos that need to be taken into consideration. Local material support is limited.[118]

The terrain and climate have a significant impact on operations and reduce the overall effectiveness of weapons and equipment. The climate and terrain are conducive to concealed concentration of small force groupings and small-scale independent engagements. Neither the offensive nor defensive side can conduct large-scale mobile warfare. The terrain, vegetation, and climate block the line-of-sight reconnaissance and reduce the technical performance of high-tech reconnaissance equipment. Armor, artillery, and other heavy equipment are limited to movement along roads with reduced speeds negating high operational tempo or rapid concentration of forces. The mountains and steep slopes limit direct fire systems. Small defensive groups can effectively control roads and key points relying on natural obstacles and establishing positions on steep mountain terrain. The terrain and vegetation will limit the defensive side's ability to launch large-scale counterattacks. Command and coordination are difficult. The terrain and vegetation weaken and absorb radio signals, shortening the distance. The rough terrain and vegetation make the placement and maintenance of wired communications difficult. The terrain leads to dispersed small force groupings that have difficulty coordinating actions. The terrain and climate make it difficult for ground forces to indicate targets for air force firepower support and make it difficult for aircraft

to identify ground targets. Determining artillery firing data is difficult combined with reduced effectiveness of reconnaissance and surveillance equipment. High-tech weapons and equipment capabilities in general are degraded. Support, including engineering construction, logistics transport, weapons, and equipment are onerous and prone to failure. Maintenance and repair are difficult and non-combat combat casualties increase. The enemy's employment of biological or chemical weapons would complicate operations to a greater extent compared to other terrain and climate conditions.[119]

Army offensive campaigns require careful preparation. Accurate reconnaissance along the main attack direction needs to identify road and terrain conditions, the defensive deployment, fire support positions, obstacles, and key targets including informationized weapons, population centers, weather, and evidence of epidemics. Pre-battle training is required to strengthen troops and improve combat capabilities for the complex terrain and climate.[120]

Offensive operations are conducted along maneuver corridors to maintain initiative and operational tempo as much as possible to achieve a successful campaign. Combat is focused on controlling high ground and key targets, and rapidly seizing lines of communication to allow the deployment of follow-on forces. Light forces, supported by artillery and armor, are employed. Flexible tactics, combining frontal attacks with envelopments by special forces and air assault units, are employed. Special forces attack key targets, such as transportation, command and control, and logistics as well as guide air strikes, in the rear area. Command is flexible and coordination carefully planned to overcome the dispersion of forces and the environmental impact on operations.

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Coordination between various force groupings, forces and firepower support, and ground-air support require careful planning. A combination of centralized and delegated command is employed. A commander assigns delegated command to a deputy commander or subordinate commander to conduct an operation or action within the context of the operational plan's objectives, usually in a secondary direction. If unforeseen battlefield situations develop, subordinate commanders are provided more freedom of action and decision-making to respond to the altered conditions as long as the assigned objectives are achieved. The difficult climate, complex terrain, and poor transportation require augmenting campaign support to include the following: medical support to overcome non-combat attrition, engineer support to ensure mobility; and timely and accurate meteorological and hydrological information.[121]

Tropical mountain and jungle defensive campaigns are focused along roads, rivers, and valleys to block enemy offensive operations. Defensive positions are concealed on either side of mobility corridors and occupy key points where the enemy is expected to launch a main attack. The defensive system should take advantage of the terrain as well as allow for maneuver and concentration of defensive forces. Main forces coordinate with local forces and militia units. Firepower and obstacles are used to control and defeat enemy units. An operational reserve acts as a mobile force to support any operational direction as needed. Ambushes, local offensive action, and counterattacks provide defensive stability. Poor visibility caused by terrain, vegetation, and climate aid defensive ambushes and attacks. The rear area defense is strengthened against enemy infiltration and employment of special forces operating against friendly follow-on forces, reserves, command posts, logistics, and important facilities. Accurate reconnaissance is required to detect enemy intentions and movement.[122]

River Network Offensive and Defensive Campaigns

Areas with river networks are found primarily in southern China and Taiwan's coastal areas. These areas include interwoven river networks, lakes, reservoirs, and paddy fields. The areas are usually found in plains with only a few mountainous areas. The regions typically have a high level of urbanization including small villages with corresponding population density. The climate is warm and humid with a rainy season adding to the groundwater level. The ground can be muddy, and rains can destroy road networks, limiting mobility.[123]

The rivers provide natural defensive lines, although it is difficult to establish a defense in depth. The rivers, lakes, and ditches found in these regions form natural obstacles to maneuver and ground assaults. Armor, artillery, and other heavy equipment are particularly affected by the terrain. The flat open terrain exposes forces to ground and air firepower attacks. The flat open terrain makes hiding operational intentions and force deployments difficult. The PLA also considers it difficult to employ camouflage and false targets against enemy reconnaissance in this environment. Movement is heavily dependent on roads and bridges. Campaign formations are split by the terrain resulting in command and coordination difficulties. Engineering support for mobility and counter-mobility is difficult.[124]

Army offensive campaigns in river and water networks require engineering support to improve ground and water transportation to overcome obstacles and enable sudden attacks. The

transportation assets requiring maintenance, repairs, or construction include main roads, emergency roads, bridges, ferries, and passages along rivers. Operational plans need to include forced river crossings and organizing water transportation. Pre-battle training can enhance combat effectiveness in this type of terrain. Main attacks should be planned along longitudinal roads with few river crossings. Airmobile operations can overcome river barriers and support river crossings to increase operational tempo. Amphibious armor can form rapid assault groups along the main attack direction. Comprehensive firepower combined with electronic warfare and special forces can strike throughout the defensive depth destroying key points to support rapid assaults. Unified command and close coordination are required to overcome divided forces, restricted ground mobility, and enemy counterattacks.[125]

Army defensive campaigns take advantage of natural obstacles to construct forward defensive positions. The defensive line should use larger rivers taking advantage of towns and natural obstacles. Defenses are strengthened where the enemy main attack is expected with multiple defensive zones and lines supported by fortifications and obstacles. Engineering support is critical to ensure friendly mobility and logistics support to forward units while obstructing enemy movement. A strong reserve is positioned along the main defensive direction with the ability to maneuver through the restrictive terrain to reinforce the forward defenses or respond to enemy attacks. An offensive defense is employed to attack enemy forces separated by the river system and complex terrain using ambushes, firepower strikes, and counterattacks.[126]

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