

Prospects for the PLA's Operational Art Toward 2000: Tradition Versus Revolution

Jianxiang Bi

Past decades have seen a proclaimed revolution of the People's Liberation Army (PLA) in operational art, responding to and reflecting different policy agendas, threat perceptions, and conventional warfare. But lack of political, institutional, and technological means has forced the PLA to continue employing traditional human resource-oriented total war operations to fight contemporary high-tech, limited war operations. As a result of a glorious tradition's straitjacket, the revolution remains uncertain, as do prospects for future operational successes.

Keywords: tradition; revolution; politics; institutions; technology

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At the heart of Chinese military land operational art is a stark contradiction. The People's Liberation Army (PLA) has always sought to revolutionize its traditional human resource-oriented total war operations, making them less dogmatic and more suitable for contemporary operations. This ambition contrasts sharply with the PLA's attempt to develop a cast-iron comprehensive operational art of technology-oriented, combined services and branches, and limited war operations, so as to offer "road maps" for commanders to reach expected operational objectives. The contradiction between "flexible" approaches and "cast-iron" frameworks has led senior commanders and military scholars to constantly debate issues related to revolution and tradition, limited

Dr. Jianxiang Bi teaches in the Department of Political Science, Carleton University, Ottawa, Canada. His areas of specialization include strategic studies and East Asian politics. He wishes to thank June Teufel Dreyer, Carl G. Jacobsen, Michael Ying-mao Kau, Michelle Peng, and Harold von Riekhoff for their helpful comments.

and total war, and weapons and soldiers throughout the military modernization period (1979-present). This has confounded their efforts to explore ways to narrow the gaps between revolution and tradition, make distinctions between limited and total war, and rationalize ties between technological and human factors. The issues have also frustrated Western scholars, who find it difficult to understand how the PLA could win a contemporary high-tech, limited war by using obsolete weapons according to traditional operational art. The frustrations are reflected in the literature that focuses on China's nuclear and conventional war strategies; none examines the PLA's operational art, though some authors indirectly touch on it. Yet even indirect commentaries often miss key points by overestimating or underestimating the revolution in operational art within traditional parameters over the last two decades. The underdeveloped nature of this topic has been largely due to a lack of primary materials that itself has contributed to misinterpretations and misperceptions.¹ In fact, the contradictory conclusions have further mystified the PLA's operational art. Despite new and uncensored materials now available in Western university libraries, the myths remain.

This article examines the progress that has been made in revolutionizing the PLA's operational art over the last two decades, assesses conceptual, organizational, and technological issues to explain the mixed results of the revolution, and shows consequential implications for contemporary high-tech, limited war prospects. The examination starts with the PLA's operational tradition, highlighting the frameworks already in place. It then analyzes the revolution in operational art sparked by early theoretical debates on "seeking truth from facts" and the 1979 Sino-Vietnamese border conflict, the attempts to modernize operational art in the mid-1980s, and the new challenges facing its operational art in the 1990s. Finally, it explores the key issues which have prevented the PLA from developing a cast-iron, comprehensive operational art compatible with high-tech, limited war operations relevant to the next century.

¹Alastair I. Johnston, "China's New 'Old Thinking': The Concept of Limited Deterrence," *International Security* 20, no. 3 (Winter 1995/96): 5-42; John W. Lewis and Xue Litai, *China Builds the Bomb* (Stanford, Calif.: Stanford University Press, 1988); Paul H.B. Godwin, "Chinese Military Strategy Revisited," *The Annals of the American Academy of Political and Social Science* 519 (1992): 191-201; Ellis Joffe, "People's War Under Modern Conditions: A Doctrine for Modern War," *The China Quarterly*, no. 112 (December 1987): 555-73; J. Mohan Malik, "Chinese Debate on Military Strategy: Trends and Portents," *Journal of Northeast Asian Studies* 9, no. 2 (Summer 1990): 3-32; and David Shambaugh, "The Insecurity of Security: The PLA's Evolving Doctrine and Threat Perceptions Towards 2000," *ibid.* 13, no. 1 (Spring 1994): 3-25; and "China's Military in Transition: Politics, Professionalism, Procurement and Power Projection," *The China Quarterly*, no. 146 (June 1996): 265-615.

Tradition

The PLA's concept of operations (*zhanyi*) has roots in its distinct tradition of "people's war"—the Clausewitzian total mobilization of societal resources for war, in which mass soldiers seek the total destruction of the enemy's forces with available weapons in order to liberate and defend their homeland.² However, it lacks a clear-cut definition. The authoritative military encyclopedia defines it as "the total sum of engagements waged by armed forces according to a central plan in a direction or a region of war within certain time for reaching partial objectives of war or war zone-wide objectives."³ In contrast, standard military terminology simply characterizes it as "the total sum of engagements fought by rivals on the basis of plans in a direction or space."⁴ Some military scholars have challenged those vaguely defined concepts, since they fail to reflect operational tradition and realities. For them, operations are "military action conducted by group armies or equivalent troops according to a unified plan within a certain time for specific objectives."⁵ Despite the disputes, the PLA's concept has four basic elements: operations involving a series of engagements are part of war; a basic combat unit is a group army or group armies; operational space and time are coordinated in accordance with central planning; and operational objectives are normally (if not exclusively) designed to thoroughly annihilate rather than defeat large enemy units. The contemporary operations that the PLA faces, however, raise some tough questions about these tradition-oriented operational elements. Though a group army or group armies may sometimes fight a series of engagements, as in border conflicts, such engagements may never reach the level of operations; or one side may intend to fight operations, while the other may maximize or minimize conflicts; or both sides may use small units, rather than a group army or group armies, to engage and defeat the enemy at or over borders. Military scholars have deliberately avoided these definitional dilemmas.

²Carl von Clausewitz, *On War* (Princeton, N.J.: Princeton University Press, 1984), 99; and *Historical and Political Writings* (Princeton: Princeton University Press, 1992), 32-42.

³Zhongguo dabaikē quanshu bianjibu, *Zhongguo dabaikē quanshu: Junshi* (The Chinese encyclopedia: The military), vol. 2 (Beijing: Zhongguo dabaikē quanshu chubanshe, 1989), 1236.

⁴Li Jijun, *Junshi lilun yu zhanzheng shijian* (Military theory and war practice) (Beijing: Junshi kexue chubanshe, 1994), 149.

⁵Sun Jizhang, *Zhanyi xue jichu* (Introduction to operational science) (Beijing: Guofang daxue chubanshe, 1990), 58-61; and Guan Jixian, ed., *Gaojishu jubu zhanzheng zhanyi* (Operations in high-tech, limited war) (Beijing: Guofang daxue chubanshe, 1993), 7-8.

The PLA's concept of operations contains two levels: basic theories and applied theories. Basic theories (*jichu lilun*) or operational science (*zhanyi xue*) are mainly concerned with a theoretical study of operations, and explain universal laws, concepts, and principles such as operational targets, methodology, origins, development, elements, environments, material and psychological factors, and thought. Basic theories determine applied theories (*yingyong lilun*) or operational art (*zhanyi fa*), which concentrate on specific laws such as the operational nature, characteristics, contents, procedures, and methods; they are guides for any operations, whether they are combined, land, naval, air, strategic missile operations, or operational logistics. Applied theories originate from military tradition and operational experiences that provide intellectual justifications for the refinement of basic theories.⁶ Central to these theories is flexibility, since they are designed to fit operational environments, rather than operational environments being truncated or distorted in order to fit them. As primary criteria for judging, guiding, and executing operations, they serve as a bridge linking war and engagements. At the theoretical levels of war and engagements are the sciences of strategy and tactics, which deal with the laws governing war situations as a whole and guiding engagements, respectively. Chinese strategy, operational art, and tactics are always multifaceted in the sense that the three levels may be affected in different ways by political, economic, social, military, and technological considerations and may therefore be incongruent with the logical order of strategy, operational art, and tactics. The essence of each level is total mobilization for total victory.

The PLA's operational art can be traced back to the early 1930s, when Mao Zedong formulated the famous tactical principle codified as "the enemy advances, we retreat; the enemy camps, we harass; the enemy tires, we attack; and the enemy retreats, we pursue."⁷ The principle gradually became fundamental to operations and engagements in the Sino-Japanese War, in which mass soldiers armed with obsolete weapons and sustained by poor peasants fought Japanese professional soldiers across the vastness of China. At the

⁶In Chinese terminology, engagements (*zhandou*) normally refer to tactical activities at the division level or below. Operations consist of several engagements between the group army level and the war zone (theater) level. War (*zhanzheng*) involves several operations above the war zone level. Operations in this article refer to military actions between the group army and division levels, as China perceives operations in future border or offshore conflicts above the group army level to be unlikely. Such a perception suggests that future conflicts will be carefully maintained at the group army level or below.

⁷Wang Houqing, ed., *Zhanyi fazhan shi* (The evolution of operations) (Beijing: Guofang daxue chubanshe, 1991), 654-55.

core of operational art were initiatives, namely, "you fight your war, but I fight my war," devoted to calculating both strengths and weaknesses, and creating environments for shifting defense to offense through constantly searching for the enemy's weak points. Combat units generated offensives against those points within a strategic defensive, fought operations and quick engagements within a strategically protracted war, and waged operations and engagements on exterior lines within strategically interior lines in order to systematically destroy the enemy. Primary operations were "guerrilla warfare," aimed at harassing and exhausting the enemy, and opening up new battlefields or setting up new bases at his deep rear, while secondary operations were "mobile warfare," used to annihilate the enemy through maneuvering, and "positional warfare," designed to weaken the enemy's physical, psychological, and material strength.⁸ To ensure operational successes, societal support—the mobilization of masses for operations—was essential. The central guideline was the need to wage human resource-oriented operations to harass, strike, and finally annihilate the Japanese forces.

This operational art was refined during the Communist-Nationalist showdown in the late 1940s. As during the Sino-Japanese War, poorly equipped and trained Communist troops had to fight against apparently more powerful Nationalist forces armed with more advanced weapons. To compensate for this disadvantage, the priority was to seek the enemy's vulnerable points and thus to maximize chances to produce favorable conditions for conducting successful operations. Mao then developed ten offensive principles: (1) strike dispersed, isolated enemies first, and concentrated, strong enemies second; (2) take small and medium-sized cities and extensive rural areas first, and large cities second; (3) make wiping out the enemy's effective strength, rather than holding a city or seizing an area, the main objective; (4) in every battle, concentrate an absolutely superior force by encircling the designated enemy forces completely, strive to wipe them out thoroughly, and do not let anyone escape from the net; (5) never fight unprepared and uncertain battles; (6) give full play to the style of fighting—be courageous in battles, with no fear of sacrifice or fatigue, and press continuous fighting; (7) strive to destroy the enemy through mobile warfare; (8) occupy all cities that are weakly defended; (9) replenish strength with the arms and (most of) the personnel cap-

⁸*Selected Works of Mao Tse-tung*, vol. 2 (Peking [Beijing]: Foreign Languages Press, 1965), 157-67; Li, *Junshi lilun yu zhanzheng shijian*, 148; and Zeng Yan and Xu Fangce, "Strategic Combat Principles," in *Mao Zedong junshi zhanlue lun* (On Mao Zedong's military strategy), ed. Junshi kexueyuan zhanlue yanjiubu (Beijing: Junshi kexue chubanshe, 1993), 294-99.

tured from the enemy; and (10) make good use of intervals between operations to rest, train, and reorganize the troops.⁹ The most common theme of the principles was to systematically destroy isolated, dispersed Nationalist forces by concentrating or dispersing troops, encircling or outflanking the enemy, and advancing or retreating with large strides regardless of whether cities were won or lost. In annihilation-centered operations, the three-in-one system (mobile, positional, and guerrilla warfare with regular armies, local troops, and militias) was formalized as an ideal model of managing combined soldiers and masses operations. As a rule, the employment of superior human resources to fight mobile warfare remained primary; positional and guerrilla warfare was complementary. This rule ordained that regular forces were assigned to operations both within and outside war zones, that local troops were responsible for local defense, and that militias undertook supportive functions such as reconnaissance, guides, patrol, communications, and battlefield rescue. To meet operational needs, the PLA gradually established branches such as artillery, tanks, engineering, communications, and railway corps. Despite changes in organizations, the PLA was essentially infantry-oriented and relied heavily on societal support for human and material resources.

This operational art was further tested in the Korean War. Facing the immediate threat of United Nations forces to the new communist regime, the PLA was determined to fight a "people's war" in hopes of driving them out of Korea. However, poor weapons and equipment once again forced it to identify the enemy's vulnerable points in order to weaken the latter's technological superiority and minimize its combat effectiveness. Operations were then designed to be offensive or defensive with offensive purposes, i.e., using human waves, terrain environments, and night fighting to offset inferiority in technology. By constantly maneuvering, the PLA sought to surreptitiously concentrate superior forces for close combat in waves, in which soldiers would take advantage of the night to break through UN defense lines, encircle and outflank UN forces, and divide them into pockets in order to totally annihilate several divisions in one swift blow. However, the severe shortage of force projection capabilities, along with UN firepower attrition and interdiction, restrained the PLA's night and rapid response operations and forced it to engage

⁹*Selected Works of Mao Tse-tung* 4:160-63; Sun, *Zhanyi xue jichu*, 167-70; and Guofang daxue dangshi dangjian zhenggong jiaoyanshi, ed., *Dang de junshi zhanlue zhuanbian yu renmin jundui jianshe* (The transformation of the party's military strategy and the reconstruction of the people's army) (Beijing: Guofang daxue chubanshe, 1990), 117-43.

in formal positional warfare. Inferiority in mobility, technology, and firepower, associated with unreliable logistics and limited societal support from the local people, contributed directly to the failure of many well-planned operations in Korea.¹⁰ As a consequence, the PLA quietly switched from the ambitious objective of destroying large UN units to the limited objective of defeating UN offensives in hopes of holding its positions around the 38th parallel. Though the PLA learned the hard lessons from the Korean War—the importance of advanced weapons, combined operations, and secured logistical support in modern war—its traditional operational art remained intact.

After the Korean War, the PLA was gradually transformed into a combined armed force. Under Mao's formalization of "unified command, system, establishment, disciplines, and training," the priority of modernization programs proposed by the Military Academy and the Academy of Military Sciences was to develop a Soviet-style unified, combined operational art. For example, Liu Bocheng actively lectured on Soviet group army-level operations and organized operational training, while Ye Jianying personally conducted war games under nuclear conditions. However, a political campaign against dogmatism (imitating Soviet combat, training, and administrative regulations) launched in 1957 jeopardized their efforts. To show loyalty to glorious tradition, the politically sensitive Ye quickly changed his position, insisting that the emergence of nuclear weapons did not fundamentally change the essence of war and that Mao's ten operational principles were still valid, correct, and suitable for contemporary operational conditions.¹¹ As a result, army-wide military training shifted exclusively to the tradition-oriented technical skills of individual soldiers making optimal use of their weapons in the 1960s, and of infantry soldiers destroying enemy tanks, aircraft, and airborne troops (*sanda*) and fighting anti-nuclear, chemical, and biological warfare (*sanfang*) in the 1970s.¹² Mao's principles were enshrined by commanders

¹⁰Junshi kexueyuan junshi lishi yanjiubu, ed., *Yundong zhan ruogan wenti yanjiu* (A study of several questions related to mobile warfare) (Beijing: Junshi kexue chubanshe, 1994), 69-84, 99-101; and *Kang-Mei yuan-Chao zhanshi* (History of the Korean War) (Beijing: Junshi kexue chubanshe, 1987), 309-25; and *Mao Zedong junshi zhanlue lun*, 108-13.

¹¹Fan Shuo, *Ye Jianying zhuan* (The biography of Ye Jianying) (Beijing: Dangdai Zhongguo chubanshe, 1995), 512, 531; Ye Jianying, "The Significance of the Ten Military Principles for Guiding Contemporary War," in *Ye Jianying xuanji* (Selected works of Ye Jianying) (Beijing: Renmin chubanshe, 1996), 462; Lin Biao, *Renmin zhanzheng shengli wansui* (Long live the victory of people's war) (Beijing: Renmin chubanshe, 1969), 8; and Deng Xiaoping, *Deng Xiaoping lun guofang he jundui jianshe* (Deng Xiaoping on national defense and armed forces-building) (Beijing: Junshi kexue chubanshe, 1992), 59-60.

¹²Yan Shikuai, *Dang dui jundui juedui lingdao lilun yu shijian* (Theory and practice of the party's absolute control over the army) (Beijing: Junshi kexue chubanshe, 1993), 222-25; and *Liushi*

and scholars and became the bible for all operations, regardless of space, time, and enemy.

Examination of the PLA's operational tradition indicates that the idea of a "people's war" against a powerful domestic or foreign enemy has molded its operational art. First, central to operations are initiatives, designed to execute (and perpetuate the momentum of) its own operations within its own framework, by giving priority to creating chances to clarify the enemy's weak points through the exploitation of strategic, operational, and tactical environments. Second, offensives are aimed at striking the enemy's weak points through a series of rapid and unexpected concentrations of superior forces, encirclement, outflanking, and close night combat in waves to break the enemy's spirit and will, and physically destroy his large units. Third, the three-in-one system is utilized to deliver a devastating blow against the enemy through a skillful combination of fighting styles, troops, and services. Fourth, societal support under unified command of the party, the government, and the military is essential to secure operational logistical supplies.

The key is to fight flexible human resource-oriented operations to compensate for deficiencies in technology and logistics, or exchange human resources and vast territory for time—that is, to use the Chinese phrase, "to pit the weak against the strong." Regardless of whether it is total or limited war, human factors—intellectual, physical, and psychological—are decisive. This theme is the "cast-iron" framework of operational art. On the other hand, the above four components are always "flexibly" combined, since operations are complex military activities which are tractable in some respects and intractable in others. The successes and the failures of historical operations suggest a dialectical tractability-intractability pattern; keeping operational art open is the most rational way to fight successful operations. Despite valuable experiences, however, the relevance of traditional operational art to the PLA's contemporary operations has apparently become limited as a result of the revolution in military affairs. To meet new demands in a fast-paced world, the PLA needs a new "cast-iron" comprehensive operational art designed to explain, guide, and execute combined service and branch operations.

niandai dalianbing (Army-wide military training in the 1960s) (Beijing: Jiefangjun chubanshe, 1994), 296-97.

Revolution

A theoretical debate on criteria for judging truth, launched by reformers in the late 1970s, was designed to "emancipate the mind," "break dogmatic spiritual shackles," and restore the tradition of "seeking truth from facts" for justifying reforms.¹³ Much emphasis was on the issue of whether Mao's thought was still valid as a guide for modernization. Reformers adopted a pragmatic approach, vigorously criticizing the "two whatevers" policies (praising whatever policies Mao formulated and carrying out whatever instructions Mao issued), denouncing Mao's personality cult, and attacking some of his policies in order to remove "the whatevers faction" from power, consolidate their own power in the party, the state, and the PLA, and clear the path for reforms. On the other hand, they attempted to draw a theoretical demarcation between Mao's mistakes, which were viewed as deriving from "lack of practical experiences in political and economic reconstruction" and "divorcing theory from practice," and Mao's wisdom, which underlay party, state, and military legitimacy and infallibility (and thus also the reformers'); without it, the reformers' claim to control the party, the state, and the military might itself appear to be illegitimate. With this new perspective on Mao's thought, crafted to ensure the reformers' legitimacy, "seeking truth from facts" became the fundamental criterion for judging truth.¹⁴

The debate triggered the PLA's attempt to develop the new concept of "killing chickens by using a heavy sword" (*shaji yong niudao*), according to which the PLA would use overwhelmingly superior forces and firepower against a weak neighbor's invasion, and fight a quick battle to force a quick resolution. This provided the momentum for a reassessment of "military thought in the 1930s," "operational experiences in the 1940s," and "training methods in the 1950s, 1960s, and 1970s." In fighting against political opponents—"three types of persons" in uniform (those who had risen to higher positions by following the Lin Biao and Jiang Qing cliques; those who had serious factionalist ideas; and those who had engaged in beating, smashing, and looting)—or in distancing themselves from "the whatevers faction," senior generals strove to revolutionize Mao's operational art so as to shore up support for reforms. The revolution was intended neither to preserve all of

¹³"Practice as the Sole Criterion for Judging Truth," *Guangming Daily* (Beijing), May 11, 1978, 1.

¹⁴Yan, *Dang dui jundui juegui lingdao*, 136-39; and Zhang Jiaju and Lou Huanjia, *Junshi renshilun* (Military epistemology) (Beijing: Jiefangjun chubanshe, 1993), 361-76.

Mao's operational principles nor to abolish established military thought, combat experiences, and training methods. In fact, it was a way to consolidate their own political power in the PLA, whether they belonged to groups such as the "slip-away group," which drifted away from meetings supporting or denouncing Lin and Jiang and their followers; the "swivel group," which adjusted its posture to any changes in the political climate; or the "wind group," which stated that the past associations for which they were being attacked were "gone with the wind." The politically motivated revolution overlapped with the 1979 Sino-Vietnamese border conflict, a Chinese "people's limited war" against Vietnam designed to teach it a "lesson" for maintaining southern border order, while sustaining the Khmer Rouge regime in Cambodia. The conflict offered a test of Chinese operational art, not only in that it exposed anomalies in Mao's operational theories, but also in that it showed the necessity to theorize changes in war and operations to guide future war and operations against possible foreign (then presumed Soviet) invasion.

Initiatives

Traditional initiatives centered on the skillful creation of combat environments favorable for the strategically defensive PLA through calculations, manipulations, and dispositions to identify the powerful enemy's weak points. However, in the 1979 conflict, the strategically offensive PLA attempted to explore Vietnamese strong points in order to launch a broad frontal, preemptive strike and gain a quick resolution. This change in focus deeply frustrated the PLA, since it was difficult to clarify where the Vietnamese strong points were along the border.

Vietnam adopted an army-civilian joint defense, which involved "frontal linear defense" and "area-oriented defense," or deploying regular armies, local troops, and militias sustained by mass societal support along wide frontal areas with limited depth, while organizing counterattacks against the invaders. As Vietnam had limited troops for deployment along the border and limited mobile troops for a rapid response (its best troops were actively engaged against the Khmer Rouge), its border had large undefended space. To remedy the weakness, it gave priority to "people's war," in which regular forces, local troops, and militias coordinated with one another to strengthen border defenses through positional or guerrilla counterattacks in the jungle.¹⁵ This Vietnamese operational art partly reflected its rich experiences in the Vietnam

¹⁵Mao Zhenfa, ed., *Bianfang lun* (On border defense) (Beijing: Junshi kexue chubanshe, 1996),

War, wherein the United States favored conventional division-level operations, while Vietnam responded with infusions of its own regulars to create large-scale guerrilla operations. The war became a highly fragmented struggle to influence the population, with few large battles and no decisive ones until the end. Thousands of small-unit actions took place every day across Vietnam. Each played its part. The war had no fronts. Because American professional soldiers had been trained, equipped, and organized to fight a regular war with special emphasis on modern weapons, technical mobility, and concentration of firepower, they expected to search and destroy the enemy in large-unit combat. Facing guerrillas, their massive firepower and mechanized forces were poorly adapted to the terrain, guerrilla tactics, and requirements of an unconventional war. The United States thus failed to prepare for and failed to win in guerrilla warfare.¹⁶ Army-civilian joint guerrilla warfare was the essence of Vietnamese operational art.

Like the American soldiers before them, Chinese soldiers did not fully prepare for guerrilla warfare, either. They tended to make psychological, operational, and logistical preparations mobilizing soldiers and officers to discuss missions in searching for the best way to reach targets and organizing militias responsible for combat or noncombat duties. Unfortunately, they severely underestimated Vietnamese soldiers and American experiences in the Vietnam War. This underestimation, according to senior PLA commanders, sprang from old mind-sets and arrogance, as the PLA had trained their generals and officers, lectured them on strategy, operational art, and tactics, and supplied them with weapons and equipment. Some, if not all, of the commanders assumed to understand the relevant factors and traditional maxims, so they downplayed factors such as the Vietnamese soldiers' solid fortifications, their skills at guerrilla warfare, and their mastery of several types of infantry weapons. Chinese soldiers, on the other hand, were poorly trained, less experienced, and unfamiliar with guerrilla warfare against guerrilla warfare, partly because of the Cultural Revolution. Such underestima-

168; Ou Jingu, "Explorations of the Questions Related to Offensive Combat in Mountainous and Jungle Areas," in *Zhanshu fazhan xintan* (New explorations of tactics development), ed. Hao Zizhou, vol. 1 (Beijing: Junshi kexue chubanshe, 1988), 487-88; and Zhou Deli, "A Study of Future Offensive Combat in Tropical Mountainous and Jungle Areas in Light of the Self-Defense War Against Vietnam," in *Junshi xueshu lunwen xuan* (Selected academic papers on military studies), ed. Junshi xueshu zazhishe, vol. 2 (Beijing: Junshi kexue chubanshe, 1984), 536-37.

¹⁶Robert E. Osgood, *Limited War Revisited* (Boulder, Colo.: Westview Press, 1979), 40-43; Thomas C. Thayer, *War Without Fronts: The American Experience in Vietnam* (Boulder: Westview Press, 1985), 4; Stephen Peter Rosen, "Vietnam and the American Theory of Limited War," *International Security* 7, no. 2 (Fall 1982): 106-9; and Wang, *Zhanyi fazhan shi*, 694-700.

tion was also reflected in the way of preparing operations. Some soldiers were simply massed from construction sites or farm fields. On their way to combat missions, higher commands issued combat orders, restructured combat units, and distributed weapons. Even some commanders did not know their soldiers, and vice versa. These poor preparations directly contributed to the PLA's inability to handle Vietnamese "hit-and-run" tactics from the very beginning of the conflict. And apparently, they never did extract proper or useful lessons from their naive underestimation of Vietnamese troops. When the conflict ended, Chinese commanders continued to insist that they understood Vietnamese approaches to operations and that it was easy to deal with them.¹⁷ In actuality, the PLA's failure to use guerrilla warfare against guerrilla warfare severely thwarted its initiatives to create favorable combat environments and teach Vietnam the promised "lesson."

Offensives

Traditional Chinese offensives, as mentioned above, had stressed the concentration of superior forces to encircle and outflank the enemy and then to fight close, night combat to destroy him in a single blow.¹⁸ Operations in Vietnam, however, witnessed changes in operational objectives, from the traditional annihilation of large units to the occupation of key border targets through employing small units and strong firepower. The changes raised pivotal questions about how to manage offensives under contemporary conditions.

During operations, the PLA followed its tradition of concentrating su-

¹⁷Zhou Tianhong, *Ludi bianjing zuozhan zhanshu yanjiu* (A study of land border combat tactics) (Beijing: Junshi kexue chubanshe, 1995), 246, 255; and Zhang Zhixiu, "My Views on Strengthening Military Training in Tropical Mountainous and Jungle Areas," in *Junshi xueshu lunwen xuan* 1:390.

¹⁸Vietnamese strategy, operational art, and tactics were strongly influenced by the Chinese Communists. In April 1950, at the invitation of the Vietnamese Communist Party, China sent military advisors, led by Chen Gen and Wei Guoqing, to North Vietnam to help in its war against the French, and provide weapons and logistical support. According to China, the advisors were responsible for relating combat experiences in mobile and regular warfare, planning and organizing combat, and restructuring the Vietnamese army, but not commanding troops. Through a combination of mobile and guerrilla warfare, the Vietnamese army chose to advance and strike only when success was certain. It adopted a strategy of attrition that exhausted the French at Dien Bien Phu and won the final victory. In his summary of these victories, Vo Nguyen Giap stated that Mao's military thought made a great contribution to their victories. The Vietnamese army and people consequently studied Mao's thought, learned the PLA's combat experiences, and applied them in practice. See Han Huaizhi, ed., *Dangdai Zhongguo jundui de junshi gongzuo* (Military work of contemporary Chinese armed forces) (Beijing: Zhongguo shehui kexue chubanshe, 1989), 518-36; and Qu Aiguo, ed., *Yuan-Yue kang-Mei: Zhongguo zhiyuan budui zai Yuenan* (To resist U.S. aggression and aid Vietnam: China's support units in Vietnam) (Beijing: Junshi kexue chubanshe, 1995), 7-8.

perior forces, firepower, and logistical supplies across services and branches, since this method had repeatedly proven to be the most efficient way to fight a strong enemy with obsolete weapons in total or limited war. However, the operations in Vietnam appeared to contradict this tradition. The PLA, now armed with relatively advanced weapons, faced relatively weak Vietnamese regular armies, local troops, and militias. To destroy the large units in one swift blow, Chinese commanders tried to "use a heavy sword," but were perplexed by the questions of how many troops would be sufficiently heavy enough to destroy the enemy, as well as of who was the enemy. According to tradition, the extent to which Chinese forces could be concentrated relied mainly on the size of operations they would fight. Large-unit operations in the tropical jungle would waste resources, but small-unit operations would not easily achieve expected targets, since Vietnamese regular and local troops took advantage of fortifications and terrains favorable to them, while militias harassed Chinese rears and flanks. To calculate how many troops would be used in combat, it was argued that the PLA had to account for factors such as troops responsible for covering command posts, rears, and transportation lines, as well as those used for searching and destroying dispersed enemy soldiers and militias. But however superior their numbers, the PLA's combat troops still proved to be insufficient. Furthermore, in combat, it was difficult to make distinctions between militias (sometimes local troops) and civilians, since none of them wore "uniforms." But "they" constantly attacked Chinese troops, and threatened rears and flanks. The situation was further complicated by poor combat environments. The weather in the mountainous jungle areas was extremely hot and humid, and roads were too narrow to deploy large numbers of tanks, artillery, and armored vehicles. To avoid these problems, senior commanders argued that troops must conduct a quick, short war by concentrating their superior forces. In fact, the efforts to eliminate guerrillas by waging small-unit combat often resulted in dispersing rather than concentrating troops.¹⁹ Despite wasting resources, they managed to mass more troops and firepower than operations required, organized them into several echelons, and alternately struck key targets, while sending small-unit troops to destroy dispersed Vietnamese soldiers and guerrillas.

¹⁹Liu Shene, ed., *Xiandai jubu zhanzheng tiaojian xia de renmin zhanzheng* (People's war under contemporary local war conditions) (Beijing: Junshi kexue chubanshe, 1996), 85-89; Li Jihong, ed., *Jubu zhanzheng zhanyi zhengzhi gongzuo* (Political work in local war and operations) (Beijing: Guofang daxue chubanshe, 1992), 211-14; Zhang Zhixiu, "A Study of Several Major Issues for Future Combat in Light of Self-Defense Combat," in *Junshi xueshu lunwen xuan* 2:523-24; and Zhou, "A Study of Future Offensive Combat," 536-41.

Such operations required the encircling and outflanking of Vietnamese troops to assault their rear, while sustaining a frontal main attack. The tropical mountainous jungle helped increase secrecy, but also created difficulties. Relatively advanced mechanized troops with large numbers of armored vehicles, tanks, artillery, and trucks were unable to move easily in the jungle, although some units managed to conduct operational encirclement as deep as seventy kilometers behind Vietnamese defense lines along with support units. However, lack of advanced location systems and communications equipment often made troops lose their way. Moreover, the PLA was unable to fight its preferred combat at night, as Vietnamese troops were familiar with the strategy and were always on high alert against any possible night strikes. Conversely, long-range firepower strikes by daylight often reduced Vietnamese initiatives. Nevertheless, regardless of the great efforts to destroy Vietnamese main forces, the anticipated and planned large-unit operations were forced to revert to small-unit guerrilla warfare, with occasional surges of regular military action, in which Vietnamese troops harassed Chinese formations and inflicted heavy casualties on them.²⁰

The Three-in-One System

The traditional three-in-one system emphasized flexible fighting styles against the enemy's regular warfare. In contrast, the PLA's operations in Vietnam severely lacked combat flexibility and cooperation among branches. According to the Chinese high command, the conflict was a limited war aimed at destroying well-armed and trained Vietnamese regular troops who defended strategic points and vital communications lines. However, the PLA quickly discovered that once the Vietnamese defense "collapsed" (sometimes fortifications were simply abandoned), their units dispersed in the jungle, striking and harassing Chinese troops, communications lines, and rears. Such tactics forced Chinese regulars, local troops, and militias to reorganize into small combat units to search and destroy them, while securing logistical supplies, transportation lines, and rears. The small dispersed unit combat placed severe restrictions on waging combined operations designed for regular warfare.

Chinese regular warfare emphasized combined operations with coordination among infantry troops, artillery, and tanks, not among services. In theory, artillery and tanks provided firepower cover or support for infantry

²⁰Xu Shiyou, "Experiences in the Self-Defense Combat Against Vietnam," in *Junshi xueshu lunwen xuan* 2:505-6; and Han Huaizhi, "Experiences in the Self-Defense Combat Against Vietnam," *ibid.*, 488-91.

troops, but in operations they often lacked close cooperation as a result of poor training. Some artillery commanders did not know how to take advantage of the terrain, deploy combat formations, or perform combat duties. Although their technical skills were considered "fine" according to their own standards, their tactical and operational skills were poor because they misinterpreted their mission as mainly providing firepower support for infantry soldiers. Such a misinterpretation convinced them that they had no operational art and tactics or no autonomy to sustain infantry operations. This often led to friendly fire on infantry troops.²¹ Tank crews, like artillery troops, had no sense of combined branch operations. Without proper coordination, advanced communications equipment, and combined training, tanks and infantry troops were often disorganized in operations. Tank crews conducted their own battles without infantry support, while infantry troops launched their own assaults on Vietnamese troops without artillery and tank cover.²² These new issues stood in sharp contrast to Chinese experiences in previous wars, in which operations were fought in waves without or with little branch support, and showed the necessity of adapting the traditional three-in-one system to contemporary operations in foreign lands.

Societal Support

Traditional societal support focused on securing logistical supplies from the masses under the unified command of the party, the government, and the military. In the 1979 conflict, the PLA had poor societal support in its operations, although more than 320,000 militias were directly involved in combat missions. In the war zone, most local residents on either side of the border were minority nationalities, who shared cultures, languages, and religions. Because of these close ties, they were reluctant to sustain operations against friends or family members across the border. The PLA thus had to help local party organizations and governments "reeducate" the masses to provide traditional logistical support. Yet poor societal support, exacerbated by the severe geographic environments, undermined logistical supplies. Even though the PLA tried to maintain the ratio of combat forces and militias at about 1.76:1 in logistical support, the militias failed to provide sufficient ammunition, fuel,

²¹Song Chengzhi, "Striving to Build Modernized People's Artillery Troops," *ibid.* 1:250-52; Gao Cunxin, "My Views on the Guiding Principles for Restructuring Artillery Tactical Training," *ibid.*, 373-74; and Wang Jianmin, ed., *Zhuangjiabing jiceng zhengzhi gongzuo* (Political work at the grass-roots units of armored forces) (Beijing: Junshi kexue chubanshe, 1988), 368.

²²Huang Xinting, "A Serious Summary of Combat Experiences for Accelerating the Modernization of Armored Troops," in *Junshi xueshu lunwen xuan* 1:260-61.

food, and water. All materials needed for combat depended exclusively on soldiers, who carried their own ammunition, food, and water, or on militias, who carried supplies for soldiers. As a result, operations again fell within the old-style one-week offensive pattern of the Korean War. Insufficient logistical supplies were due, to some extent, to mismanagement or lack of a powerful command system—hundreds (sometimes thousands) of trucks and tanks were regularly jammed in a narrow jungle road for several days. The PLA had to utilize "21 percent of its combat soldiers" to protect these jammed roads or transportation lines.²³ Despite the problems, militias and civilian laborers made great contributions to operations in Vietnam. They joined combat missions responsible for carrying and supplying combat materials for the units at the regiment level and below, transporting wounded soldiers to the rear, and repairing or safeguarding roads and transportation lines with soldiers.²⁴ Nevertheless, the PLA realized that without full Chinese societal support, it would be unable to conduct successful human resource-oriented operations on foreign land, and its abject failure to mobilize the Vietnamese to back its "just" operations in their own homeland further weakened its anticipated objective of destroying the Vietnamese regular troops in one swift blow.

Assessment

The most important lesson that the PLA learned or relearned from these human resource-oriented, infantry-centered operations was the lack of a unified operational art compatible with contemporary border conflicts, along with issues such as poor adaptability, poor training, and the inability to properly handle weapons. Traditional operational art was merely a set of "cast-iron" principles that stressed a flexible application to land operations. Without a comprehensive operational art, commanders mechanically followed tradition, essentially to avoid political rather than military setbacks. In fact, political pressures narrowed initiatives to skillfully adapt principles to combat. Su Yu argued that Mao's operational principles were still "valid," though some were "invalid." It was therefore necessary to adapt traditional operational art to contemporary operations, which required the current generation of soldiers to refine theories for guiding war, operations, and engagements.²⁵ But even

²³Zhou, *Ludi bianjing zuozhan*, 145-46, 298-301; Mao, *Bianfang lun*, 251-54; Zhou Deli, "A Discussion of Several Issues Related to Combat Planning in the Gaoping Areas," in *Junshi xueshu lunwen xuan* 2:568-69; and Zhang, "A Study of Several Major Issues," 527-29.

²⁴Liu, *Xiandai jubu zhanzheng*, 85-86; and Li Yuan, "Views on Societal Support for Future War," in *Junshi xueshu lunwen xuan* 1:657-59.

²⁵Su Yu, "A Discussion of Combat Issues in the Early Stage of Future Anti-Aggression War," in

though Su raised the question about the relevance of Mao's operational art under contemporary conditions, commanders still managed training on the basis of Mao's principles rather than on the basis of combat conditions. Li Desheng and Yuan Jie were critical of the old mind-set commanders who blindly applied mobile, positional, and guerrilla warfare as the main forms of operations, regardless of specific situations; their bible for destroying the enemy was Mao's ten operational principles, with special attention on the concentration of forces. They also assumed that the enemy was isolated and that his night vision equipment did not work as they attempted to use the principles of encircling, outflanking, and night combat. As a result, training and war games were run like a carefully scripted stage play. Mao's military thought, they contended, was a science; yet his theory, based on particular cases, was not universal truth, and could not guide all training and combat.²⁶

To replace Mao's operational dogma, senior commanders sustained the concept of a flexible operational art, but accepted his "cast-iron" framework centering on initiatives, offensives, the three-in-one system, and societal support as the fundamentals, with only slightly different interpretations. According to them, the conduct of future war, operations, and engagements against foreign total or limited invasion must be based on their own combat model. In Song Shilun's words, if a war against foreign invasion broke out, "we will not accept any rule to define limits or boundaries for operations such as limited time, areas, and means. If the enemy launches an aerial attack, we will wage a land attack; if he attacks us from the east, we will respond from the west."²⁷ Unlike the traditional strategy of "luring the enemy in deep so as to conduct mobile warfare," the PLA would mainly fight "positional operations around borders" against foreign invasion. During operations, the rational concentration of superior forces and firepower for combat in waves was viewed as the surest way to totally annihilate the enemy, but "soldiers must be well organized, equipped, and trained."²⁸ Clearly, senior commanders were critical of Mao's "flexible dogma," in the name of revolutionizing operational art so as

Junshi xueshu lunwen xuan 2:24; and *Junshi xueshu zazhishe*, ed., *Junshi mantan* (A random talk about military work) (Beijing: Junshi xueshu zazhishe, 1985), 9-13, 29-32.

²⁶Yuan Jie, "Discussions on How to Use Mao Zedong's Military Thought to Guide Training," in *Junshi xueshu lunwen xuan* 1:327-32; and Li Desheng, "Making a Big Breakthrough in Training," *ibid.*, 339-40.

²⁷Song Shilun, "A Preliminary Discussion of Several Issues Related to Future Anti-Aggression Combat," *ibid.* 2:56.

²⁸Zhang Caiqian, "Thoughts on the Application of Active Defense Strategic Principles at the Early Stage of War," *ibid.*, 123-29; and Han Huaizhi, "A Great Turning Point of Strategic Guidance," *ibid.*, 136-37.

to make it consistent with ongoing political reform. This revolution contrasted sharply with the previous "critical dogmatism," based on Soviet military regulations, to professionalize the PLA. The "Soviet cast-iron regulations" did not help modernize the PLA; nor did "Mao's flexible dogma" make traditional operational art compatible with contemporary operations. A flexible operational art shorn of dogma was thus seen as a prerequisite for a real revolution in operational art.

The PLA did indeed attempt to separate Mao's operational dogma from his "people's war." Some people, Zhang Zhen explained, were skeptical of Mao's military thought because of the mistakes he committed during his later years. This was a big mistake.

In the past, [we] relied on the masses to fight "people's war"; in the future, [we] will continue to depend on them to fight "people's war." To conduct successful contemporary operations, however, [we] need to develop "unified operational art" for training and combat. Without it, troops will be "sovereigns' troops," guided by different principles in serving their "sovereigns."²⁹

Thus, the formulation of unified operational art allowed senior commanders to diplomatically display their loyalty to political reform, while preserving the "people's war" tradition. The significance of this politically motivated revolution in the late 1970s was conceptual change, designed to restore a set of more flexible operational principles to provide a rational guide for operations against potential foreign invasion. Nevertheless, in the end, the PLA simply utilized Mao's strategy of human resource-oriented total war to revolutionize his operational art in hopes of making it consistent with contemporary limited war operations. Thus, the "revolution" remained incomplete, since the PLA did not find a solution for swiftly killing weak "chickens" by employing "a heavy sword" (superior human and firepower resources) in future border or offshore conflicts.

The Search for a Unified Operational Art

In 1985, China finally abandoned its longtime assumption of fighting "an early war, major war, and nuclear war" on the basis of Deng Xiaoping's assessment of international strategic environments. Instead of the old mindset, a new assumption focused on preparing for local, limited war or low-

²⁹Zhang Zhen, "Several Issues Related to Training Reform," *ibid.* 1:343-48; and Song, "A Preliminary Discussion," 55-56.

intensity conflict on the periphery. To make it congruent with the strategic transformation, Beijing dramatically demobilized one million swollen forces (some simply became armed police troops), restructured services and branches, and upgraded weapons and equipment. The PLA became leaner, more combat-efficient, and relatively modernized. The changes in strategy, organization, structures, and weapons, however, required a new operational art consistent with contemporary local, limited war, potential or real, along the borders. Major military threats to national security, according to the PLA, were from the Soviet Union, who was then deploying over one million troops along the Sino-Soviet-Mongolian borders. This perception implied that the regions neighboring the Soviet Union, i.e., northeast, north, and northwest China, could be battlefields against a potential Soviet local and limited, rather than total, invasion.

To minimize the threat of Soviet nuclear weapons, Gao Rui asserted that the revolution in nuclear technology would undermine the dominant position of nuclear weapons as a principal means of combat, as they would be undependable, whereas conventional weapons would become decisive in future local, limited war. In addition, to maximize the political utility of splendid Chinese tradition under contemporary war conditions, he insisted that "one who possesses advanced conventional weapons but has no contemporary operational art cannot win local, limited war; yet one who has advanced conventional weapons and a contemporary operational art, but lacks the ideas of how to counter a 'people's war,' cannot win such a war, either."³⁰ Although the PLA orchestrated a massive disinformation effort to downplay the decisive roles of Soviet nuclear technology, advanced conventional weapons, and contemporary operational art, its dilemma then appeared to be its inability to systematize, theorize, and put into practice operational experiences and art to make them compatible with contemporary war, partly because of domestic politics, and partly because of the lack of sufficient counterforce and counter-value means to launch effective operations. Li Jijun accused "conservatives" of having blind faith in tradition, arguing that in modern times, there had never been a case in which a poorly organized and equipped army could defeat the enemy by simply following traditional operational art or imitating the enemy's operational art.³¹ Yet the consensus still saw the incorporation of

³⁰Gao Rui, "Several Issues Concerning Tactics Development and Research," in Hao, *Zhanshu fazhan xintan* 1:9-10.

³¹Li, *Junshi lilun yu zhanzheng shijian*, 149-57.

Soviet deep operations into Chinese operational tradition as a rational alternative. The PLA was determined to develop a unified operational art of "total deep, three-dimensional, multidirectional operations" (*quan zongshen, liti, duofangwei zhan*) to beat a superpower on its own soil.

Initiatives

Like Soviet deep operations, the PLA's deep operations emphasized initiatives to create favorable combat environments.³² Soviet deep operations figured prominently in the recasting of operational art to make possible a deep, swift offensive that relied on the exploitation of nuclear and conventional firepower. Along with operational nuclear weapons, tank forces suitable for rapid advances through regions subjected to weapons of mass destruction could be employed on the main axes of land operations and in offensives in conjunction with rocket troops, aviation, and airborne landings to seize or strike key objectives in the enemy's deep rear, making possible the rapid achievement of the most immediate operational objectives.³³ The changes shifted infantry and artillery coordination to combined service and branch operations, linear battles to air/land battles, and the focus on the front to simultaneous front and rear operations. Local and limited war thus became air/land, multidirectional, deep operations, which were designed to deliver a devastating blow against the enemy's front and rear.

In response to any Soviet attempts to pierce its front, drive deep into the rear, sever lines of communications, and destroy key targets, the PLA's calculations centered on "attacks on vital points," "three-dimensional operations with focus," "survivability," and "the balance between firepower mobility and force mobility."³⁴ "The vital points," it was believed, were vulnerable nodes: command posts; command, control, communications, and intelligence (C³I); weapon control systems; and electronic warfare troops. These soft targets had complicated structures and were part of a unified system. The

³²Ibid., 158-59; Sun, *Zhanyi xue jichu*, 259; and Yao Hongde, "The Soviet Army's Tactics Development," in Hao, *Zhanshu fazhan xintan* 2:569.

³³Peter H. Vigor, "The Soviet Union and the Future of Land Warfare: The Combined Arms Concept," in *Emerging Doctrines and Technologies: Implications for Global and Regional Political-Military Balances*, ed. Robert L. Pfaltzgraff, Jr. (Lexington, Mass.: Lexington Books, 1988), 143-44; Yu Waimin, "The Complications and Lessons of Soviet Military Reform During the 1930s," *Junshi lishi* (Military History), 1989, no. 2:19-24; Wang Baofu, "The Experiences and Lessons of the Soviet Military's Early Research on Reformulating Operational Art," *ibid.*, 25-28; and Yao, "The Soviet Army's Tactics Development," 568-83.

³⁴Huang Hanbiao, "Explorations of Total Deep, Three-Dimensional, Offensive Tactics," in Hao, *Zhanshu fazhan xintan* 1:251-53; and *Jiefangjun bao* (Liberation Army Daily), September 19, 1986, 3.

damage to one facet would hence likely lead to the collapse of the whole system, reduce the effectiveness of harder facilities, put the enemy in a less favorable position, and render him powerless. "Three-dimensional operations with focus" stressed that frontal land operations were still the focus. Due to increased firepower, "survivability," or avoiding or reducing casualties, would be a priority for all commanders. Maintaining a balance between "firepower mobility" and "force mobility" was essential for comprehensive combat effectiveness. Even though it emphasized attacks on the enemy's rear targets, the PLA's traditional operational art favored linear battles, frontal strikes, and force mobility, the latter of which was employed in lieu of shortages in technology. In contemporary combat, however, infantry soldiers could not catch up with firepower mobility, and their limited mobility in fact neutralized the effectiveness of firepower.³⁵

Manipulating resources was regarded as a way to paralyze the enemy's comprehensive offensives and defenses. Despite his superiority in technology, a potential enemy's weaknesses in war waged on Chinese soil included unfamiliarity with the terrain, undefended space created by field offensives and defenses, and vulnerability to the PLA's weapons, C³I, and logistical systems. Meanwhile, the PLA's capability to conduct deep operations would gradually be improved. Recently rearmed, relatively advanced, long-range neutralizing artillery could reach the enemy's deep rear; new tanks and armored vehicles would substantially increase mobility, defense, and firepower; and new anti-aircraft guns and battlefield/tactical missiles would form a fire network of high, medium, low, and ultra-low altitudes. As a consequence, further strengthened land/air mobility, assault capabilities, and three-dimensional combat effectiveness could eventually produce decisive, disarming effects. With experience in operations on home soil, the PLA would thus have a solid foundation for fighting deep offensive operations against an invader.³⁶

But the PLA understood that huge technological gaps remained between China and the Soviet Union. A superpower's smart bomb could destroy a tank, whereas Chinese artillery batteries needed to shoot perhaps as many as 180 shells to achieve the same results; its advanced helicopter gunships, fighters, and bombers could strike targets by using operational/tactical mis-

³⁵Huang Xuejun, Li Xiaolin, and Xiao Yuehong, "Opinions on the Tactics Development of Our Army in 2000," in Hao, *Zhanshu fazhan xintan* 2:89-94; and *Jiefangjun bao*, October 3, 1986, 3.

³⁶Sun, *Zhanyi xue jichu*, 293; Meng Jinxi and Wang Shenkui, "On Deep Strikes of Offensive Operations," in Hao, *Zhanshu fazhan xintan* 1:208-11; and Xu Zhilong, "On Deep Offensive Tactics," *ibid.* 2:254-56.

siles, whereas the effective range of Chinese anti-aircraft guns was too short to reach these aircraft; and its forces could fight deep, three-dimensional operations, whereas the Chinese heavily depended on linear, infantry, human resource-oriented operations with limited air or naval cover. The fundamental weaknesses inherent in the Chinese "short arms, slow legs" required the PLA to seek chances to swiftly strike and force an enemy to change his way of fighting.

Thus, it was postulated that skillful deployment would facilitate the crushing of Soviet offensives. Such deployment involved comprehensive defensive means such as constructing positions or fortifications in strategic areas and directions, organizing troops in echelon formations, coordinating air/land firepower, and placing obstacles in deep rears to defend key points, control linear areas, and block the air. The measures would facilitate resistance against Soviet attacks from all directions, and prevent their rapid breakthroughs against frontal positions by centering on space, time, and strength.³⁷ As traditional firepower in waves had been replaced by contemporary persistent shock firepower, resistance against such firepower on a three-dimensional battlefield was an issue of life and death.³⁸ To curb air/land firepower assaults and reduce casualties caused by conventional, nuclear, chemical, and biological weapons, it was recommended that combat units responsible for defense should take advantage of the terrain to construct solid positions, while launching counterattacks to change passive defense into active defense. In deep surprise attacks inside positions, soldiers were advised to adopt traditional ambushes, blocking action, surprise attacks, and counterattacks to destroy the enemy. Enemy movements outside defensive positions would be prevented by waging mine warfare or blocking action or by employing long-range firepower to strike mobile troops, command posts, control centers, and logistical support bases, thus disrupting his attack formations or at least delaying his attacks. Rapid responses thus facilitated the strengthening of deep defensive operations.

To achieve these objectives, operational emphasis was placed on the skillful management of relations between "frontal and rear defense," "holding

³⁷Sun, *Zhanyi xue jichu*, 304-5; Zhu Qi and Qin Xiangyou, "Explorations of a Total Deep, Three-Dimensional, Defensive System," in Hao, *Zhanshu fazhan xintan* 2:3; and Wu Changfu, Zhang Xiangchun, and Zhao Huansheng, "Preliminary Explorations of a Total All-Dimensional Defensive System," *ibid.*, 68-70.

³⁸Zhu and Qin, "Explorations of a Total Deep, Three-Dimensional, Defensive System," 4-6; Xiao Bingtao and Wu Daorong, "On Total Deep Defensive Tactics," in Hao, *Zhanshu fazhan xintan* 2:26-34; and Wu, Zhang, and Zhao, "Preliminary Explorations," 68-70.

positions and waging surprise attacks outside positions," "resistance against land strikes and resistance against air strikes," and "independently holding positions and emphasizing mutual support." Deep defensive operations contained two interrelated and interdependent areas: frontal and rear defense. Frontal defense was the focus of the defensive system, as Soviet assaults on deep rear targets were usually directed to support frontal attacks. As long as they could hold their positions, defensive units would be able to concentrate their strength to cut off Soviet offensive channels and crush their rapid breakthroughs. Although the Soviet Union might employ well-trained airborne troops to penetrate, outflank, and strike the PLA's deep rear, firm control over frontal positions would eventually stabilize combat lines and secure comprehensive defense. "Holding positions and waging surprise attacks outside positions" were designed to take advantage of defensive strength to disrupt the enemy's coordination, reduce his combat effectiveness, and strike his reserves and soft targets. Defensive units should block frontal attacks, preventing the frontal enemy from joining those who had penetrated, while organizing mobile firepower and troops to destroy the latter. To maximize land resistance, "resistance against enemy air strikes" was essential, but rested on anti-aircraft guns and limited battlefield/tactical missiles which constituted the PLA's "three-dimensional" defensive system. The Soviet main assault forces were mechanized infantry troops, which could pierce the PLA's defensive system and race into its rear so that its positions might become isolated and surrounded by Soviet troops. The combat units holding those isolated positions should have strong willpower in fighting independent combat, as well as a strengthened sense of mutual support in the effort to hold key positions.³⁹

The comparative study of operational strengths and weaknesses was designed to avoid the Soviet main strength and minimize frontal engagements as much as possible, while selecting vulnerable points to be disrupted. The most vulnerable targets, according to the PLA, were soft and hard targets in the deep rear. Swift strikes against them would give the PLA breathing space to undermine preemptive attacks, rebuild its operational capabilities, and smash the enemy's deep operations. But the identification of those points required excellent battlefield intelligence in order for the PLA to locate them quickly. The absence of technology necessary to collect information, along with the prospect of Soviet preemptive strikes and rapid breakthroughs, implied that

³⁹Cui Yafen, "Explorations of Area-Oriented Defense Structures in the Total Deep Defense System," in Hao, *Zhanshu fazhan xintan* 2:48-51; and Yang Baoyou, "A Preliminary Discussion of Area-Oriented Defensive Tactics," *ibid.* 1:63-66.

the PLA would not in fact be able to determine the exact locations of soft and hard targets. For the strictly military purpose of deep operations, Chinese initiatives thus became meaningless.

Offensives

A dominant feature of the PLA's deep operations was to launch Soviet-style deep, multidimensional, preemptive strikes or counterstrikes.⁴⁰ Senior commanders and military scholars held that deep operations were merely the extension of traditional operational principles such as encircling and outflanking in order to strike the enemy's weak rear points by penetrating his undefended or poorly defended space.⁴¹ Such operations were aimed at supporting a main frontal assault to destroy, if possible, the encircled enemy through operational cooperation between deep rear assaults and frontal attacks, land attacks and airborne shock, forces and firepower, and blitzes and surprise attacks.

The coordinated and cooperative operations were, in theory, waged by combined units with the support of limited operational/tactical missiles, artillery, and the air force to strike the enemy's deep rear or jam his radar and communications centers. But in practice, deep operations were essentially dependent on infantry troops, with limited air/land firepower support, in contrast to the pursuit of traditional linear land battles. As the systematic annihilation of the enemy required combat units to strike from different distances and places, the deployment of troops in multidirectional echelon formations could reduce time and distances between assaults and deprive the enemy of rest. Thus, small-combat unit operations were seen as an effective way to wage surprise attacks against the enemy's rear command posts or logistical centers, ambush his troops in movement, and strike his rear artillery batteries. As soon as they achieved their objectives, small combat units were expected to quickly withdraw or disperse from the battlefield.⁴² In addition, to avoid heavy losses, Li Jijun insisted, targets should be "selected," "small," and "isolated."⁴³

⁴⁰Sun, *Zhanyi xue jichu*, 259; and Yao, "The Soviet Army's Tactics Development," 569.

⁴¹Yang Yi and Yin Peilun, "Modernized Tactics and Our Army's Characteristics," in Hao, *Zhanshu fazhan xintan* 1:48-49; and Liu Hanguai and Qin Zhishen, "On Deep Offensive Combat," *ibid.*, 224-25.

⁴²Sun, *Zhanyi xue jichu*, 354-55; Gu Jiaxiang, Xu Jianming, and Wang Chuanxin, "On Offensive Activities in Field Positional Combat," in Hao, *Zhanshu fazhan xintan* 2:275-77; Hu Xianghong, "The Strengthening of Offensive Activities in Defensive Combat," *ibid.*, 288-90; and Wang Shuen, "On Several Combat Methods Related to Frontal Surprise Attack Areas in Solid Positional Defensive Combat," *ibid.*, 307-10.

⁴³Li, *Junshi lilun yu zhanzheng shijian*, 159-60.

In contrast to traditional encircling, outflanking, and close combat, deep operations gave priority to striking the (Soviet) rear with the defensive objectives which exploited operational space and time and facilitated strategic transitions from defense to offense. However, in real operations it was not easy to strike such targets. The Soviet Union could move its almost completely mechanized second echelon troops into the salient quickly in order to take up defensive positions along exposed flanks. The employment of precision munitions would further strengthen protection of flanks. The a priori study of the terrain and the proper utilization of combat intelligence would also help clarify where defenders' counterstrikes were likely to be delivered and allow the preparations necessary to thwart them. Equally important, the Sino-Vietnamese border conflict showed that under operational stalemate conditions, the PLA had no chances to organize large-scale counterattacks on the enemy's deep rear, since jigsaw environments made it impossible to mass troops, conduct reconnaissance, and stock ammunition for operations. Even if the targets were reached, it would be extremely difficult to withdraw troops from the enemy's rear, as the enemy would immediately launch firepower counterattacks against deeply penetrated troops.⁴⁴ These issues seriously undermined China's premature offensives against Vietnam, and would continue to challenge China's offensive scenarios against Soviet invasion.

The Three-in-One System

Unlike Soviet deep operations, which were dependent on combined mobile forces under long-range air/land firepower cover, the PLA's deep operations rested on combined mobile, positional, and guerrilla warfare, in which regulars, local troops, and militias cooperated with one another to strike or harass the enemy's rear and front under limited firepower cover offered by ground, naval, and air forces.⁴⁵ In reality, they remained infantry-centered land warfare. Central to Chinese deep operations was a unified command designed to reduce command layers, control operations, and increase rapid responses. Such command was based on a flexible combination of "centralized command for big battles" and "decentralized command for small battles," in an effort to maximize the potential combat initiatives of higher and lower-ranking commanders. Under these commands, combined military and civilian

⁴⁴Qian Shugen, "A Study of Contemporary Offensive Combat Based on Self-Defense Operations Against Vietnam," in Hao, *Zhanshu fazhan xintan* 1:337-47.

⁴⁵Li, *Junshi lilun yu zhanzheng shijian*, 172-80; and Jiang Fangran and Li Yinnian, "New Changes in Combined Tactics," *ibid.*, 83-85.

resources would provide strong professional, technical, and logistical support to ensure operational successes.⁴⁶

In missions, combined regular, local, and militia forces would take advantage of night and terrain blind angles to penetrate deep into the Soviet rear. Once there, they would swiftly assault vital points such as roads, bridges, and tunnels. The missions could be reinforced by utilizing the air force for a "limited air blockade" to secure a swift blow. As the enemy had strong land and air mobility, the PLA acknowledged that reliance on land encirclement, associated with a limited air blockade, might not result in the total destruction of the encircled enemy. To strengthen a limited three-dimensional blockade, it had to coordinate air/land firepower and troops.⁴⁷ Deficiencies in technology, however, weakened prospects for Chinese offensive combat effectiveness.

Despite changes in weapons, the three-in-one system was also anticipated to improve Chinese defense. The establishment of multi-echelon and combined troops would facilitate countering Soviet deep operations; small combined units would harass their forces, tanks, armored vehicles, and artillery at the rear; and mobile, three-dimensional, multilayered, and area-oriented firepower would likely reduce firepower threats from their deep rear and the air. The new interpretation of the three-in-one system convinced the PLA that combined deep operations should focus on selected key targets in order to account for variability in a main defense direction, enabling changes in defense directions according to Soviet main attacks.⁴⁸ Such operations required exceptional C³I linking small units that could be maneuvered on the battlefield to strike targets. However, the absence of powerful C³I reduced the potential effectiveness of the PLA's deep operations.

Societal Support

The cornerstone of the PLA's deep operations was societal support that sharply contrasted with Soviet professional logistical support. The defensive nature of China's strategy provided a foundation for and justified the mobili-

⁴⁶Xu, "On Deep Offensive Tactics," 261-62; Huang Hanbiao, "Explorations of Total Deep, Three-Dimensional, Offensive Tactics," in Hao, *Zhanshu fazhan xintan* 1:253; and Sun, *Zhanyi xue jichu*, 362-72.

⁴⁷Hu Wenlong, ed., *Xiandai junbingzhong zhanshu* (Contemporary service and branch tactics) (Beijing: Junshi kexue chubanshe, 1991), 13.

⁴⁸Zhang Xiucui, Xiang Fuchang, and Li Shubing, "On Organizational Coordination of Total, Deep, Three-Dimensional Defense," in Hao, *Zhanshu fazhan xintan* 2:381-89; and Han Xianhe and Li Jianfang, "A Preliminary Discussion of Three-Dimensional Defense," *ibid.* 1:83-87.

zation of masses. The guidelines for logistical support under local, limited war conditions were "one logistical system for all the services" (*sanjun yiti*), "the compatibility of military logistics with civilian supply" (*junmin jianrong*), and "the integration of logistics for peace and war" (*pingzhan jiehe*). *Sanjun yiti* was aimed at facilitating the movement of supplies across services and branches, while reducing administrative layers. This logistical system was sustained by a larger military-civilian network: the PLA stockpiled only weapons and key spare parts, while the civilian auxiliary provided other war and operational materials, and masses undertook noncombat missions such as the construction of field positions and the deployment of barriers to block or slow Soviet tanks and mechanized infantry troops.⁴⁹ This logistical network for war and peace was and is under the joint command of the party, the government, and the military.⁵⁰ Societal support of this kind would, it was hoped, ensure logistical supplies for deep operations.

However, the old belief in the total mobilization of masses, nurtured by ideology and a history of war, clearly encouraged the PLA to follow the traditional way of operations to enlarge operational space and time by extending fighting to close, night combat in the enemy's deep rear that would reduce the effectiveness of his firepower and attrition, while sustaining frontal resistance or breakthroughs. Such operational tradition never explained how to wage successful deep operations without sufficient air/ground firepower cover, reliable C³I, and secured logistical support.⁵¹ The lack of those capabilities made its highly anticipated deep operations less than ideal. The only possible solution appeared to be to fight human resource-oriented total war operations against Soviet local, limited invasion.

⁴⁹Xu, "On Deep Offensive Tactics," 260-62; and Huang, "Explorations of Total Deep, Three-Dimensional, Offensive Tactics," 253.

⁵⁰Peng Guangqian, ed., *Deng Xiaoping zhanlue sixiang lun* (On Deng Xiaoping's strategic thought) (Beijing: Junshi kexue chubanshe, 1994), 263-70; and Guo Qiqiao and Yao Yanjin, eds., *Jundui jianshexue* (Military building) (Beijing: Guofang daxue chubanshe, 1991), 419-23.

⁵¹The PLA's discussion of deep operations appears to be an academic debate on operational art, since a five-point directive for military training issued by the General Staff Department in 1988 does not even mention the necessity of deep operations training. The directive states: first, training is to focus on increasing the combat readiness and effectiveness of troops under contemporary conditions, i.e., for local, limited war. Second, primary emphasis is to be placed on combat units on alert, especially key units on alert and frontier and coastal units at strategic locations, in order to transform them into well-trained, rapid-response forces with strong combat effectiveness. Third, training is to be geared to different enemies originating from different strategic directions in order to master the art of command and combat tactics with available weapons and equipment. Fourth, training will be rigorous, strict, and geared to the needs of actual combat, with special attention to basic training, as this relates to each individual soldier, tank, canon, radio, aircraft, and ship. Fifth, officer training is to be directed at increasing combined combat effectiveness. See Yan, *Liushi niandai dalianbing*, 316-17.

New Challenges

In the 1990s, the clash of Chinese and American (Western) cultures has become a dominant issue in reforms. To preserve its traditional but socialist values, China has rejected the American concepts of individual liberty, human rights, and democracy, since these, together with other closely related issues such as China's most-favored-nation trading status, its failure to host the 2000 Olympic Games, its denied access to membership in the World Trade Organization, and the upgrading of U.S.-Taiwan ties, have been colored by American domestic politics. The political, ideological, and economic threats aimed at fostering "peaceful evolution" may not necessarily lead to war, but may render China more unstable.⁵² Deep concerns over such threats, along with the successful operations against Iraq waged by U.S.-led coalition forces in 1991, have contributed to the PLA's serious study of the air/land battle doctrine, in order to understand the American way of fighting. Even though the PLA insists that the United States is not an immediate enemy, the doctrine does raise questions about the effectiveness of Chinese "total deep, three-dimensional, multidirectional operations" under high-tech, limited war conditions. As a result, this doctrine has now become the measure that the PLA employs to determine its combat effectiveness.

To win a high-tech, limited war, the consensus among Chinese senior commanders and military scholars clearly backs the idea of "conducting comprehensive resistance, winning through protracted operations" (*zhengti kang-ju, chijiu zhisheng*). This new "old idea"—people's war under high-tech conditions—was deemed the best weapon to curb American-style high-tech, limited war. For the PLA, the most vulnerable point of high-tech, limited war lies in "limits." To reduce high costs at the very beginning of the war, a superpower may take all necessary means, including strategic weapons, and strike strategic targets at the enemy's deep rear in order to achieve his limited strategic objectives in the shortest possible time. Chinese deep operations must center on this vital point, through both expanding operational space and time and reinforcing army-civilian resistance, if they are to gain the final victory in a high-tech, limited war.

⁵²Peng Guangqian, ed., *Zhongguo weishenme shuo bu?* (Why does China say no?) (Beijing: Xinshijie chubanshe, 1996), 278-84; and Guofang fazhan zhanlue xue jiaocheng bianxiezu, *Guofang fazhan zhanlue xue jiaocheng* (The textbook of developmental strategy for national defense) (Beijing: Guofang daxue chubanshe, 1990), 52-62.

Initiatives

The PLA's initiatives in high-tech, limited war are designed to identify weaknesses inherent in the air/land battle doctrine, but high-tech, limited war ironically challenges this traditional approach.⁵³ Such war stresses synchronized operations under a joint, combined, and unified command responding to a supreme political authority. The objective is to neither destroy the enemy, nor occupy his territory, but to devastate his specific political, economic, and military targets. In other words, it is to collapse the enemy's will and avoid, if at all possible, the use of nuclear weapons, including theater nuclear forces, but more particularly, strategic or central nuclear systems.⁵⁴ This can be achieved by fighting combined service and branch operations linking close, rear, and deep battles into an operational whole, which relies on firepower and attrition to keep combat losses as low as possible, while inflicting heavy casualties on the enemy. The challenge perplexed senior PLA commanders and military scholars. Some argued that the enemy would be "invisible," "untouchable," and "indestructible," as a result of long-distance, high-altitude, and composite armor weapons, and that it would be impossible for an army equipped with obsolete weapons to conduct such a war. Others asserted human factors would remain decisive in high-tech, limited war, since "soldiers control high-tech weapons, high-tech weapons do not control soldiers." As Deng Xiaoping stated, "there is no such thing that computers can replace field commanders."⁵⁵ Despite the controversy over weapons and soldiers, both sides emphasized initiatives to calculate strengths and weaknesses, and create

⁵³Jiang Chuan, "The Limits of U.S. Army Combined Operations," in *Meijun lianhe zuozhan lilun yanjiu* (A study of U.S. combined operations theories), ed. Li Zhiyun (Beijing: Guofang daxue chubanshe, 1996), 93-101.

⁵⁴Carl G. Jacobsen, *Strategic Power: USA/USSR* (London: Macmillan, 1990), 347; Jacob W. Kipp, "Conventional Force Modernization and the Asymmetries of Military Doctrine: Historical Reflections on Air/Land Battle and the Operational Manoeuvre Group," in *The Uncertain Course: New Weapons, Strategies and Mind-Sets*, ed. Carl G. Jacobsen (Oxford: Oxford University Press, 1987), 143-46, 154-55; Lawrence Freedman and Efraim Karsh, "How Kuwait Was Won: Strategy in the Gulf War," *International Security* 16, no. 2 (Fall 1991): 40-41; Michael J. Mazarr, Don M. Snider, and James A. Blackwell, Jr. *Desert Storm: The Gulf War and What We Learned* (Boulder: Westview Press, 1993); Wayne K. Maynard, "The New American Way of War," *Military Review* 73, no. 11 (November 1993): 5-7; Li, *Meijun lianhe zuozhan lilun yanjiu*; Dai Jinyu, "Reflections on Solutions for Conventional High-Tech, Limited War," in *Gaojishu jubu zhanzheng yu zhanyi zhanfa* (High-tech, limited war and operational art), ed. Guofang daxue keyanbu (Beijing: Guofang daxue chubanshe, 1993), 50-51; and Liu Longguang, *Gaojishu junshi shijie* (High-tech military world) (Beijing: Guofang daxue chubanshe, 1993), 39-49.

⁵⁵Li Jisong, "Strengthening Confidence in Winning High-Tech People's Limited War with Available Weapons," in *Gaojishu tiaojian xia jubu zhanzheng zhengzhi gongzuo yanjiu* (A study of political work in high-tech, limited war), ed. Li Jisong (Beijing: Guofang daxue chubanshe, 1994), 65; and Zhang Pang, "Challenges and Solutions for Political Work in People's War Under High-Tech, Limited War Conditions," *ibid.*, 79.

chances to strike the enemy, rather than conducting decisive operations in the sense of "confronting the tough with toughness." According to calculations, the air/land battle doctrine was not suitable to "urban warfare," "jungle and irregular warfare," and "offshore warfare." The anomalies suggested that the PLA might conquer the enemy by "creating false targets," "hiding troops and equipment," and "taking advantage of environments." Creating fake targets such as massed troops, command posts, tanks, artillery, and missile sites would produce misperceptions, undermining the enemy's attempts to identify the PLA's intentions. Hiding troops and equipment in designated places either through the construction of underground compounds, shelters, and tunnels, or through the camouflage of radar stations, missile sites, and communications centers, would facilitate surprise attacks in night combat. Poor environments such as complicated border terrain, mountains, and jungles, and harsh weather, would weaken the effectiveness of the enemy's high-tech weapons, while favoring offensive operations with obsolete weapons. A combination of these elements would thus eventually lead to expanding operational space and time so as to turn high-tech, limited war into total war.⁵⁶

These objectives require the PLA to manage the interplay of "exterior-interior," "offensive-defensive," and "positional-mobile" combat. "Exterior-interior" operations would resist the enemy's frontal attacks and prevent his airborne troops landing at the deep rear, while striking his rear echelons, reserves, and other targets. "Offensive-defensive" operations would be devoted to constantly assaulting the enemy's deep rear. Thus, the best defense would be offense; in other words, only through swift attacks on the enemy's deep rear could the PLA enlarge operational space and time and generate initiatives to conduct comprehensive operations.

High-tech, limited war requires limits. The limits would, as senior commanders and military scholars assume, create "safe havens for the civilians and the military," which facilitate attacks or counterattacks on the enemy's poorly defended deep rear. If the PLA simply accepted implied limits and restrained its interior defense and offense within limited combat areas against enemy strikes, it would surely be beaten on the battlefield. To shift the center of gravity, it must open up a second battlefield to smash the enemy's offensives. The solution has been to fight a "people's limited war," rather than a

⁵⁶Wang Dongming, "A Preliminary Discussion of Utilizing Deception to Guide Our Operations Under High-Tech Conditions," in *Gaojishu jubu zhanzheng yu zhanyi zhanfa*, 270-72; and Liu Weiguo, *Zhanzheng zhidao yu zhanzheng zhidao guilü* (War guidance and laws for directing war) (Beijing: Jiefangjun chubanshe, 1995), 10-13.

limited war within the enemy's framework.⁵⁷ The premise for conducting such a war would be to understand the enemy. Traditionally, information collection depended on infantry soldiers and mobilized masses, but this did not fit the requirements of high-tech, limited war. Instead, the PLA now intends to utilize advanced means such as satellite and electronic, air, and radar reconnaissance, and mobilized masses to collect information. This combined "contemporary" and "traditional" approach would compensate for inferiority in gathering information.⁵⁸ Yet, even supposing it gained all the information it needed, Liu Jingsong acknowledged that the PLA still lacked a "unified intelligence unit" under regional, combined operations command to collect, store, and disseminate information, because such a command would be a co-ordination center, not a command center.⁵⁹ Thus, knowing the enemy might not lead to destroying him. Conversely, the revolution in military technology might in fact make the enemy indestructible, in that he could fight long-distance, unobserved, and digitized operations through the employment of operational missiles, stealth aircraft, and sensor and data-fusion technologies. The operations would then become "cleaner" by reducing the casualties and collateral damage normally associated with traditional combat. However, due to its operational tradition, the PLA has not seemed to have taken these scenarios seriously.

Offensives

The U.S. air/land battle doctrine weakens Chinese traditional offensives designed to systematically destroy the enemy's large units.⁶⁰ The PLA became concerned about the growing mismatch between high-tech and traditional operational objectives. Because it would be unable to determine where

⁵⁷Hu Jianming, "A Preliminary Discussion of Mao Zedong's Military Thought for Directing Our Combat Under High-Tech Conditions," in *Mao Zedong junshi sixiang zai Zhongguo de shengli yu fazhan* (Victory and development of Mao Zedong's military thought in China), ed. Guofang daxue keyanbu (Beijing: Guofang daxue chubanshe, 1994), 757-62; Ma Fengtong, "New Changes and Solutions for Conducting Defensive Operations Under High-Tech Conditions," in *Gaojishu jubu zhanzheng yu zhanyi zhanfa*, 10-15; Lian Minglun and Zhao Youxin, "A Preliminary Discussion of Comprehensive Ideas for Our Combat in Future Combined Operations," *ibid.*, 90-91; and Jiang Chuan, "On Several Questions Related to Mobile Operations Under High-Tech Conditions," *ibid.*, 175-77.

⁵⁸Zhang Youxia, "On Night Combat Under Modern Conditions," in *Gaojishu jubu zhanzheng yu zhanyi zhanfa*, 245-48; and Xue Yanxu and Bao Yingxiang, "Reflections on Operational Questions in High-Tech, Limited War," in Li, *Meijun lianhe zuozhan*, 64-67.

⁵⁹Liu Jingsong, "Explorations of Command Issues Related to Combined Service and Branch Combat at the War Zone Level," in Guofang daxue, ed. *Jundui zhihui lilun jijin* (Collected papers on military command theory) (Beijing: Guofang daxue chubanshe, 1992), 16.

⁶⁰Wu Mandian, "A Preliminary Analysis of U.S. Army Land Operations Characteristics," in Li, *Meijun lianhe zuozhan*, 124-25.

the enemy would strike, it could not afford the deployment of huge troop numbers along borders or rears to protect presumed key targets or launch counterattacks. The dispersing of limited resources along overextended borders or in vast rears would only contribute to losing initiatives. Moreover, operational limits would severely constrain the PLA's mobility and minimize its attempts to translate defense into offense, but would create chances for the enemy to wage quicker, shorter, and more decisive battles. Thus, instead of passive defense, it was suggested that mobile counterattacks might be a rational solution, requiring the deployment of limited troop numbers "in possible foreign invasion directions" or "at hot spots along the border and in the rear." The main operational forces would be located "at appropriate places of strategic, operational depth to launch flexible counterattacks."⁶¹ The bottom line was to ensure that the enemy would not penetrate deeply into China.

Deep operations were deemed an effective way to smash high-tech, limited war. According to the PLA's own statistics, in the Gulf War, the coalition forces' deep, incessant air bombing destroyed twenty-six Iraqi rear command posts, 75 percent of its communications centers, 44 percent of its airfields, and severed supply lines which connected the front with the rear. The figures indicate that secured deep defense was the foundation for waging strikes against the enemy's deep rear. However, the effectiveness of counterattacks relied on the quality of weapons and soldiers, not on numbers. This change further generated concerns about the traditional approach to the concentration of superior forces. The operational concentration of superior forces was normally adjusted "within a group army," in the sense of giving priority to a main combat direction or main assault troops by increasing the numbers of infantry troops and weapons. Forces in the main assault direction were strengthened, while forces at other places or directions were weakened; comprehensive combat effectiveness was thus reduced. As the concentration of forces rarely involved other group armies, it would consequently be difficult to effect operational superiority. Moreover, high-tech war required the concentration of not only forces, but also firepower and technology. It thus became necessary to build "reinforced group armies," by "transferring crack troops and advanced weapons across the PLA" in order to narrow technological gaps between the PLA and the enemy. Such forces could then be used to destroy the enemy's hardware and software.⁶²

⁶¹Xue and Bao, "Reflections on Operational Questions in High-Tech Limited War," 59-60.

⁶²*Ibid.*, 61-63; Jiang, "On Several Questions Related to Mobile Operations Under High-Tech Conditions," 177-79; and Qiu Guijin, "Several Issues Related to Following and Developing

An immediate question emerging from the concentration of superior forces was how to balance the relationship between concentration and dispersion. If forces were overconcentrated in operations, they would be targets of the enemy's powerful firepower, so human waves were no longer the benchmark of combat effectiveness. Conversely, combined, decentralized, and autonomous combat units at the regiment or division level might fight successful close, night combat in the enemy's deep rear. However, technological innovations substantially increased operational transparency. Night no longer sheltered mass soldiers armed with obsolete weapons.⁶³ The worst nightmare was if an offensive battle required a joint action of several autonomous combat units, how they could be informed without reliable C³I, how they could be concentrated without sufficient air cover, and how they could be deployed to the designated battlefield without efficient force projection capabilities. Traditional offensives did not offer any solutions for these new issues.

The Three-in-One System

The U.S. air/land battle doctrine undermines the effectiveness of the PLA's traditional three-in-one system. In high-tech, limited war, the enemy utilized precision missiles and the air force to sustain independent, massive, and incessant raids, sending only small numbers of infantry soldiers or none at all into combat in order to force a quick resolution. War was smaller, quicker, and more decisive.⁶⁴ In contrast, China has a vast territory, rich resources, and strong mass soldiers armed with obsolete weapons, but it might be unable to employ its strengths to execute traditional warfare. Despite this sharp contrast, the PLA maintained that regular armies equipped with relatively advanced weapons were the main force; that local troops were secondary; and that militias were complementary. An optimal combination of them was still seen as a comprehensive force with the ability to win a high-tech, limited war.⁶⁵ To achieve this, the PLA tried to have a focused development. The air force would be the center of services, with special attention to early

Our Military Theories in Accordance with High-Tech War," in *Mao Zedong junshi sixiang*, 775-76.

⁶³Yang Guochuang, "A Preliminary Discussion on the Nature of Operational Defense, Prolongment, and Attrition Under High-Tech, Limited War Conditions," in *Mao Zedong junshi sixiang*, 92-101; and Deng Lianfang, "Our Operations Should Adopt Operational Art of 'Exhaustion First, Annihilation Second' Under High-Tech Conditions," *ibid.*, 106-11.

⁶⁴Bao Zhiyun, "A Preliminary Discussion of U.S. Army Combat Theory of Decisive Battles," in Li, *Meijun lianhe zuozhan*, 90-92.

⁶⁵Zhang, "Challenges and Solutions for Political Work," 82-84.

warning command and communications systems, air combat arms capable of rapid response, night, all-weather, ultra-low flying capabilities, long-range air transport assets, in-flight refueling capabilities, and air defense systems. The center of branches would be developing various means of electronic warfare and countermeasures. Among combat troops, operational crack forces would involve ground rapid response forces, naval mobile special forces, and long-range air striking forces.⁶⁶ In operations, the special rapid response mobile forces would be expected to be closely associated with local troops and militias. But senior commanders and military scholars were increasingly cautious about the functions of militias, as they would more likely be used for logistical support, rather than traditional guerrilla warfare.

Without strong air power, the PLA contended that it would be very difficult to smash the enemy's air/land battles or conduct large-scale ground operations. To make matters worse, China's ineffective air force, designed to provide firepower support or cover for ground operations, was often dispersed, and in fact assigned to protect combat front lines.⁶⁷ The poor quality of Chinese aircraft, along with the inadequacy of comprehensive firepower to fight independent operations, forced the air force to seek "local air superiority" (*jubu zhi kong quan*), rather than "operational air superiority" to ensure ground force mobility, massing, and logistical supply lines.⁶⁸ Despite these fatal weaknesses, antiquated aircraft were still expected to play a key role in air offense/defense. An inability to break through the enemy's air defense, together with limited access to accurate and timely information about the enemy's operational or tactical deployment and movement, might discourage the Chinese air force from conducting "limited deep strikes" (*youxian zongshen daji*).⁶⁹ In finding easy targets, the PLA held that airborne warning and control (AWAC) platforms and in-flight refueling tankers might be ideal ones,

⁶⁶Guan Jixian, "The Operational Characteristics of High-Tech, Limited War and Their Great Impacts on Operations," in *Gaojishu jubu zhanzheng yu zhanyi zhanfa*, 40.

⁶⁷Dai Jinyu, ed., *Kongjun zhanlue xue* (The science of air force strategy) (Beijing: Guofang daxue chubanshe, 1995), 79-81.

⁶⁸Shambaugh, "China's Military in Transition," 293-96; Paul H.B. Godwin, "From Continent to Periphery: PLA Doctrine, Strategy and Capabilities Towards 2000," *The China Quarterly*, no. 146 (June 1996): 478-82; Larry M. Wortzel, "China Pursues Traditional Great Power Status," *Orbis* 38, no. 2 (Spring 1994): 168-70; Desmond Ball, "Military Acquisitions in the Asia-Pacific Region," *International Security* 18, no. 3 (Winter 1993/94): 86; Zhang Honghai, "Explorations of Air Force Combat Methods in Operations Under High-Tech Conditions," in *Gaojishu jubu zhanzheng yu zhanyi zhanfa*, 149-50; and Hu, *Xiandai junbingzhong zhanshu*, 439-41.

⁶⁹Hu Siyun, "Adaptation to the Requirements of Three-Dimensional Warfare and Increases in Comprehensive Combat Effectiveness: Explorations of Air Combat in Combined Operations," in *Gaojishu jubu zhanzheng yu zhanyi zhanfa*, 161.

since they were not equipped with weapons. Their destruction would likely paralyze the enemy's command, bombing, and air strikes.

Such a mission would call for unified command and control of services and branches in order to combine two separate ground and air operations into one. Due to the absence of advanced, reliable C³I, combat units would have to adopt some backward but practical methods such as "secret signals," "light," and "sound" to ensure effective communications between air and ground forces; or the air force could also send liaison groups to division level units for coordination. Sometimes, these methods did not work due to poor understanding between different units.⁷⁰ Nevertheless, the valuable discussion of the three-in-one system concerned the combat role of the air force in human resource-oriented operations. The PLA clearly understands that without a strong air force, it is impossible to win a high-tech, limited war.

Societal Support

American-style high-tech, limited war raises serious questions about Chinese traditional societal support for ensuring logistical supplies, but a "people's war" remains an essential part of the PLA's operational art. As Jiang Zemin argues, "In accordance with characteristics of limited war under contemporary technology, especially high-tech conditions, the PLA should thoroughly study and actively search for laws to guide contemporary people's war and develop operational art to defeat the enemy with obsolete weapons."⁷¹ The rapid development of military technology has not fundamentally changed the Chinese perception of "people's war"; it has only added some new meanings. Accordingly, the new focus of "people's war" is on "comprehensive national strength." To sustain war, it needs not only "small combined military forces" to assume combat duties, but "large combined societal forces" responsible for logistical and combat support. The expected high expenditure of large amounts of arms, ammunition, fuel, food, and water requires the PLA to constitute an enlarged logistical support system to ensure continued operations. The establishing of a chain of command, composed of the party, the government, the military, and police from the war zone to the district or county level, would reduce the red tape related to military and civilian "feuding hierarchies" (*tiaotiao*) and "territorial units" (*kuaikuai*), and strengthen ties

⁷⁰Zhao Kaizhong, "Reflections on Air Combat Command Laws," in *Jundui zhihui lilun jijin*, 555-62.

⁷¹Li, "Strengthening Confidence," 64.

among soldiers, party organizations, governments, militias, and civilians.⁷² Under this command, a civilian logistical network would provide operational support such as transportation, medicare, communications, and maintenance.⁷³ On the other hand, the PLA was determined to restructure logistical command and forces to make them consistent with high-tech, limited war operations. To strengthen more sustainable logistical support capabilities, it readjusted the internal structures of regional logistical command to give top priority to rapid response logistical support within hot spots, the ratio of logistical forces between and within war zones so as to give top priority to a focused war zone and a particularly important direction, and the ratio of service and branch logistical forces to give top priority to the navy, the air force, and the second artillery. Senior commanders and military scholars further recommended "establishing organizationally distinct and high priority rapid support brigades and mobile supply centers for rapid response combat troops operations," "building high-tech-oriented logistical reserves," and "improving mobility, C³I, and survivability of logistical troops."⁷⁴ Despite lack of funds, the PLA gradually moved toward establishing professionalized logistical troops to secure operational support. In its view, the combination of civilian-military networks and professionalized logistics would facilitate fighting and winning a high-tech, limited war.

Again and again, the PLA itself has become concerned about the future ramifications of American political, ideological, and economic threats to China's national security. The intensive study of the air/land battle doctrine shows its determination to crush high-tech, limited war through "conducting comprehensive resistance, winning through protracted operations." This principle reflects the different agendas of traditional human resource-oriented operations, aimed at prolonging operational space and time to economically wear the enemy down, and of continuously discussed deep operations, designed to fight "total deep, three-dimensional, multidirectional operations."

⁷²Zhang Mingyou, "Reflections on the Establishment of Our Army's Command Principles," in *Jundui zhihui lilun jijin*, 222-23; Wen Guoqing, "A Preliminary Discussion on Starting Points and Issues Related to Future Border and Offshore Combat Command," *ibid.*, 161-62; and Chi Yunxiu, "Several Command Issues Related to Our Army's Future Operations in a War Zone," *ibid.*, 82.

⁷³Xiong Deyu, "On the Military-Civilian Joint Logistics Supply System of the War Zone Under High-Tech War Conditions," in *Gaojishu tiaojian xia jubu zhanzheng zhanyi houqin baozhang yanjiu* (A study of operational logistical support under high-tech, limited war conditions), ed. Guofang daxue keyanbu (Beijing: Guofang daxue chubanshe, 1996), 683-87.

⁷⁴Cheng Mingqun, "Speech at the Conference on Operational Logistical Support Under High-Tech, Limited War Conditions," *ibid.*, 19-20.

Future operations might, however, involve little or no direct human contact, thanks to mutually supportive changes in concepts, organizations, and technology so that traditional operational methods might become irrelevant, while technological inferiority, insufficient force projection capabilities, and poor coordination between ground and air forces might further jeopardize the PLA's ability to manage deep operations under high-tech conditions. In fact, the poor combination of old and new concepts continues to undermine its efforts to develop, test, and refine its operational art. The unbridgeable abyss between aspirations and resources remains.

Prospects

The PLA's operational art since 1979 has gone through three distinct phases of revolution. The first, from 1979 to the early 1980s, was based on the concept of "killing chickens by employing a heavy sword," designed to fight swift, quick, and decisive land battles against Vietnam or by extension, any weak neighbor's invasion, in an effort to escape from Mao's dogmatized operational principles. The second period, from 1985 to 1990, was its attempt to develop a unified operational art of "total deep, three-dimensional, multi-directional operations" devoted to ensuring survival from a possible Soviet limited, deep operations invasion. The third period, from the Gulf War to the present, centered on the idea of "conducting comprehensive resistance, winning through protracted operations," which reverted to its tradition to seek solutions for curbing American-style high-tech, limited war, in order to relieve its deep concerns over U.S. political, ideological, and economic threats to the national interests. Indeed, the PLA has gradually revolutionized operational concepts, organizations, and technologies according to changes in both domestic politics and international strategic environments.

The pendulum swings between revolution and tradition, limited and total war, and weapons and soldiers have not yet fundamentally transformed the basic structure of the PLA's flexibility-dominated operational art, with its special emphasis on initiatives, offensives, the three-in-one system, and societal support, which is always deceptive, offensive, infantry-oriented, and society-centered. The inability to develop a cast-iron, comprehensive operational art comparable to Soviet deep operations and the American air/land battle doctrine derives from glorious tradition, the division of labor, and technological inferiority.

First, the traditional ideas of human resource-oriented total war opera-

tions have cast a dark shadow over contemporary limited war operations. The irreconcilable contradiction between them is a barrier to any possibility of formulating a cast-iron, comprehensive operational art of technology-oriented, limited war operations involving services and branches, unless China admits the bankruptcy of traditional "people's war" under contemporary conditions. Thus, the development of operational art has become a political and ideological rather than operational issue that goes far beyond soldiers' capabilities.

Second, the military division of labor, like civilian counterparts—"feuding hierarchies" and "territorial units"—jeopardizes service and branch interests in developing a joint, unified, and comprehensive operational art, as the air force, the navy, and the second artillery are largely independent of military regions (war zones) and vice versa. As a result, divergent service and branch operational arts have focused on fighting independent operations. No matter what efforts the PLA makes to reunify the "family"—namely, organizing symbolic inter-service, inter-branch, and transregional war games at the group army level once a year or once every few years, the institutional conflicts of service and branch operational arts and command structures between vertical hierarchies and horizontal regions have substantially weakened the quality of combined service and branch operations.

Third, inferiority in technology continues to lead the PLA to build a skill-oriented armed forces. In the meantime, however, the PLA still believes that to defeat stealth technology, precision weapons, and information systems, the match between available obsolete weapons and poorly educated soldiers can and will neutralize huge technological gaps and satisfy the ever-more-rapidly evolving requirements for advanced technology on the battlefield of the immediate future. Yet even though such euphoric and highly premature claims may help improve combat skills to some extent, skillful soldiers are far short of being countermeasures against "invisible," "untouchable," and "indestructible" technologies.

The most important implication emerging from this article is that the PLA should maintain an internally balanced development. To meet new operational challenges, it will have to do so, but there are no choices without cost. Lacking the political, institutional, and technological resources, the revolution in operational art remains uncertain. Without a thorough revolution, glorious tradition may not solve the operational issues that the PLA will face in the twenty-first century.