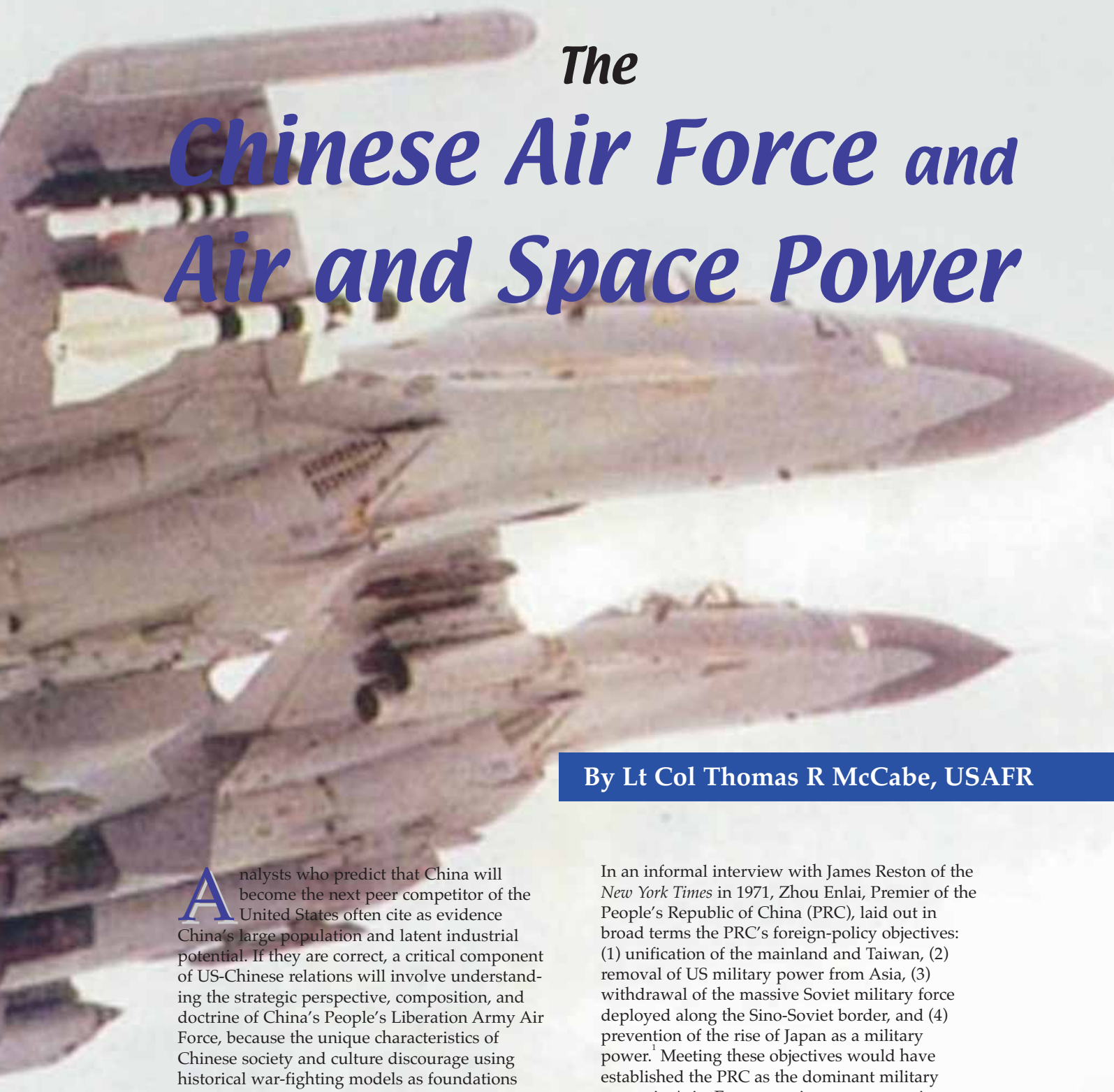

The Chinese Air Force and Air and Space Power

By Lt Col Thomas R McCabe, USAFR

Analysts who predict that China will become the next peer competitor of the United States often cite as evidence China's large population and latent industrial potential. If they are correct, a critical component of US-Chinese relations will involve understanding the strategic perspective, composition, and doctrine of China's People's Liberation Army Air Force, because the unique characteristics of Chinese society and culture discourage using historical war-fighting models as foundations for strategy.

In an informal interview with James Reston of the *New York Times* in 1971, Zhou Enlai, Premier of the People's Republic of China (PRC), laid out in broad terms the PRC's foreign-policy objectives: (1) unification of the mainland and Taiwan, (2) removal of US military power from Asia, (3) withdrawal of the massive Soviet military force deployed along the Sino-Soviet border, and (4) prevention of the rise of Japan as a military power.[1] Meeting these objectives would have established the PRC as the dominant military power in Asia. Even more important, meeting

China is a profoundly dissatisfied power in psychological terms. It craves respect, but the United States is not likely to give it such respect as long as the PRC remains a dictatorship

them today would produce the same effect. Equally notable is their ideological neutrality: any Chinese nationalist, Communist or otherwise, can support such policy aims.

If the Chinese Communist Party continues its gradual drift from Marxism to Chinese nationalism as its justification for ruling, these objectives are not likely to change. Although diplomacy can finesse and conveniently obscure the issue to a degree, and although the events of 11 September 2001 may have changed its tone, the overall circumstances of US-PRC relations make possible a future of fundamental hostility.

Even though China's primary focus today remains on its internal development and even though it is probably satisfied with its land borders, such is not the case with its maritime borders — especially with Taiwan and secondarily, the South China Sea.[2] The status of Taiwan in particular could lead to war sometime in the future. Even more important, China is a profoundly dissatisfied power in psychological terms. It craves respect, but the United States is not likely to give it such respect as long as the PRC remains a dictatorship.

To the degree that the PRC ultimately aspires to the leadership of Asia, it is likely to clash with the United States, Japan, and probably with Russia. A policy of containing China as a strategic competitor will be regarded by its government as hostile, while a policy of 'engagement' has been and will likely continue to be regarded in the same light as one of smiling containment and subversion. Some sources have indicated that the PRC government already regards the United States as a rival and has done so for several years; indeed, anti-Americanism is evidently widespread among the population.[3] The overall circumstances of US-PRC relations provide at least considerable potential for a fundamentally hostile Sino-US relationship.

For these reasons, it is prudent to study China in general and its military in particular. If the Chinese are not an enemy, it is worthwhile to understand them so as to minimize the chances of inadvertently identifying them as such.[4] If they are, we need to understand why and to judge accurately whether they represent a threat since a powerless enemy is more a nuisance than a danger.[5] If they are indeed a present or emerging threat, we must understand them in order to deter or, if necessary, defeat them.

In studying the Chinese military as a potential enemy, one must pay attention to more than just the capabilities of the People's Liberation Army (PLA) and its component services. Specifically, one would do well to begin with the PRC's military doctrine, since it shapes objectives, strategy, force structure, procurement, and training. This article addresses the air and space power doctrine of the PRC's People's Liberation Army Air Force (PLAAF) and analyzes its ability to carry out that doctrine.

Doctrine

Drew and Snow define three levels of doctrine: (1) fundamental, which deals with basic characteristics such as the nature of war, purpose of military power, and the relationship of military force to other instruments of power, (2) environmental, "a compilation of beliefs about the employment of military forces within a particular operating medium" (functionally speaking, this is air and space power doctrine — a statement of how today's air and space power capabilities should be used to have a decisive effect on military operations and wars), and (3) organizational, which includes basic beliefs about the operation of a particular military organization and its roles, missions, and current objectives.[6]

In the US Air Force, Air Force Doctrine Document (AFDD) 1, *Air Force Basic Doctrine,* covers environmental doctrine, defining it as "most fundamental and enduring beliefs that describe and guide the proper use of air and space forces in military action"; AFDD 2, *Organization and Employment of Aerospace Power,* covers organizational doctrine.[7]

The PLA and its component services do not use the term *military doctrine.* The closest analog they have to Western doctrine is what they call *military science,* which links theory and practice.[8] Chinese military science consists of (1) basic military science, the fundamental concepts that govern PLA military operations at the various levels of war (basic military science would include whatever environmental doctrine — air and space power

doctrine — the PRC might have),[9] and (2) applied military theory, the specifics of how to apply military force at each level of warfare (similar to US organizational doctrine).[10]

PLA military concepts, including those of the PLAAF, are not couched in terms of roles and missions, as is the case with the US military. Instead, they use the alternative concept of *campaigns,* defined as a series of battles fought under a unified command to achieve a local or overall objective.[11] Campaigns primarily take place at what the US military would call the operational level of war using a wartime operational structure called a *War Zone*. Depending on the size of the operation, a War Zone can encompass either a portion of or more than one Military Region.[12]

A critical point of the PLA's campaign planning lies in its expectations of the military environment in the type of war it expects to face. These expectations will obviously have a dramatic effect on strategy, force structure, and procurement. At present, the PLA views the primary threat as a local (i.e. regional) war under high-technology conditions.[13] It expects such a war to have the following general characteristics:

• It will be a limited war, fought in a restricted geographic area for limited objectives with limited means and a conscious effort to curtail destruction. It will not be a comprehensive or total war, fought to destroy the Chinese state and to invade and occupy the homeland. It will not threaten the survival of the states involved. In many ways, such a conflict is the modern equivalent of a border war.[14] Overall, the threat of world war is minimal for the indefinite future, due to the revolutionary changes in external circumstances faced by the PRC over the last 15 years (i.e. the collapse of the Soviet Union and the end of the Cold War).[15]

• Such a war will be fought with comparatively small, highly trained joint forces using mostly long-range, precision-strike weapons made available by the ongoing revolution in military technology.

• The objective in such warfare is to defeat the enemy rapidly by inflicting strategic and operational paralysis through attacks on his weaknesses. In fact, it may be possible to defeat the enemy with one strike. This kind of war will not require annihilation of the enemy or physical occupation of his territory.

• This multidimensional war will unfold in all dimensions (air, sea, ground, space, and the electromagnetic spectrum) simultaneously. Warfare in one dimension will integrate with that in the other dimensions. Forces will fight throughout the depth of the theater (a "full-depth strike"), and the battlefield will be extremely fluid and dynamic. Airpower and precision strike are now the primary means of conducting warfare, with ground operations secondary.[16]

This type of war, of course, represents a revolutionary change from the traditional PLA concept of People's War, which assumed a total war fought primarily by ground forces and a comprehensively mobilized population against an invading enemy seeking to destroy and occupy the PRC. At first glance, it would appear that this new war is tailor-made for air and space power which can have a major impact by waging an independent air campaign against vital targets and supporting other arms of the military.[17]

Thus, one would reasonably expect the PLAAF to have a concept of air and space power that calls for such an air force and to restructure itself along the lines of the US Air Force (i.e. emphasizing all-weather offensive aircraft; precision-guided munitions, and sophisticated command and control, intelligence, surveillance, and reconnaissance capability). However, little evidence suggests that PLAAF military science thinks in these terms or that the PLAAF is building this kind of an organization. If anything, a massive disconnect seems to exist between what we might expect the PLAAF to do and what it is actually doing. Several likely explanations account for this situation.

For one, by assuming that the PLAAF would choose a course parallel to our own, we are mirror-imaging — that is, projecting our assumptions and thinking onto the PLAAFs. This practice proved dismally common and nearly disastrous during both the Cold War and in fact at times

PLAAF Chengdu Chinese F-7E fighters

The PLAAF now faces the worst of all worlds: it has a huge legacy force of obsolescent or obsolete equipment that was inadequate for the old strategy and that is utterly unsuited for the new one

during our past dealings with the PRC.[18] It is essential to remember that we are not dealing with Americans or, for that matter, Westerners. The PLAAF's aims are not necessarily the ones we would choose under similar circumstances (even if the PLAAF's aims were identical to ours, it might choose drastically different ways of pursuing them); its assumptions are not necessarily our assumptions and its tactics and strategies are not necessarily the ones we might choose. We must remember that the PLAAF's history is not ours and above all that the circumstances it faces are profoundly different than those we face.

Beyond this explanation for the apparent disconnect, I suggest two others. The first is that local war under high-tech conditions is what some authors call *aspirational doctrine*.[19] The second is that, at present, PLA military science, strategy, and procurement do not seek to *wage* a high-tech local war but to *defeat* an enemy who wages high-tech local war against them. These two explanations are not mutually exclusive.

Aspirational doctrine

In aspirational doctrine, military theory is much more advanced than actual military technology and capability, and the concepts of a local war under high-technology conditions detail the kind of offensive war the PRC wants to be able to wage. Such doctrine does not necessarily suggest that the PRC can in fact fight such a war today. In this respect, China's military science bears a marked resemblance to Soviet doctrinal writings such as Marshal Sokolovskiy's classic *Soviet Military Strategy* which originally laid out an extremely ambitious strategy for fighting a nuclear war at a time when the USSR was only starting to deploy the capabilities necessary to fight such a war.[20] One should note that the highest levels of the Chinese leadership have evidently recognized that at present the PRC cannot fight a high-tech local war.[21]

Preventing it from doing so are the PRC's geopolitical and historical circumstances, economic limitations, and technological limitations, as well as the legacy of its past military policies. Obviously, these factors have had, and continue to have, a profound impact on shaping the PLAAF and its military science. They constitute an enormously unfavorable legacy for the PLA and PLAAF and their military theory — one that will be difficult to overcome.

Geopolitical and historical circumstances

Historically for the Chinese war has been a home game fought on and over their territory; until recently, their military science has reflected this fact.[22] In recent centuries, China has endured humiliation and partial dismemberment from invasion, and in recent decades it has largely been surrounded by states perceived as hostile or powerful or both. The PRC's strategic concepts and military strategy have reflected this situation by focusing on a People's War, mentioned above — a strategic, defensive war to defend the mainland from attack and invasion.

China expected to wage a war of attrition designed to wear down and ultimately expel invading enemies. In this strategy, the PRC's ground army would be the pre-eminent service, supplemented by a comprehensively mobilized population. Power projection beyond China's borders was only a secondary concern, and any power projection would be by ground forces into adjacent territory. The air force played an even lesser role. In the conflict envisioned by People's War, the PLAAF's function was primarily defensive, with very limited offensive capability. China did not expect to use air and space power but did expect an enemy to do so.

The very name of the Chinese air force — the People's Liberation Army Air Force — speaks volumes in this regard. Clearly, China considered its air arm an extension of the army. Under such conditions, the PRC had no need for air and space power doctrine. Only recently has China, facing the challenge of local wars under high-technology conditions, reportedly granted the PLAAF an enhanced role. However, having a new role on paper does not equate to the ability to carry out that role. In many ways, the PLAAF now faces the worst of all worlds: it has a huge legacy force of obsolescent or obsolete equipment that was inadequate for the old strategy and that is utterly unsuited for the new one.

Economic limitations

China's lack of wealth has severely restricted the resources available for military-related matters.[23] Until fairly recently, the country spent much of its available military funds on infrastructure such as tunnel systems and the construction and dispersal of military industry to remote areas. Although economic reforms of the last 20 years have led to impressive (although often overstated) economic growth, the PRC still has neither a wealthy nor modern economy. Even partial replacement of the PLA's and PLAAF's antiquated equipment with modern assets suitable for major power projection would be enormously costly at best and ruinous at worst— undoubtedly one of the major reasons that the PLAAF's acquisition program for new equipment is proceeding so slowly.

China's attempts to design and build more sophisticated aircraft such as the F-8 have met with limited success as have its attempts to import, integrate, and maintain foreign technology

PLAAF Shenyang F-8II fighters

It might be more accurate to say that the PLAAF does not have an air and space power doctrine so much as it has an anti-air and space power doctrine

Technological limitations

Because of its poor and developing economy and society, China has had only a very limited technology base to draw upon to support its military. Although the PRC has established an increasingly significant industrial base, its ability to support a technologically sophisticated military, let alone build one by itself, remains very much open to question. The country's aviation-related military industry is limited, technologically backward, and inefficient.[24] Most of the PLAAF's equipment, especially its aircraft and surface-to-air missiles (SAM), is based on Soviet designs of the 1950s and 1960s, such as F-6 and F-7 fighter aircraft, based on the MiG-19 and MiG-21, respectively, and the B-5 and B-6 bombers, based on the Il-28 light bomber and Tu-16 medium bomber, respectively.

At best, these aircraft have only limited ability to operate at night, in bad weather, and in an electronic-countermeasures environment. Few are capable of using precision-guided munitions. China's attempts to design and build more sophisticated aircraft such as the F-8 have met with limited success as have its attempts to import, integrate, and maintain foreign technology.[25] The PLAAF and PLA evidently have major programs aimed at developing high-technology weapons, but generally they are still in the technology-development phase — years (or decades) away from actual deployment.[26]

Campaign theory of the PLA and PLAAF

Clearly, the PLA and PLAAF have only an extremely limited ability to wage a high-tech local war at present, even against an enemy such as Taiwan, and any gains in capability are proceeding slowly.[27] This situation suggests the second, probably more important, reason for Chinese military science's adoption of this concept of war: It is the kind of war the PRC expects to have imposed upon it in any future conflict, especially one with the United States or a US-led alliance.28 Within the limits of the circumstances discussed earlier, China is preparing to try to survive and defeat this kind of war. Thus, it might be more accurate to say that the PLAAF does not have an *air and space power* doctrine so much as it has an *anti–air and space power* doctrine.

At present, the national military strategy of the PRC calls for 'active defense', which involves a nominal strategic defensive that uses offensive tactics, including preemptive war. In such a war, the PRC aims not necessarily to conquer enemy territory but to win decisively and coerce the enemy to change the particular policy that prompted the PRC to go to war in the first place.[29] More than likely, the PRC will base its campaign strategy on three principles:

1) Using elite forces and sharp arms. The cutting edge will consist of 'fist forces' — comparatively small, well-equipped, and highly trained elite joint forces.

2) Gaining the initiative by striking first. Evidently, the PRC is prepared to launch a war if diplomacy fails in a crisis. PLA preparations for such an attack emphasize a campaign of deception and disinformation to maximize the chances of surprising the enemy. Furthermore, the PLA seems prepared to launch a pre-emptive strike, preferably before enemy deployments are complete.

3) Fighting a quick, offensive battle to force a rapid, successful end to the war. A long war would likely prove both economically and militarily costly. Even more important, because any PLA superiority would probably be temporary, a long war would enable an enemy to recover, mobilize, reduce the PLA to a position of inferiority, and eventually defeat it.[30]

War-Zone campaign

The PRC will likely structure the War-Zone or overall campaign as a joint effort aimed to integrate ground, naval, air, and special operations forces as well as surface-to-surface missile forces of the II Artillery Corps, with service-based subsidiary campaigns functioning with relative autonomy within the campaign plan. Any PLAAF campaign would probably be subsidiary, but some writers theorize that it might serve as the primary campaign.[31]

PLAAF air campaign

The Military Region Air Force (MRAF) commander will direct aviation units assigned to the air campaign and have responsibility for coordinating with any other service units (e.g. II Artillery

Corps, special operations forces etc) operating in support of the air campaign. The commander's purview will include the air defense campaign, the offensive air campaign, any air transport, and, presumably, any air support provided to other services, such as the ground forces and navy.[32]

Air defense campaign. Historically, the PLAAF's primary campaign entailed strategic air defense of the PRC mainland, especially the Beijing and Shanghai areas, with the air force's major arms (aviation, SAMs, and antiaircraft artillery) operating in parallel, not as parts of an integrated air defense system. It would provide defense in depth, with light screening forces located in a forward area and most forces concentrated close to key potential targets ('light front, heavy rear'). Strategic air defense remains the PLAAF's principal campaign; some authors suggest that, under some circumstances, it may be the war's only campaign.[33] In fact, its importance is increasing, for three reasons:

1) In a local war under high-tech conditions, air and space power represents the major threat faced by the PRC. Air and space power has been central to all such wars fought since 1990.

2) The threat from air and space power is growing, a fact acknowledged by the PLAAF in its "three offenses and three defenses" training program.[34]

3) The PLAAF's legacy interceptor aircraft are suited only for short-range air defense missions and most of its newer aircraft (F-7s and F-8s) face similar limitations. This situation is likely to change only very slowly as new aircraft enter the inventory.

The PRC's air defense campaign seeks to establish and maintain strategic air superiority over the War

Strategic air defense remains the PLAAF's principal campaign; some authors suggest that, under some circumstances, it may be the war's only campaign

SA-10 air defence missile transporters

Zone by (1) achieving complete deterrence through denial (psychologically, the enemy becomes reluctant to attack because he expects any such attack to fail), (2) resisting attack by targeting hostile intelligence and surveillance platforms, as well as airborne warning and control system (AWACS) and jamming aircraft, with either long-range fighters or, preferably, long-range SAMs (resisting attack remains PLAAF's priority and will become an increasingly multidimensional activity with the integration of advanced surveillance systems), and (3) launching timely counterattacks against enemy air bases (PLAAF writers stress that a purely defensive air effort surrenders the initiative to the enemy and would likely guarantee defeat).[35]

Currently, the PLAAF is working to upgrade its extremely limited strategic air defense capabilities by deploying better equipment and developing an integrated (though probably rudimentary) air defense system, something it has lacked until very recently.[36] However, modernization is proceeding slowly due to the relatively small number of Su-27s acquired thus far, either purchased from Russia or manufactured under license in China, and problems with other systems.[37]

The PLAAF is in the early stages of building an AWACS component through indigenous development and the leasing of aircraft from Russia after the United States vetoed a sale from Israel.[38] Furthermore, it has just a few advanced SAMs (SA-10s purchased from Russia) although this situation may change if and when it initiates major deployments of FT-2000s.[39] Overall, the PLAAF's limited means of projecting airpower, whether for timely counterattacks or any other reason, renders its ability to conduct an air defense campaign largely aspirational.

The Chinese air force will likely find itself relegated to nothing more than a supporting role in any offensive campaign with the major burden carried by missiles of II Artillery Corps and by information warfare for which the Chinese have vast enthusiasm

PLAAF Sukhoi Su-27 fighters

A PLAAF Sukhoi Su-30MKK fighter-bomber

The PLAAF has moved very slowly to build the force it requires: out of a force of approximately 2,500 combat aircraft, fewer than 150 can be considered modern

Offensive air campaign. This campaign seeks to maximize enemy weaknesses by "moving the battlefield as far as possible toward the enemy's side" and forcing the enemy to fight on the defensive at China's initiative.[40] It intends to exploit air and space power's advantages of initiative, versatility, and suddenness. The campaign can either stand alone as an independent air force effort or, far more likely, become part of an integrated joint campaign of surface-to-surface missiles, special operations forces, electronic and information strikes, and attacks by aircraft. The PRC could aim such a campaign at either strategic-level or campaign-level enemy target systems. The former includes political and economic systems, transportation and lines of communication, and supply and mobilization targets that will have strategic-level effects. The latter encompasses air defenses, air bases, and aircraft carriers (damage to or destruction of such targets can influence events in the War Zone).[41]

Historically, the PLAAF has not considered offensive attack a major mission since it has no capability for conducting strategic intercontinental air attack and extremely limited means for either a strategic or campaign-level offensive in a local war — a situation subject to gradual change at best.[42]

Most of the PLAAF's current aircraft might prove useful only as a sacrificial first wave to soak up the defensive armaments of targets attacked in an offensive campaign. As mentioned earlier, its aircraft have little or no capability to operate at night, in bad weather, and in an electronic-countermeasures environment — and the greater part of the B-5/B-6 bomber force is obsolete.[43]

Furthermore, few if any of its aircraft can use precision-guided munitions against land targets: it has only a modest force of fighter aircraft (Su-27s) with the capability (not to mention the range) to conduct air-to-air offensive counter-air, and aside from the Su-30s coming from Russia, the PLAAF lacks the aircraft and specialized munitions necessary for airfield attack and suppression/destruction of enemy air defenses.[44] Thus, the Chinese air force will likely find itself relegated to nothing more than a supporting role in any offensive campaign with the major burden carried by missiles of II Artillery Corps and by information warfare for which the Chinese have vast enthusiasm.[45] If the conflict should expand to intercontinental ranges, the PLAAF would probably have no role at all.

Direct support of ground units. The PLAAF has a record of scant participation in close air support,

battlefield air interdiction, and interdiction, and shows no signs of improvement in the foreseeable future. Interestingly, it evidently does not consider this mission a separate campaign. Although the PLAAF has a substantial force of attack aircraft, they are not equipped — nor are their crews trained — for direct support of ground units; nor is the PLAAF organized and equipped to function in support of a highly dynamic surface war of maneuver.[46] Evidently, the air force has never successfully carried out direct support, preferring to provide indirect support by attacking targets in the enemy's rear area such as air defenses, campaign reserve forces, logistics support, communications, and helicopters.[47] The PLAAF shows no sign of initiating major efforts to improve its capabilities in this area.

Conclusions and implications

PLA military science's concept of high-technology local wars gives the army an accurate assessment of the military environment it faces in the early 21st century in the form of challenges from either a local enemy or a 'powerful country' such as the United States. The PLA's strategy of relying on surface-to-surface missiles, fist forces, and asymmetric warfare, while gradually modernizing its massive and obsolete military, is reasonably sound so long as it deals with an isolated Taiwan. Over time the strategy may provide plausible capability to coerce or overwhelm Taiwan, so long as the United States does not intervene. But it does not provide plausible capability to defeat or even deter the United States at any time in the foreseeable future.

The situation is even worse for the PLAAF which wishes (1) to move from the primarily defensive strategy and force structure of the past to one that combines offensive and defensive elements and (2) to initiate a qualitative transformation that reflects the ongoing revolution in military technology. In theory these wishes make reasonable sense. At present, however, they remain an aspirational concept that exists largely on paper. The PLAAF has moved very slowly to build the force it requires: out of a force of approximately 2,500 combat aircraft, fewer than 150 can be considered modern, and that number is increasing by fewer than 50 a year, with no sign of accelerating the acquisition process.

The air force has not taken the obvious interim step of upgrading the capabilities of existing aircraft (e.g. by adding modern missiles, especially standoff weapons, and improved electronics). Nor has it taken more than preliminary steps toward making the qualitative improvements in organization, training, and tactics that have proved so central to the success of American air and space power. Finally, the PLAAF has not undertaken a major effort to build the intelligence, surveillance and reconnaissance capabilities it will need if only to partially duplicate American capabilities.

The PLAAF's military science, force structure and acquisition make considerable sense if it is not expecting a conflict with the United States within the next 20 years. But the unsettled status of Taiwan makes that assumption uncertain at best. Against a major American effort, the PLAAF fundamentally would remain in the same position it found itself after Operation Desert Storm: incapable of either effective offense or defense and its current efforts will not change that status in the foreseeable future. In fact, in all likelihood the United States is widening its lead and will do so even more rapidly as it deploys new capabilities such as the F/A-22.

Chinese military science and strategy for a war with the United States over Taiwan call for defeating the island rapidly and presenting America with a *fait accompli* before it can intervene. China's published writings are extremely vague as to what it intends to do if its first effort does not succeed and a million tons of US diplomacy come roaring across the Pacific at flank speed and/or the speed of sound before Chinese forces have won. It seems that China hopes the United States will not be willing to endure the casualties and costs of a major war, but in that hope may lie an immense potential for danger.

Such a mind-set has ominous parallels to the wishful thinking of the leadership of the Hirohito Shogunate before Pearl Harbor. The Japanese felt that they could rapidly overrun the western Pacific and that the soft, materialistic United States would not have the stomach for a long and bloody war. Three and a half years later, their country in ruins, they surrendered unconditionally. However, it is

difficult to conceive of a nuclear-armed China surrendering on the aft deck of the *USS Ronald Reagan*.

Notes

1. Tillman Durdin, James Reston, and Seymour Topping, The New York Times Report from Red China (New York: Quadrangle Books, 1971). See p. 107 for the summary and pp. 81–106 for the actual interview.
2. China is probably satisfied with its land borders, but one cannot necessarily say the same of its neighbors- especially India. Over time, that satisfaction may change with circumstances, as the demographic balance of the Russian Far East changes with the loss of ethnic Europeans to western Russia and the illegal entry of Chinese. If, at some point, a significant majority of the population there becomes ethnic Chinese, they may start to demand annexation by the PRC.
3. Richard Bernstein and Ross Munro, The Coming Conflict with China (New York: A. A. Knopf, 1997), 22. For a more optimistic view, see John Pomfret, "China Sees Interests Tied to U.S.," Washington Post, 2 February 2002, 1.
4. Although I am extremely skeptical of the claim that wars are caused by misunderstandings, they may very well be caused by miscalculations that grow from misunderstandings. A particularly relevant example is the misunderstanding of the United States that led to Japan's miscalculation in going to war with America in 1941.
5. Fidel Castro is an obvious example. With the collapse of the Soviet empire and the bankruptcy of Communism, he has shrunk to irritant status.
6. Col Dennis M. Drew and Dr. Donald M. Snow, Making Strategy: An Introduction to National Security Processes and Problems (Maxwell AFB, Ala.: Air University Press, 1988), 167–70.
7. AFDD 1, Air Force Basic Doctrine, 1 September 1997, 2; and AFDD 2, Organization and Employment of Aerospace Power, 17 February 2000.
8. Dr. David Finkelstein, "Thinking about the PLA's Revolution in Doctrinal Affairs," draft paper, November 2002. Cited with permission of the author.
9. Adm Shi Yunsheng, "PLA Navy Military Science," in Chinese Navy Encyclopedia, vol. 1 (Beijing: Haichao Publishing House, 1998), 16–31. Many thanks to Dr. David Finkelstein of the Center for Naval Analysis for bringing to my attention the PLA's naval encyclopedia (and the book The Science of Campaigns).
10. Shi Yunsheng, 16–31.
11. Wang Houquing and Zhang Xingye, eds., The Science of Campaigns (Beijing: National Defense University Press, 2000), especially chap. 1.
12. A Military Region is a peacetime administrative entity whereas a War Zone is a wartime operational entity for the command and control of campaign-level operations. Military Regions provide forces and assets to a War Zone. Dr. David Finkelstein, Center for Naval Analysis, correspondence with author.
13. An excellent basic source is Chinese Views of Future Warfare, ed. Michael Pillsbury (Washington, D.C.: National Defense University Press, 1997). For a more recent and representative Chinese view, see Gen Fu Quanyou, "Deepen the Study of the Characteristics and Laws of High-Technology Local Wars and Raise the Standard of Guidance for Winning the High-Technology Local War of the Future," Beijing Zhongguo Junshi Kexue, 20 February 1999, on-line, Internet, 25 May 2002, Foreign Broadcast Information Service (FBIS) Online [hereafter FBIS Online], serial FTS19990701001913, available from http://199.221.15.211.
14. One should note that, for the United States and the PRC, the Korean War was the equivalent of a border war. Nevertheless, it was a major war.
15. One should note that some events, especially the bombing of the PRC embassy in Yugoslavia, reportedly prompted some Chinese leaders to warn that US hegemony was increasing regional wars, which could lead to a world war. See Yueh Shan, "Beijing Sets Forth New World War Theory," Hong Kong Cheng Ming, 1 May 1999, on-line, Internet, 25 May 2002, FBIS Online, serial FTS19990516000908, available from http://199.221.15.211. See also Li Tzu-Ching, "The Chinese Military Clamors for War: Vowing to Have a Fight with the United States," Hong Kong Cheng Ming, 1 June 1999, on-line, Internet, 25 May 2002, FBIS Online, serial FTS19990626000913, available from http://199.221.15.211.
16. In December 1995, the Central Military Commission- the Communist Party organization that oversees the military- concluded that the ground battle was now secondary to the air battle. See Mark Stokes, "China's Missile, Space, and Conventional Theater Missile Development: Implications for Security in the Taiwan Strait," in People's Liberation Army after Next, ed. Susan M. Puska (Carlisle Barracks, Pa.: Strategic Studies Institute, US Army War College, 2000), 109.
17. Wang Houquing and Zhang Xingye, chap. 3, p. 9.
18. Dr. Jeffrey Record, "Thinking about China and War," Aerospace Power Journal 15, no. 4 (winter 2001): 69–80.
19. The concept is from Paul Godwin, quoted in Kenneth W. Allen, "Focus on China's Air Force Modernization," unpublished paper, n.d., 3.
20. Marshal V. D. Sokolovskiy, Soviet Military Strategy, 3d ed., trans. and ed. Harriet Fast Scott (New York: Crane, Russak, and Company, 1975). The original Soviet edition was printed in 1962.
21. In 1999 Jiang Zemin recognized that the PRC could not fight and win this kind of war. See "Review of Jiang Zemin's Views on

High-Tech Warfare," Beijing Jiefangjun Bao, 13 February 2001, on-line, Internet, 25 May 2002, FBIS Online, serial CPP20010213000086, 4, available from http://199.221.15.211.

22. This, of course, differs most profoundly from the situation of the United States, which, surrounded by friendly countries and far away from the main battlegrounds of the world, has implicitly or explicitly assumed for nearly the last century that any wars it fought would be expeditionary and conducted somewhere else. China has not enjoyed that luxury.

23. Mao Zedong's ideologically driven policies of the 1950s and 1960s, particularly the Great Leap Forward in the 1950s and the Great Proletarian Cultural Revolution in the mid-to-late 1960s, were disastrous, even by the standards of Communist economics; they led directly to repeated economic and political upheavals that set PRC economic growth back decades.

24. For information on the technological limits of Chinese military industry, see Bernard D. Cole and Paul H. B. Godwin, "Advanced Military Technology and the PLA: Priorities and Capabilities for the 21st Century," in The Chinese Armed Forces in the 21st Century, ed. Larry M. Wortzel (Carlisle Barracks, Pa.: Strategic Studies Institute, US Army War College, 1999), 159–215. See also John Wilson and Xue Litai, "China's Search for a Modern Air Force," International Security 24, no. 1 (summer 1999): 64–94.

25. For information on China's past difficulties with integrating foreign technology into its aircraft, see Wilson and Xue Litai. In "China Hikes Defense Budget Again," Washington Post, 5 March 2002, 5, John Pomfret reported that 60 percent of China's Su-27s were grounded. The Chinese consider the Su-27s inadequate. See Chi Mo, " 'J-10' Fighters Set to Become Air Force's Main Arms-50 'J-10' Fighters Set to Be Built; General Secretary Jiang Zemin Watches Test Flight," Hong Kong Sing Tao Jih Pao, 29 May 2002, on-line, Internet, 25 May 2002, FBIS Online, serial CPP20020529000059, available from http://199.221.15.211.

26. Mark A. Stokes, China's Strategic Modernization: Implications for the United States (Carlisle Barracks, Pa.: Strategic Studies Institute, US Army War College, 1999).

27. Michael O'Hanlon, "Why China Cannot Conquer Taiwan," International Security 25, no. 2 (fall 2000): 51–86.

28. PRC writings often assume a US-Japanese alliance, and some of them imply that the PRC expects to confront NATO. See Gen Liao Xilong, "PRC General Discusses Civilian Air Defense," Beijing Zhongguo Junshi Kexue, 1 April 2001, on-line, Internet, 25 May 2002, FBIS Online, serial CPP20010416000146, available from http://199.221.15.211.

29. Mark Burles and Abram N. Shulsky, Patterns in China's Use of Force: Evidence from History and Doctrinal Writings (Santa Monica, Calif.: RAND, 2000), vii.

30. This description draws extensively from Nan Li, "The PLA's Evolving Campaign Doctrine and Strategy," in The People's Liberation Army in the Information Age, ed. James C. Mulvenon and Richard H. Yang (Santa Monica, Calif.: RAND, 1999), 146–74. See also Huang Jialun, "Attach Importance to Operation at Outer Strategic Line," Beijing Jiefanjun Bao, 30 November 1999, on-line, Internet, 25 May 2002, FBIS Online, serial FTS19991231001520, available from http://199.221. 15.211; and Nan Li, 154.

31. Maj Gen Zheng Shenxia and Senior Col Zhang Chazhi, "The Military Revolution in Air Power," in Pillsbury, 301.

32. The main transport capability of the PLAAF consists of 25 Y-8s (Chinese-built AN-12s) and 25 Il-76s. See "World Defense Almanac," Military Technology 26, no. 1 (January 2002): 301. The demands on PLAAF's transport force are likely to be extreme. In addition to providing force-projection capability, they will have to redeploy troops from other parts of the PRC to reinforce the War Zone. The PLAAF's very small force of transports is likely to be totally inadequate for either mission, let alone both. Although Chinese civilian transports can deliver troops, they cannot move much equipment. In addition to these wartime campaigns, PLAAF writings discuss an air-blockade campaign, intended to isolate a target country. See Wang Houquing and Zhang Xingye, chap. 13.

33. Zong Fangsheng, "PLA Merges Artillery and Air Defense Forces," S&T Daily, 25 July 2000. He is evidently thinking in terms of NATO's war against Yugoslavia in 1999.

34. Kenneth W. Allen, "China and the Use of Force: The Role of the PLA Air Force," unpublished paper, 2000, 26. The three new offenses include those against stealth aircraft, cruise missiles, and armed helicopters. The three new defenses include those against precision bombing, electronic interference, and reconnaissance and surveillance. See Guo Jia, "Building Stronger Armed Forces through Science and Technology: Train Crack Troops for Winning Future Wars," Beijing Renmin Rebao, 17 December 2001.

35. Strategic air superiority results from establishing air superiority for the entire war over the entire War Zone, or for specific periods of time over a specific location or locations. The Chinese aim to establish such superiority not only over the PRC mainland, but also over the area into which they are trying to project power. See Kenneth W. Allen, "PLAAF Strategic Thought," unpublished paper, n.d., 1–3; and idem, "PLA Air Force Operations and Modernization," in Puska, 224.

36. In 1999 a US Department of Defense report estimated that it would take up to 20 years for China to fully establish a national integrated air defense system. Cited in Allen, "Focus on China's Air Force Modernization," 13.

37. China has purchased 76 Su-27s from Russia, and licensed production of an additional 200 is under way. See "World Defense Almanac," 301. However, this is hardly a crash program: the production agreement between Russia and China set the maximum production rate at 10–15 per year. See Allen, "Focus on China's Air Force Modernization," 7–8 n. 16. In addition, the F-10 fighters entering production will replace the comparatively new F-8IIIs,

not the elderly F-6s- a situation that presumably indicates serious problems with the F-8IIIs.
See Chi Mo.
38. Four Russian-built A-50M/U airborne early warning and control (AEW&C) aircraft are reportedly on order. See "World Defense Almanac," 302. China seems to need 15–20 such aircraft. See Allen, "Focus on China's Air Force Modernization," 10–11. The indigenous aircraft is the Y8AEW. See Department of Defense, Report to Congress Pursuant to the FY 2000 National Defense Authorization Act, Annual Report on the Military Power of the People's Republic of China (Washington, D.C.: Secretary of Defense, 2000), 17, on-line, Internet, 15 April 2003, available from http://www.
defenselink.mil/news/Jun2000/china06222000.htm.
39. Jim O'Halloran, "New Missile for Chinese FT-2000 SAM System," Jane's Defence Weekly, 15 August 2001, 15.
40. Zhou Shijun, "Try as far as Possible to Move the Battlefields toward the Enemy Side," Beijing Jiefangjun Bao, 14 September 1999.
41. Allen, "China and the Use of Force," 12.
42. In 1999 PLAAF commander Liu Shunyao said that the PLAAF would change as fast as possible from territorial air defense to gain both defensive and offensive capabilities, indicating that offensive capability was an aspiration, not a present capability. See Sun Maoqing, "Air Force Commander Liu Shunyao Says That He Is Endeavoring to Build a Powerful Modern People's Air Force with Both Offensive and Defensive Capabilities," Beijing Xinhua Domestic Service, 8 November 1999, on-line, Internet, 25 May 2002, FBIS Online, serial FTS19991130000440, available from http:// 199.221.15.211.
See also Huang Jialun.
43. Allen, "China and the Use of Force," 40. Although the specific reference is to F-6s and F-7s, this could just as readily apply to the B-5s and B-6s of the PLAAF bomber force. The PLAAF evidently has about 150 B-5s (being retired) and
120 B-6s. See "World Defense Almanac," 301.
44. The PLAAF has taken delivery of 38 Su-30s, signed a second contract for a second batch of 38 more in 2001, and is reportedly expected to buy at least a third batch. See "China Expected to Buy Third Batch of Su-30MKKs," Jane's Defence Weekly, 21 August 2002, 14. The PLAAF, which is reportedly procuring them as replacements for older B-5s, may be considering producing them under license. See Allen, "PLA Air Force Operations and Modernization," 215.
45. The Chinese are enthusiastic about the potential of information warfare, which they seem to regard as something of a magic bullet. However, their actual capabilities may be quite limited. See James Mulvenon, "The PLA and Information Warfare," in Mulvenon and Yang, 175–86.
46. The PLAAF has about 500 Q-5 attack aircraft, which are redesigned F-6s. See "World Defense Almanac," 301.
47. See Allen, "PLA Air Force Operations and Modernization," 201; and idem, "China and the Use of Force," 6.