



In This Issue:

IN A FORTNIGHT	1
By Peter Mattis.....	1
SINO-INDIAN BORDER NEGOTIATIONS: PROBLEMS AND PROSPECTS	3
By Prashanth Parameswaran.....	3
COAL TO NEWCASTLE? UNDERSTANDING CHINA'S COAL IMPORTING BEHAVIOR	6
By Kevin Jianjun Tu and Sabine Johnson-Reiser.....	6
PIVOT AND PARRY: CHINA'S RESPONSE TO AMERICA'S NEW DEFENSE STRATEGY	9
By Michael S. Chase and Benjamin S. Purser, III.....	9
THE PLA'S THREE-PRONGED APPROACH TO ACHIEVING JOINTNESS IN COMMAND AND CONTROL	12
By Kevin N. McCauley.....	12



One of the Many Joint Command and Control Exercises Last Year

In a Fortnight

By Peter Mattis

BEIJING DENIES RUSSIAN RUMORS OF SU-35 FIGHTER PURCHASE

Last week, Russian media reported Moscow was close to finalizing a \$4 billion deal for 48 Su-35s with Beijing. The reported sticking point was that the Russian side wanted greater assurances that Chinese engineers would not reverse engineer the Su-35 and put it into domestic production like the Su-27, which is the model for China's J-11 (*Taipei Times*, March 9; *Kommersant*, March 8; *RIA Novosti*, March 6). The report by the Russian newspaper *Kommersant* has generated a flurry of Western commentary; however, there is a striking difference between the Chinese-language and foreign-language coverage of this issue. China's Ministry of National Defense (MND) has denied emphatically that such a deal is in the works, stating the press coverage is "not in accord with the facts" and the Su-35 "does not fit China's national situation" (*Caixin*, March 12; *Global Times*, March 12). This discrepancy undermines Western analysis of the strategic implications of this announcement and suggests China's defense aerospace industry is making sufficient progress to meet its military needs.

In a widely reprinted interview, Major General Wei Gang, a senior officer in the People's Liberation Army Air Force's (PLAAF) Armaments Department from 2004 to 2011, spoke about the PLAAF's success in using indigenous innovation (*zizhi chuangxin*) to meet equipment needs. General Wei touted the J-10 as such an example, while conspicuously avoiding the J-11. Perhaps most importantly, Wei

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commented that the copying of foreign equipment does not get the PLAAF what it needs and “we must develop forces that meet the needs of China’s developmental circumstances” (China Central Broadcasting, March 9; People’s Net, March 9).

This interview, in combination with MND’s denial, suggests the *Kommersant* report may be simply rumor—or, alternatively, Beijing is trying to save face by denying the Su-35 deal was ever serious, knowing China’s aerospace industry would not honor the Russian request not to reverse engineer their technology. Giving credence to Beijing’s story over the Russian version suggests Chinese aerospace firms finally may be producing jet engines of the quality needed for advanced fighters—an area where they long have struggled [1]. At a minimum, the Chinese story, if true, would indicate the PLAAF does have its development well in hand and does not have a projected fighter shortfall like the United States and Taiwan.

EVALUATING CHINA’S INTELLIGENCE PENETRATION OF TAIWAN

On February 29, Taiwan announced yet another espionage case involving the Chinese intelligence services. The Chinese reportedly received classified materials from a Taiwanese Air Force captain named “Chiang,” who worked in an office similar to a regional operations control center (*China Post*, March 1; *Taipei Times*, February 29). The case raises several questions that countries friendly with Taipei should consider before condemning the Taiwanese government as so penetrated to be irrelevant. The same concerns should be mirrored in Taipei as a call for more transparency with allies.

The case is typical of Chinese intelligence operations against Taiwan (See, “Taiwan Espionage Cases Highlight Changes in Chinese Intelligence Operations,” *China Brief*, July 1, 2011). Again, the operation developed after intelligence officers approached a Taiwanese businessman, “Chiang’s” uncle, inside China, demanding that he assist them in acquiring Taiwanese secrets and offering to pay him if he did so. During return trips to Taiwan, “Chiang’s” uncle solicited his support in providing the Chinese with sensitive information on Taiwan’s Air Force (*Wen Wei Po*, March 1; *Taipei Times*, February 29).

The “Chiang” case once again raises serious if unanswerable questions about Taiwanese counterintelligence and Chinese intelligence operations:

- How much damage did “Chiang” do to Taiwanese security?
- To what extent are Chinese intelligence organizations targeting Taiwan’s Command, Control, Computers, Communications, Intelligence, Surveillance and Reconnaissance (C4ISR) systems?
- To what extent are Taiwanese government institutions penetrated by Chinese intelligence?

Damage Assessment: As seems to be the normal procedure for Taiwan’s Ministry of National Defense (MND), the spokesman, Lo Shao-he, downplayed concerns about the damage from “Chiang’s” spying: “The situation is not as serious as is described in the [media]” (Central News Agency, February 29). Although the rapid denial appears disingenuous, Taiwanese media reported “Chiang” provided information on Taiwan’s early warning radar, E-2T/E-2K Hawkeye surveillance aircraft, and the national air defense network (*Taipei Times*, February 29). The investigation may be ongoing, but the fact that Taiwanese investigators identified the scope of the damage so quickly suggests the MND could very well be right. The real question now is how was “Chiang” removing data—electronically or by hard copy—because it affects how much technical data was delivered to China.

Chinese Targeting: The number of cases in recent years involving Taiwan’s C4ISR demonstrate Beijing’s interest in it as a target of intelligence. It is not clear, however, whether these are simply collection requirements to be used as appropriate or whether these individuals were targeted because of their access to C4ISR information (*Taipei Times*, February 29; *China Times* [Taiwan], February 9, 2011; *Taipei Times*, February 20, 2008). The inclination is to credit the Chinese intelligence services with superior knowledge and malice aforesighted; however, observers should be cautious, and there are many examples of opportunism. If most Chinese espionage cases involve picking up Taiwanese businessmen in the People’s Republic and using them to access Taiwanese government officials, then the deliberateness or opportunism of China’s spies will depend on how well they can investigate

the background and connections of those businessmen.

Penetration of Taiwan: The normal elements of Taiwanese espionage cases in fact militate against really successful operations, because the Chinese intelligence services are several steps removed from the information they are trying to get. Many Taiwanese spies provide small selections of documents or their own reports that they can mail or fax to China or hand over to the intermediary. Additionally, very few Taiwanese traitors operate for very long inside Taiwan, suggesting military security and the Ministry of Justice Investigation Bureau are relatively effective. Continuing successes in recruiting spies from senior ranks of the Chinese government also suggest Taiwan maintains some security, or these operations never would have gotten off the ground ("General's Spy Comments Reveal More Than Just Espionage," *China Brief*, September 2, 2011).

There are few easy answers to these questions and certainly none that can be considered authoritative outside the Taiwanese government. For those governments and individuals concerned about Taiwan's security, a little more conscious evaluation probably is in order before throwing up one's hands entirely. Public answers about the damage of espionage must necessarily be circumspect lest still valuable intelligence methods become widely known; however, Taipei probably should remember the value of reassuring its allies in private.

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Notes:

1. Phillip Saunders and Joshua Wiseman, "Buy, Build, or Steal: China's Quest for Advanced Military Aviation Technologies," *China Strategic Perspectives*, No. 4, National Defense University, Center for the Study of Chinese Military Affairs, December 2011.

Sino-Indian Border Negotiations: Problems and Prospects

By Prashanth Parameswaran

On March 6, China and India operationalized a coordination agreement to avert conflict along their contested border. The Working Mechanism for Consultation and Coordination on India-China Border Affairs, as the agreement is officially termed, was first broached by Chinese Premier Wen Jiabao during a visit to India in December 2010, and officially formed during the 15th round of border talks between the two sides in New Delhi from January 15 to January 17 this year. After last week's two-day meeting, Indian External Affairs Minister S.M. Krishna said the mechanism would help in "minimizing" or "bridging" differences between the two countries, while the Chinese Foreign Ministry issued a statement declaring that "positive progress" had been made to safeguard peace and tranquility along the border (*Indian Express*, March 9; Xinhua, March 6). Deep underlying tensions and rapid buildups of military and infrastructure along the border by both sides however threaten to slow the already glacial progress being made in Sino-Indian border negotiations.

The border dispute centers around two separate pieces of territory: Aksai Chin and what India terms Arunachal Pradesh (or, for China, Southern Tibet). The former is located either in the Indian province of Jammu and Kashmir or the Chinese western province of Xinjiang. The latter was the site of a war between the two sides in 1962 during which India suffered an embarrassing defeat. Ambiguity still remains on other issues, however, such as Sikkim, which India annexed in 1975 and China is said to have tacitly but not officially accepted. These border disputes tend to drag in broader issues as well, such as China's frustration at India's harboring of the Dalai Lama and over 130,000 Tibetans as well as forays by one rising power into the other's backyard. Whether it be China's alleged string of bases, ports and airfields to encircle India in South Asia or India's oil and gas exploration in the South China Sea, both powers seem to be exacerbating the insecurities of the other (Xinhua, September 26, 2011).

Although China and India have been engaged in talks on the border dispute since the 1980s, confidence-building

measures only began to take off in the 1990s. The two sides concluded two agreements in 1993 and 1996 that acknowledged the line of actual control (LAC) between them and set out basic principles for the building of mutual trust in addition to some efforts to stabilize the border. More recently, agreements have been reached to expand the border trade and to seek a political settlement of the boundary issue through negotiations. Following the operationalization of the working mechanism this March, boundary talks appear to be in the second stage of a three step process involving agreements on principles, the drafting of a framework and an eventual consensus on a boundary line (*Indian Express*, January 16).

The recent diplomatic breakthrough in Sino-Indian border negotiations however masks the deep mistrust that continues to exist between Beijing and New Delhi. Recent attempts to strengthen defense ties have been stifled by protests and cancellations by both sides related to lingering border disputes. There were some hopes for an improvement a few years ago, when two rounds of joint military exercises were held in 2007 and 2008, and three rounds of the India-China Annual Defense Dialogue (ADD) were held beginning in 2008. The ADD began to evolve from exploratory dialogues to addressing boundary questions and other controversial claims (*People's Daily*, January 7, 2010). When Beijing in August 2010 however denied Indian Northern Commander Lt. Gen B.S. Jaswal entry into China for an official trip (the Northern Command is responsible for sensitive border areas like Jammu, Kashmir and Ladakh), New Delhi suspended defense exchanges with Beijing, refused to hold the third round of joint military exercises, code-named "Hand in Hand," and retaliated by obstructing the visit of three Chinese officers to India that month (*The Hindu*, August 27, 2010).

A brief thaw appeared to occur last year after Indian Prime Minister Manmohan Singh visited China in April. India sent a military delegation to China in June, Beijing reciprocated by sending a delegation in November, and the two sides held the forth round of the ADD in December. Defense ties however have hit a rocky road again in the past few months as the border negotiations took place. In November 2011, China called off the 15th round of border talks between the two sides, because it objected to the Dalai Lama speaking at an international Buddhist conference in New Delhi at around the same

time (*Indian Express*, December 20, 2011). The talks were subsequently rescheduled for January. Then, in January this year, China denied a visa to an Indian Air Force (IAF) captain Mohonto Panging who was part of a 30 member, tri-service, ADD-related visiting military delegation because he hailed from Arunachal Pradesh (*Hindustan Times*, January 6). In response, India canceled the entire trip. When Indian Defense Minister A.K. Antony visited the contested Arunachal Pradesh (which China calls Southern Tibet) late last month on the 25th anniversary of its statehood and declared India would strengthen its security facilities there to secure the eastern border, the Chinese Foreign Ministry issued a strongly-worded statement urging India not to take any action that could "complicate the situation" (*China Daily*, February 27). India retorted it would not tolerate Chinese interference in its domestic affairs (*Outlook India*, February 26, 2012).

Meanwhile, India still continues to reports hundreds of incursions by Chinese forces in a year and both sides have been increasing their military forces and infrastructure along the border in preparation for a limited conflict. Over the past few years, China has invested in major infrastructure projects in the Tibetan Autonomous Region and along the Sino-Indian border, including road and rail links that allow it to mobilize large forces with supporting logistics in a short period of time, as well as new air bases and forward airstrips. It also has 160,000 troops and intermediate-range ballistic missiles positioned in Tibet [1]. China also recently has set up new border posts on its border with Bhutan in Shannan prefecture and Tibet's Nyingchi prefecture bordering Arunachal Pradesh to keep watch on Indian infrastructure development and keep tabs on Tibetans trying to escape the border (*Times of India*, March 12).

Until recently, India's troop mobility and logistics supply in the border areas were viewed as dismal compared to China's, with roads ending far from the LAC, planned infrastructure projects being held up by funding shortages or environmental clearances, and air support hampered by the lack of airfields. New Delhi however has been moving aggressively to address this glaring asymmetry. Last November, the Indian Defense Ministry announced a \$13 billion military modernization plan to recruit 100,000 soldiers over the next five years and deploy them on the Sino-Indian border—the largest ever expansion for the Indian army and the biggest troop increase along

the border since the 1962 war (*Global Times*, November 3, 2011). New Delhi also is building air strips and helipads and has deployed supersonic cruise missiles in Arunachal Pradesh (*The Nation*, November 12, 2011). Rebuking the Indian move, an editorial in the *People's Daily* accused New Delhi of containing China but stressed that deployment of more troops would not be of much use. “In an era when precision-guided weapons are developing rapidly, everyone with common sense knows that concentrated troops could be eliminated easily”, the editorial said (*People's Daily*, November 15, 2011). This may have been a reference to Beijing’s strategy to win a conflict of short duration against India, starting with cyber and electronic-jamming operations to cripple the enemy’s infrastructure and command systems and following that with precision missile attacks before ground-based attacks (*Daily News & Analysis*, November 23, 2011).

Even if China is able to counter this, there are also signs that New Delhi may be developing an asymmetric military strategy that will not even require parity with China in terms of weapons or manpower. *Nonalignment 2.0*, a new Indian policy report released last month by the National Defense College and the influential Center for Policy Research, proposes, instead of focusing on preventing the loss of any piece of territory in the event of a border conflict, India should respond to a Chinese land-grab with a land-grab of its own to give it leverage to restore the status quo. It also advises that India try to trigger an insurgency in areas occupied by Chinese forces and attempt to interdict supply and logistics routes used by them [2]. As the distinguished Indian academic and foreign policy strategist C. Raja Mohan has argued, if this strategy is implemented officially, it has the potential to be a game-changer since it blunts China’s hard power superiority by focusing on penetrating a few weak Chinese points along the long border instead of matching Beijing’s overall hard power superiority, which some fear may grow even wider in the coming years (*Indian Express*, February 29). The fact that the report is a product of eight high-profile thinkers and involved the current Indian National Security Advisor Shivshankar Menon and his deputies in the consultation phases suggests there is at least some official support for this asymmetric strategy.

If both China and India continue to build up forces and infrastructure along contested areas without clearly demarcated boundaries, then the potential for

low-level conflict will continue to remain quite high despite cooperation in other areas or glacial progress on negotiations about how to manage conflict. Strong nationalist sentiments on both sides also make a final resolution on the disputes unlikely in the foreseeable future, with the humiliation of 1962 still fresh in Indian minds and the Tibetan question still an emotive one for Chinese hearts. Some argue that the burgeoning trade relationship, which is expected to hit \$100 billion in 2015, and cultural links between the two Asian giants, will compel both sides to shelve their territorial disagreements in the interest of broader cooperation. China’s State Councilor Dai Bingguo speaks of a “golden period to grow China-India relations” where both countries can “join hands, seize the historic opportunity and work together to advance our friendship and cooperation” (*The Hindu*, January 16). As China and India both increase their ambitions in Asia and the world, rising pride, prestige and power may divide rather than unite them—much like the very borders they squabble over.

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Notes:

1. Rajeswari Pillai Rajagopalan and Kailash Prasad. “Sino-Indian Border Infrastructure: Issues and Challenges”. ORF Issue Brief # 23, August 2010.
2. Center for Policy Research. “Nonalignment 2.0: A Foreign and Strategic Policy for India in the 21st Century”. February 2012. http://www.cprindia.org/sites/default/files/NonAlignment%202.0_1.pdf.

Coal to Newcastle? Understanding China's Coal Importing Behavior

By Kevin Jianjun Tu and Sabine Johnson-Reiser

China's dependence on other nations' coal exports is growing. In 2009, China imported 126 million tons (Mt) of coal and became a net coal importer. In 2011, China sourced 182 Mt of coal from overseas suppliers, and overtook Japan as the world's top coal importer. Moreover, as the world's top coal consumer, China's imports could rise again significantly by 2015 (Reuters, January 26; May 30, 2011; National Bureau of Statistics, *China's Statistical Yearbook*, 2008–2011). According to the Ministry of Land and Resources, China's proven coal reserves amount to 19 percent of the global total, making China home to the world's second largest proven coal reserves after the United States [1]. Given the enormous size of its domestic reserves, why is China moving to import coal from abroad instead of producing all of its needs domestically? Might this phenomenon be as superfluous and foolhardy as carrying coal to Newcastle, England's major exporter of coal in the fifteenth century? Newcastle, after all, had more coal than anywhere else.

Several factors could be contributing to China's sudden and massive entrance into the coal import market, including transportation bottlenecks, market factors, environmental and safety considerations and concerns about depleting coking coal reserves. Exploring these factors will contribute to a more thorough understanding of how China is shaping international coal markets. This understanding is essential for managing the energy policy challenges associated with China's burgeoning coal imports.

Transportation Bottlenecks

The majority of China's coal resources are found in the western and northern inland provinces. In contrast, major coal-consuming centers are concentrated along China's heavily populated eastern and southern coastline. Consequently, domestic coal output must be transported long distances via railways, roads or waterways from the west to the east and from the north to the south. Integrated railway and coastal marine shipping is the most important mode of coal transport in China. Because China lacks dedicated southbound rail lines, coal from the northern

and western provinces destined for consumption in the south must first be moved eastward to seaports around Bohai Bay in northern China. From there it is shipped to major coal ports of discharge along China's southeastern coastline.

Since 1980, national coal production in China has grown at an annual rate of 5.7 percent, reaching 3,235 Mt in 2010. During the same period, the growth in the total amount of coal transported by rail corresponded to an annual increase of 4.6 percent. In contrast, after a period of stagnation in the 1980s and early 1990s, coal throughput (both incoming and outgoing) handled by major Chinese coastal ports increased at an average annual growth rate of 19 percent (National Bureau of Statistics, *China Statistical Yearbook 2011*).

Measured as a percentage of national coal output, coal transported by rail has declined from 69 percent in 1980 to less than 50 percent in recent years, while coal throughput handled by major coastal ports has increased from 0 percent in 1980 to 36 percent (National Bureau of Statistics, *China Statistical Yearbook 2011*). As coal transportation infrastructure in China usually is operating near or at full capacity, these developments imply that the capacity of coastal ports in China has increased faster than the capacity of railway infrastructure, enabling ports to handle higher percentages of national coal output as well as a sizable amount of coal imports.

The capacity expansion of major coal ports of discharge in the southeastern provinces allows consumers there to choose between domestic coal from northern ports and overseas coal from the international market. Given the capacity constraints of the railroad infrastructure and the resulting likelihood of delays in coal shipments, Chinese consumers along the southeastern coastline may prefer coal imports over domestic supplies for the purpose of supply stability. In addition, Beijing may encourage rising coal imports as a way to ease transportation bottlenecks out of the inland provinces without costly investments in dedicated coal rail lines.

Economic Factors

Historically, contract steam coal prices for utility use were tightly regulated in China and set far below retail prices. In 2006, Beijing finally allowed prices of steam coal for

utility use to be fully subject to the market. Since then, contract coal prices for utilities have increased rapidly. The central government however still tightly regulates retail electricity prices to control inflation. As a result, Chinese utilities cannot pass the increased costs of coal on to consumers and, therefore, are forced to look for ways to lower their generation costs in order to avoid losses.

Not surprisingly, utilities in China's coastal provinces turned to international markets, as overseas coal became cost competitive with domestic supply after the worldwide economic slowdown in 2008. In 2009, China's coal imports accounted for 15 percent of global coal trade volume (International Energy Agency, *Coal Information*, 2011). On the other hand, in early 2011, when international coal prices rose above domestic prices, Chinese buyers significantly cut their coal imports.

Based on Chinese buyers' behavior in the past, domestic and international prices probably will be a significant factor for future coal imports. Squeezed by regulated electricity prices and looking to minimize costs, many Chinese buyers may import heavily when international prices are relatively low, but use domestic coal when international prices become unfavorable.

Environmental Consideration

To the extent that coal imports relieve the push to keep small and inefficient mines operating or to site new large-scale mines, they could prevent new mining activities and the associated environmental damage to China's coal-rich regions, and assist efforts by the central government to close small and often especially harmful mines. From a Chinese perspective, coal imports therefore could serve local environmental goals. Still, no matter where coal is mined, the process always has some detrimental environmental effects on the host country ("China's Botched Coal Statistics," *China Brief*, October 25, 2006).

On matters of air pollution and greenhouse gas emissions, the effects of China's coal have shifted from the local to the global level. In 2006, China overtook the United States as the world's leading carbon emitter and, since 2009, carbon dioxide emissions from Chinese coal combustion alone have exceeded national carbon emissions in the United States, leading to more international pressure

on China to reduce the carbon footprint of across its coal value chain—from mining to burning. China could view importing coal rather than mining it domestically as one possible strategy for reducing its coal-related carbon footprint—at least as a way for local officials to claim credit for environmental improvements. In a larger sense, this merely shifts the burden of coal production-related carbon emissions to other nations whose coal China imports without any effect on rising global greenhouse gas emissions. Furthermore, this strategy would not address carbon emissions from coal combustion at Chinese factories and power plants.

Coal Mining Safety

Most of China's key state-owned enterprises, including Shenhua Group and China Coal Energy Company, run state-of-the-art mining operations and have very low fatality rates. For instance, Shenhua's fatality rate of 0.025 deaths/Mt of coal in 2010 was not only significantly lower than China's national average at 0.749 deaths/Mt of coal but also lower than the U.S. level at 0.049 deaths/Mt of coal in the same year [2].

By contrast, many smaller mines, run by township and village enterprises, regularly ignore safety regulations and do not provide miners with modern equipment. In the past decade, these mines accounted for about one-third of national coal production but often nearly three-quarters of the annual fatalities. The fatality rate of township and village mines peaked at an astonishing 14.81 deaths/Mt of coal in 2001 [3].

While the central government has tried repeatedly to shut down many of these mines, its efforts have been only partially successful. China's huge demand for coal makes it difficult to forego the output provided by these mines, and vested interests in local governments try to keep the mines operating for the purposes of local revenue and personal gain ("China's Botched Coal Statistics," *China Brief*, October 25, 2006; "The Strategic Vulnerability of China's Reliance on Coal," *China Brief*, April 12, 2006). Insofar as they help ease supply and demand constraints, rising coal imports could make it easier for China to continue to close or consolidate small and unsafe mines. Beijing may view overseas coal imports as an alternative strategy to improve coal mining safety and assert its control over the industry.

Preserving Coking Coal as a Constraint

China is rich in coal, but not all types. Coking coal—compared to steam coal—is a relatively scarce resource as it only represents about one-quarter of China's total coal reserves. According to the National Administration of Coal Mine Safety, China's total coking coal reserves account for 13 percent of the global total [4].

Coking coal is a vital input for iron and steel manufacturing, and China's high-speed industrialization and rapid growth of iron and steel production capacity is quickly depleting its coking coal reserves. To alleviate shortfalls in coking coal supplies, China became a net coking coal importer in 2004. In 2010, China produced 51 percent of global coking coal production, but still imported 19 percent of the global total in order to meet domestic demand (International Energy Agency, *Coal Information*, 2011; National Bureau of Statistics, *China's Statistical Yearbook 2011*).

The sharp contrast between the share of Chinese coking coal reserves in the world and its output ratio in the international context indicates China is depleting its reserves at a very fast rate. Given the importance of coking coal in iron and steel production, Beijing is planning to categorize coking coal as a “strategic resource” and might prefer importing coking coal to buttress supplies and protect domestic coking coal reserves from depletion (Platts, April 15, 2011).

Next Steps for Managing China's Coal Imports

Coal is expected to be China's most dominant energy source in the foreseeable future. At issue is where China's coal will come from—state-of-the-art domestic production, average Chinese mines with mediocre efficiency performance, small Chinese mines with terrible environmental and safety records, imports from other coal-producing countries with questionable mining practices or imports from advanced coal mining economies with stringent environmental regulations. Each of these supply options has its own set of trade-offs, and understanding them is crucial for the international community to manage economic, geopolitical and environmental impacts from China's effect on import markets and prevent unintended consequences in emerging global coal trade patterns.

Far-reaching reforms of the governance structure of China's energy sector are necessary, whether China shifts toward importing greater amounts of coal or not. Coal imports may serve a multitude of purposes, though a preferred strategy is to enact regulations that improve the accountability and transparency of the Chinese coal mining industry. In addition, more efficiency throughout the coal value chain—from mining to transport and end use—could bring environmental, social, economic and safety benefits nationally.

China's recent swing from being a net coal exporter to a net coal importer portends significant changes on the global stage, especially in terms of climate change, because China will be exporting some of its carbon footprint, thereby shifting responsibility—at least from Beijing's perspective. Understanding China's rising coal imports is crucial for managing their far reaching policy implications and global environmental impact. More specifically, how to balance national interests of individual countries, economic benefits and global environmental integrity is an open question that certainly deserves further investigation.

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Notes:

1. China's proven coal reserves at 170 billion tons are from the Ministry of Land and Resources. Data for the rest of the world are based on BP Statistical Review of World Energy 2011.
2. See Shenhua Group's corporate website, www.shenhua.com.cn/zjsh/shgk/index.shtml; National Administration of Coal Mine Safety in China, <http://coal.nengyuan.net/2011/0117/73180.html>; and U.S. Mine Safety and Health Administration, “Coal Fatalities for 1900 Through 2010,” www.msha.gov/stats/centurystats/coalstats.asp.
3. Kevin Jianjun Tu, “Coal Mining Safety: China's Achilles' Heel,” *China Security*, Vol. 3, No. 2, 2007, pp. 36–53; China Coal Information Institute,

- China Coal Industry Development Report* (various years).
4. See the National Administration of Coal Mine Safety, www.sxcoal.com/business/1837/bookshow.html; China Coal Information Institute, *China Coal Industry Development Report*.

Pivot and Parry: China's Response to America's New Defense Strategy

By Michael S. Chase and Benjamin S. Purser, III

On January 5, 2012, President Barack Obama and Secretary of Defense Leon Panetta released new defense strategic guidance, highlighting U.S. national defense priorities and underscoring America's determination to maintain its global leadership and military superiority despite budgetary constraints [1]. The strategy indicates the United States will continue to focus on counter-terrorism, and highlights the Asia-Pacific and the Middle East as key regional priorities. Specifically, it states the U.S. military "will of necessity rebalance toward the Asia-Pacific region," in keeping with the broader "pivot" toward the Asia-Pacific illustrated by President Obama's November 2011 Asia-Pacific trip, progress toward the Trans-Pacific Partnership (TPP) economic agreement and plans to rotate U.S. military forces through bases in Australia—moves that many Chinese analysts have interpreted as aimed at countering China's growing power and influence ("China Assesses President Obama's November Asia-Pacific Trip," *China Brief*, December 20, 2011).

Within the context of a growing focus on the Asia-Pacific region, the strategy notes China's emergence as a great power "will have the potential to affect the U.S. economy and our security in a variety of ways," and the United States and China "have a strong stake in peace and stability in East Asia and an interest in building a cooperative bilateral relationship." It also highlights the need for transparency in China's defense policies: "the growth of China's military power must be accompanied by greater clarity of its strategic intentions in order to avoid causing friction in the region." Moreover, the

strategy commits the United States to maintaining the ability to operate effectively in the region despite advances in Chinese military capabilities aimed at countering U.S. intervention [2]. In addition, the strategic guidance underscores long-standing and recently-highlighted commitments to enforce free use of international water space (e.g. the South China Sea) (U.S. State Department, July 22, 2011). Given this focus on China-related issues, Chinese analysts reacted with predictable concern about the strategy itself and U.S. intentions. Official commentary highlighted the importance of maintaining a stable U.S.-China relationship, while other Chinese analysts debated Washington's intentions toward China, its ability to implement the new strategy and how China should respond.

Chinese Concerns about the New U.S. Defense Strategy

Chinese assessments of the strategy highlighted several concerns about its implications for China. First, Chinese analysts clearly interpreted the strategy as further confirmation of a U.S. shift in strategic resources to the Asia-Pacific. An article in *China Daily* assessed the new strategy as marking "an adjustment of the U.S. defense structure in an era of austerity and a shift in its strategic priorities;" it further concluded that the shift, with the new emphasis on space, cyber, naval, and air power—despite plans to reduce defense spending—is a reflection of America's supposed determination to extend its hegemony to new domains and a "cause for grave concern" (January 9).

Chinese observers opined that the United States is shifting its focus toward the Asia-Pacific not only because the region is an engine of economic growth, but also because Washington is worried that China's emergence as a great power will threaten U.S. interests and challenge American supremacy. For example, a *PLA Daily* article suggested the strategy reflects Washington's growing concern about the erosion of its superiority, which it described as "supremacy anxiety." The same article stated the Pentagon is returning to a threat-based planning model that increasingly emphasizes China (January 7). Some Chinese analysts also suggested whatever the United States says about its motives, the underlying U.S. intent is to "contain" China. Rear Admiral Yang Yi of the PLA's National Defense University opined that the new strategy

clearly targets China and Iran (*People's Daily*, January 7). Similarly, Luo Yuan, Deputy Secretary General of the China Association for Military Science, warned that U.S. actions in the Asia-Pacific region are aimed at “containing China’s rise” (*PLA Daily*, January 10). Other Chinese sources paired grudging acceptance of the U.S. role in the region with concerns about Washington’s intentions toward China. For example, a *China Daily* article stated the United States “is more than welcome [in the region], so long as it plays a constructive role,” and “both countries stand to gain if they turn the Asia-Pacific into a region of cooperation.” It also warned, however, that both countries would lose if Washington sees the Asia-Pacific “as a wrestling ring in which to contain emerging powers like China” (January 9).

Reflecting broader debates within Chinese foreign and security policy circles about the extent to which America is a declining power, at least relatively, Chinese analysts also focused on the implications of America’s economic problems. Some scholars argued resource constraints will leave the United States hard-pressed to achieve its strategic objectives in the Asia-Pacific region. Yang Yi highlighted what he characterized as the serious consequences of the global financial crisis and the overextension of the U.S. military. According to Yang, “the financial crisis, the economic recession and the wars in Iraq and Afghanistan have exhausted the comprehensive national power of the United States” (*People's Daily*, January 7, 2012). Similarly, Luo Yuan opined that, due to its economic troubles and impending budget cuts, “what the United States wants is one thing, whether or not it can do it is another” (*PLA Daily*, January 10).

Official responses from the Ministry of National Defense (MND) and Ministry of Foreign Affairs (MFA) focused on transparency. The MND spokesperson stated criticism of China in the new strategy is “completely groundless” because the strategic intentions motivating China’s national defense modernization are “consistent and clear” (China News Service, January 9). Similarly, an MFA spokesman declared that China’s strategic intentions are “clear, open, and transparent” (Ministry of Foreign Affairs, January 9).

Rather than responding directly to the individual elements of the U.S. strategic guidance, Chinese scholars and analysts tended to extrapolate on the potential results of

its implementation. For example, many addressed what they portrayed as U.S. “interference” aimed at creating problems and exploiting tensions between China and other countries in the region. Yang Yi charged that the U.S. was attempting to portray the Asia-Pacific security situation as a “mess” in order to intensify regional concerns about China and “pave the way” for America’s “return to Asia.” In addition, he cast the United States, rather than China, as the “trouble-maker” that was responsible for recent regional instability (*People's Daily*, January 7). Other Chinese commentators also asserted that U.S. “interference” has increased regional tensions (*China Daily*, January 9).

The potential increase of such “interference,” initially motivated some Chinese observers to suggest Beijing would need to take a sober look at the U.S.-China relationship. Along these lines, a *Global Times* editorial cautioned that Washington has firmly locked its strategic attention on China and that Beijing should be “clear-headed” in dealing with the United States. Furthermore, the editorial suggested that, because Beijing is incapable of offsetting U.S. concerns about China’s rise, it must deal with the United States from a position of strength (January 6). Such comments reflected the discussion and debate that immediately followed the release of the new U.S. defense guidance—not only about the implications for the U.S.-China relationship, but also about how China ought to respond to growing U.S. involvement in the region.

Recommended Courses of Action

Chinese sources highlighted a range of potential responses to the U.S. strategy. In the immediate wake of the release of the new defense strategy, comments from scholars and analysts were varied with some recommending that China pursue a more muscular response to the United States. A characteristically strident *Global Times* editorial recommended using Iran to constrain Washington’s behavior: “The U.S. strategic adjustment should once again remind us of Iran’s importance to China. Whether we like this country or not, its existence and its diplomatic strategy form a strong check against the United States.” □ Consequently, according to the editorial, China should not allow U.S. preferences to determine its approach to Iran. In addition, it recommended strengthening China’s ability to deter the United States by further developing the

Chinese military's long-range strike capabilities (January 6).

Other analysts recommended a moderate, long-term policy that neither undermines the prospects for cooperation nor ignores the potential implications of a U.S. strategic shift toward the region—in short, a hedging strategy. Major General Luo Yuan suggested remaining “simultaneously vigilant and calm” (*yi yao jingti, er yao danding*) and indicated China should focus on developing its economic strength, enhancing its military power and maintaining a favorable external environment. In addition, Luo suggested China should employ skillful diplomacy to outmaneuver the United States in the region (*PLA Daily*, January 10). Peking University’s Zhu Feng built on this concept of a balanced response, encouraging Chinese leaders to respond with a light touch, “by coupling strength and gentleness, and using softness to conquer strength” (*gangrou bing ji, yi rou ke gang*) (*Global Times*, January 13).

Official announcements clarified China’s commitment to maintain a steady course in terms of its foreign policy. Chinese officials reiterated the centrality of the U.S.-China relationship and suggested that China would work to maintain stability in the face of recent challenges. Chinese Vice Foreign Minister Cui Tiankai, for example, emphasized the importance of maintaining the stable development of U.S.-China ties (Xinhua, January 9). In a December 2011 speech, Assistant Foreign Minister Le Yucheng had underscored similar themes, urging confidence in response to China’s diplomatic challenges:

“Recently, the United States has adjusted its policies toward the Asia-Pacific and increased its input in this region. Some people are thus worried and doubt if China and the U.S. can coexist peacefully in the Asia-Pacific. Some even believe that China’s surrounding environment has deteriorated. In my view, the United States has never left the Asia-Pacific, so there is no “return” to speak of. China does not want to and cannot push the United States out of the Asia-Pacific. We hope the United States can play a constructive role in this region, and that includes respecting China’s major concerns and

core interests. The Pacific Ocean is vast enough to accommodate the coexistence and cooperation between these two big countries...In the face of the changing situation, we should seek cooperation, not confrontation, to solve issues. We must be confident that as long as China is committed to peaceful development, openness and cooperation and can attend our own affairs well, nobody can encircle us or keep us out” [3].

These official comments suggest, while there may be uncertainty about the scope and significance of America’s so-called “pivot,” Beijing will continue to chart a course that emphasizes continuing to develop its economic and military strength while at the same time attempting to assuage concerns about its growing power, in order to maintain an external environment conducive to its domestic social stability and economic development goals.

Conclusion

The initial Chinese responses to the new U.S. defense guidance reflected a range of concerns. Prickly responses to comments about transparency suggest continuing unwillingness to reveal information that is released fairly routinely by many countries. China has repeatedly underscored that it is committed to developing a military capable of preventing Taiwan from moving toward independence and deterring U.S. involvement in a cross-Straight conflict, controlling or denying others’ access to its near-seas if required, and protecting China’s emerging interests globally. Yet, in many areas, it still does not provide the kind of clarity that major powers normally do. For example, Chinese Defense White Papers have improved gradually over the years in terms of transparency, but they still lack the quality of information that many outside observers expect—including data that is often included in similar documents released by several other countries [4]. By responding to the U.S. strategy with a simple restatement that Chinese intentions are clear, Beijing glosses over the need for the kind of transparency that could help reassure its neighbors and reduce the risks of miscalculation, which seemingly does not bode well for the sort of transparency or confidence-building measures that Washington seeks.

The initial responses to America's new defense strategy illustrate that the current environment in China tolerates debate over Beijing's foreign policy challenges. The nuanced nature of some of the comments appears to reflect an evolving understanding of the regional security environment. Although U.S. statements and actions may have exacerbated Chinese concerns about "containment," they also appear to have motivated Beijing to moderate its approach to dealing with its neighbors. Furthermore, Beijing clearly recognizes the importance of a constructive U.S.-China relationship, particularly given its desire to ensure a stable environment for the upcoming leadership transition that will have unprecedented turnover in the senior-most ranks.

Despite criticizing U.S. motivations for the "pivot" and questioning Washington's ability to execute a shift to the Asia-Pacific, Chinese analysts generally recommended that Beijing observe U.S. actions and stay its existing course by continuing to focus on economic growth and enhancing its diplomacy and soft-power while simultaneously improving its military capabilities—an approach they appear to believe will leave China well-positioned to cope with America's new defense strategy and its "return" to Asia more broadly. Along these lines, Peng Guangqian recommended that Beijing neither regard changes in U.S. strategy with "indifference," nor "panic" unnecessarily about the likely consequences of the new defense guidance. According to Peng, as long as China continues building its economic strength and increasing its military power "the sky will not fall" (China Review News, February 26). The same themes were evident in a *Study Times* article in which military analyst Huang Yingxu cautioned that China should not entertain any illusions about the United States, but should nonetheless respond to the new defense strategy "calmly" and stick to its current path. Huang's reasoning is that because "time is on China's side," Beijing should remain patient and China's position will continue to improve as U.S. power declines (February 27). This confidence in China's long-term prospects suggests that debates about the new U.S. defense strategy and the U.S. strategic "pivot" are unlikely to result in major changes to the overall direction of China's foreign and security policy. Nonetheless, observers should expect to see tactical adjustments in Beijing's approach as it grapples with the multi-faceted challenges it sees as inherent in the U.S. "pivot" to the Asia-Pacific.

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Notes:

1. U.S. Department of Defense, "Sustaining U.S. Global Leadership: Priorities for 21st Century Defense," January 2012, http://www.defense.gov/news/Defense_Strategic_Guidance.pdf.
2. Ibid. pp. 2, 4.
3. "The Rapid Development of China's Diplomacy in a Volatile World," Address by Assistant Foreign Minister Le Yucheng at the Seminar on China's Diplomacy in 2011 and its Prospects, China Foreign Affairs University, Beijing, China, December 18, 2011, <http://www.fmprc.gov.cn/eng/wjdt/zjzh/t890675.htm>.
4. Michael Kiselycznyk and Phillip C. Saunders, "Assessing Chinese Military Transparency," *China Strategic Perspectives*, No. 1, National Defense University, Center for the Study of Chinese Military Affairs, June 2010.

The PLA's Three-Pronged Approach to Achieving Jointness in Command and Control

By Kevin N. McCauley

The People's Liberation Army (PLA) continues to develop a more complex form of joint operations ("PLA Developing Joint Operations Capability (Part

One): Joint Task Force Experimentation,” *China Brief*, May 20, 2011; “PLA Developing Joint Operations Capability (Part Two): Military Training Coordination Zones,” *China Brief*, June 3, 2011). A system of systems (*tixi*) integrated communications network, building joint military talent and development of a joint operations doctrine are fundamental to this effort; yet, the PLA perceives the persistence of significant problems. The PLA is taking a multi-faceted approach to find solutions and this article examines the PLA’s three-pronged approach during 2011:

- professional military education reform to educate and train joint commanders and staff;
- construction of an integrated command, control, computers, communications, intelligence surveillance and reconnaissance (C4ISR) system;
- experimentation and testing concepts and communications systems in joint exercises.

Shortfalls in Joint Operations Development

Despite years of development, PLA self-assessments in 2011 continued to identify joint command methods and integrated communications as problem areas limiting the development of a joint operations capability. A recent commentary in the *PLA Daily* by an author in the 41st Group Army addressed problem areas remaining in developing an integrated joint operations capability. These problems include the lack of jointness and integration between the services, continuing command and control issues and old command procedures employed in units with modern equipment (*PLA Daily*, December 23, 2011) [1].

Another *PLA Daily* article also discussed command and control problems, including the need to resolve the issue of overlapping command relationships in the current command and control structure. Mirroring repeated themes in PLA publications, the article stressed the need to optimize the vertical command structure while transitioning to a flatter command network with fewer command tiers and more effectively integrating forces with a joint C4ISR architecture (*PLA Daily*, July 14, 2011).

The Soft Factor Solution: Reform of Professional Military Education and Institutes to Build Joint Military Talent

An important component in achieving a joint operations capability is building a cohort of joint commanders and staff. The PLA is continuing to implement the 2003 strategic program to develop military talent by reforming professional military education. Last year saw several changes as the PLA initiated a 2011 reorganization of the military institutions and training with a focus on improving training and education of joint operations commanders and staff officers. The PLA also is stressing the training of commanders, placing an emphasis on developing and promoting staff with great potential and has reformed graduate training programs to cultivate joint operations commanders (*China’s National Defense in 2008*).

The General Staff Department (GSD) has initiated a reform and reorganization of military educational institutes and training organizations to better support the development of military talent. The plan includes efforts to optimize structures, adjust training, integrate resources, and improve training and curricula. Mergers and readjustments of PLA academies have already begun and the GSD created a new training department (*PLA Daily*, November 4, 2011; September 20, 2011; January 14, 2011; *Ta Kung Pao*, August 9, 2011).

Combined courses including PLA and foreign military officers and increased joint training with foreign countries also are part of the overall effort. These plans attempt to address the lack of interdisciplinary command talent and high-caliber information technology talent. Recent PLA press reports have highlighted programs for joint operational commanders and staff officers at the National Defense University (NDU) and National University of Defense Technology (NUDT) (*PLA Daily*, February 16).

The Technical Solution: Integrated C4ISR Developments

An integrated C4ISR architecture with “system of systems” operations capability (*tixi zuozhan nengli*) based on modern information systems will act as the foundation of the PLA’s joint operations capabilities (*PLA Daily*, May 27, 2010). The lack of integration has, according to the PLA, caused the services to spin their wheels for many years, because of the inability to share a common operating picture and communicate laterally (*PLA Daily*, September 26, 2011).

The PLA press has reported rapid developments made during the 10th and 11th Five Year Plans, yet integration remains problematic (*PLA Daily*, March 10, 2011). According to the PLA, important components of the integrated system are early warning and reconnaissance, command and control, firepower attack, network warfare and comprehensive support—some of which were tested in joint training this year (*PLA Daily*, February 4, 2010). Although the importance of information projects has been recognized at the national level, construction of integrated C4ISR systems has remained an ad hoc effort within individual MRs as evidenced in recent exercises (*PLA Daily*, December 14, 2011).

Last November, the PLA announced that the research institute of the GSD Informationization Department (until last year, known as the Communications Department) finally had developed a new-generation information system to integrate the ground forces, PLA Navy (PLAN), PLA Air Force (PLAAF) and PLA Second Artillery Force at all echelons. The new system was hailed as a major breakthrough supporting command and control in joint operations and filling a gap in the C4ISR network (*PLA Daily*, November 17, 2011). It is difficult however to assess the veracity of the report, whether this really represents central direction to replace the individual regional efforts, how far the new system has progressed in the development process or how well it supports joint command and control—especially horizontal integration. Whatever the true state of the technology's development, the PLA is looking to correct the technical inability of its forces to communicate across the services and branches.

Experimentation and Testing Concepts in Joint Exercises

Exercises provide the laboratory for experimentation and testing joint doctrine and integrated communications systems in a resistant medium that is as close as the PLA can get to real combat.

Joint exercises in 2011 have continued the focus on experimentation to develop the joint command methods and C4ISR architecture that are fundamental to developing a modern joint operations capability. The continuing focus of experimental joint exercises on command methods and communications indicates the PLA is still struggling with significant issues ("Shifting Perspectives: Assessing the PLA from the Ground Up,"

China Brief, January 20).

The important PLA joint exercises in 2011, several of which had high level observers, featured command and control coordination within joint task forces, testing of integrated C4ISR or both. Many of the exercises were described in the Chinese press as experimental, indicating that problems establishing joint command and control methods remain. While ground force units still appeared to command many of the joint task forces in the exercises, the PLAAF or PLAN also led joint formations to provide joint command experience.

The GSD 2011 Military Training Plan emphasized improving integration of command information systems between the services, campaign planning and preparation, and joint command drills. Attempts to improve communications integration and command and control were evident in 2011 exercises (*PLA Daily*, March 31, 2011; January 14, 2011).

PLA joint exercises have continued to experiment with command and control models in a joint task force. In the past, the *Lianhe*-series of experimental joint exercises in Jinan Military Region (MR) have tested command and control, and coordination methods within a joint task force (*PLA Daily*, November 11, 2008).

Joint training in 2011 included joint air defense training led by the PLA Air Force (PLAAF), and joint disaster relief training featuring an integrated military-civilian emergency command system (*PLA Daily*, May 10, 2011; May 9, 2011; May 1, 2011). Based on Chinese press reporting, the following appear to be the more important joint exercises in 2011 that tested command and control, and C4ISR issues:

- A Nanjing MR joint amphibious landing exercise in August with 1st Group Army leading a multi-service joint task force, including the PLAAF and PLAN. The exercise tested joint command integration of the force, based on an effort initiated in 2009 to construct an integrated command and control system extending to units at the campaign and tactical levels designed to correct difficulties experienced over the past decade. This effort also included cross training service personnel and developing joint operations

staff personnel. The integrated communications system allowed the campaign-level joint task force to exercise joint firepower strikes, joint maritime defense and ground and air electronic countermeasures. Although the system was considered to function at a basic level and was incomplete, the press report did state it integrated the joint forces and allowed the services to share operational information (*PLA Daily*, September 26, 2011).

- The experimental “*Qianwei-211*” exercise, held at the Queshan Combined Arms Tactical Training Base (CATTB) in mid-summer, was directed by the Jinan MR employing a ground-air joint task force testing multi-level joint command and control, mobile command posts, transfer of command between command posts, and integrated command systems against a simulated “Blue Force” (*PLA Daily*, July 6, 2011).
- The experimental “*Lianmeng 211*” joint exercise, held from 22-26 October 2011, featured a multi-service joint task force formed by Jinan MR units and led by the North Sea Fleet. General Staff officers, Jinan MR, and other PLA organizations observed the exercise indicating its importance. This is one of the few examples of the PLA following through on its stated plan to alternate lead services for joint exercises to give each service experience in leading a joint task force. It should be noted that a unit given the lead in an exercise to gain joint experience however does not mean this will be the case in wartime. This joint exercise, which had an amphibious landing phase, included PLAN, PLAAF, ground forces, the Second Artillery Force, People’s Armed Police (PAP) and reserve units. Training objectives were joint campaign planning, joint command coordination, political work and comprehensive logistics support (*PLA Daily*, December 8, 2011; October 27, 2011).
- “*Fuxiao-11*”, a Lanzhou MR opposing force exercise in October 2011, included the 21st Group Army providing the joint operation group commander. A multi-service joint task force included a ground force division and PLAAF

and Second Artillery Force elements. Integrated command and control—including coordination of air and ground firepower strikes and synchronization of unit movements and actions during operational phases—was exercised from mobile joint command posts to test multi-service command and a new joint C4ISR system (*PLA Daily*, October 31, 2011; October 29, 2011).

- “*Jingwei-2011*” in Chengdu MR exercised a ground-air joint task force in late October 2011 testing informationized mapping and navigation support. Qi Jianguo, Director of the First Department (Operations) of the GSD, directed the exercise. Qi was accompanied by personnel from the four General Departments (Staff, Political, Logistics and Armament), national-level organizations, each MR and scientific research institutes. In addition to mapping and navigation support to joint campaign planning, joint objectives included precision command, coordination, fire strikes and logistics (*PLA Daily*, October 30, 2011).
- Shenyang MR held the *Lianhe-2011* joint exercise in October exercising a ground-air joint task force coordinating air firepower support and a precision logistics system as well as testing a joint tactical integrated communication system (*PLA Daily*, November 7, 2011).
- The “*Qianfeng-2011 Queshan*” exercise held at the Queshan CATTB in the fall featured a joint tactical exercise by an armored brigade and PLAAF airborne troops to test innovations in command methods to improve the command process, combat planning and preparation; reduce redundancy in command functions; and improve target planning, preparation, and decision making (*PLA Daily*, November 2, 2011).
- The Guangzhou MR directed a joint amphibious exercise in the fall with a multi-service joint campaign task force comprised of the 42nd Group Army, PLAN and PLAAF units testing a joint command system. The joint exercise was dispersed across thirteen training sites testing the ability of the exercise headquarters to simultaneously control units from multiple

services over a wide area of operations within a single scenario (*PLA Daily*, November 7, 2011).

- A fall exercise of a ground-air joint tactical task force at the Zhurihe CATTB in Beijing MR, involving a mechanized infantry division of the 38th Group Army and a Beijing MR Air Force (MRAF) Air Division, tested joint communications and information sharing under real combat conditions and in a complex electromagnetic environment. The PLA press reported a new information system was tested (*PLA Daily*, December 9, 2011).

Conclusion

The PLA focused on three areas to solve fundamental problems that are retarding operationalization of a joint operations capability. The PLA continues experimenting with a new joint operations doctrine in exercises and reforming education and training of joint commanders and staff who will execute the new doctrine. However, it will take time to overcome identified problems in developing joint command and control models, testing joint operations concepts in exercises, constructing an integrated C4ISR architecture, and developing the command talent to lead joint task forces at the campaign and tactical levels (*China's National Defense in 2008*).

The ad hoc development of an integrated C4ISR system, which will serve as the foundation for developing a modern joint operations capability, is undoubtedly slowing the PLA's efforts to develop a joint operations doctrine, and command and control structure and methods. C4ISR integration issues are limiting the results of experimentation and testing in exercises. While the GSD's announcement of a new integrated information system appears to be the type of high-level direction required to address the problem, the systems capabilities and deployment are unknown and likely to remain so for some time..

The PLA press notes some progress, but recognizes problems remain. A focus of the 12th Five Year Plan is in the area of informationization to refine and expand joint developments and use informationization of the force to improve combat effectiveness (*PLA Daily*, March 10,

2011). An expert in military technology at the NUDT discussed the need for the PLA to quicken the pace of developing an integrated C4ISR system capable of supporting joint operations (*PLA Daily*, May 27, 2010). While the PLA is making progress, development of a modern joint operations capability and deployment of a force wide integrated C4ISR system will take considerable time. Near-term modernization and military talent reform are planned to 2020 with long-term planning extending well beyond.

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Notes:

1. It is interesting that the author also addressed issues concerning the role of the Party Committee's leadership role in dynamic modern combat, challenge's with planning and coordination, and the impact of fast-paced operations on the decision-making process. This is in contradiction of the modern PLA practice of the unit commander having the final say in operational decisions during combat. While the author discusses the Party Committee, it is likely he is referring to the Standing Committee that meets regularly to make decisions concerning unit activities. It is also unclear whether the author is only discussing perceived issues at the Group Army level or what he believes is a wider problem.
