

# HANDLING LOGISTICS IN A REFORMED PLA

## The Long March Toward Joint Logistics

By LeighAnn Luce and Erin Richter

This chapter introduces People's Liberation Army (PLA) logistics modernization as an outgrowth of demands to ready the PLA for joint operations and high-tech warfare while satisfying domestic economic and political objectives for civil-military fusion. To forecast future reforms and their impact, we examine the three interrelated logistics requirements that Chinese sources have identified as requisite for the implementation of a joint logistics system: centralized command, advanced information systems, and civil-military fusion [*junmin ronghe*, 军民融合], also known as civil-military integration. We highlight constraints on PLA logistics transformation, including ingrained corruption and weak oversight mechanisms for the military and political elite, which will continue to degrade logistics efficiency and overall combat readiness.

The research underlying this chapter relies on a range of Chinese language sources. Published speeches, interviews, and editorials provided Chinese Communist Party (CCP) and PLA leadership judgments regarding future requirements for military logistics. Official Chinese news media provided official statements relating to organizational reform. Finally, civilian and military academic and industry publications provided

additional insights into the strategy and logic behind reform objectives, specific examples and assessments of operational capabilities, and suggestions for future developments. This chapter also benefits from and builds on prior expert assessments by Susan Puska and Dennis Blasko, as well as James Mulvenon's research on corruption within the PLA.<sup>1</sup>

The PLA's long-term goal of logistics reform is a precision logistics system that enables comprehensive, timely, and accurate logistics support to PLA joint operations. Implementing a joint logistics system is the primary means of achieving this goal. The PLA defines *joint logistics* as a system that "unifies the organization of the services to implement basic logistics work; avoids duplicate staffing, organizations, and facilities; and rationally distributes workforce, material, and financial resources to support joint operations and joint activities."<sup>2</sup> Alternatively and more colloquially, the system provides logistics support at the right time, at the right place, in the required amount.<sup>3</sup> This reform does not mean to eliminate specialized logistics support from the services, but rather seeks to consolidate general logistic support and achieve efficiencies wherever possible. According to PLA authors, an ideal joint logistics support system:

- provides precision logistics support for high-tempo, dynamic joint combat operations
- achieves strategic unity of effort by implementing an integrated joint logistics command system that is itself fully integrated with a strategic joint operations command system
- leverages the full potential of China's comprehensive national power through civil-military fusion to maximize combat power, ensure peacetime efficiencies, and maintain a constant state of combat readiness.<sup>4</sup>

Inspired by the U.S. *Joint Vision 2020*, the PLA has directed logistics modernization and civil-military fusion initiatives over the last two decades toward the development of a joint logistics system.<sup>5</sup> While many procedural, organizational, infrastructure, and equipment changes have been implemented, some changes necessary to unify and centralize logistics

command remain incomplete. Consolidating and centralizing logistics command require more than just organizational reforms; it also requires the integration of logistics information systems to provide logisticians with timely and accurate information on the location, movement, status, and identity of units, personnel, equipment, material, and supplies.<sup>6</sup> For the PLA, this requirement also extends to civilian resources and demands standardized catalogs of available resources and associated attributes, regulations for military procurement, joint equipment development, and knowledge transfer. All of these objectives are enabled through integrated information systems.<sup>7</sup>

At the Third Plenum of the 18<sup>th</sup> Party Congress in November 2013, the CCP formally announced a series of significant military reforms intended to ensure that the PLA can fight and win high-tech modern wars. These reforms, to be implemented by 2020, alter the PLA's logistics command, infrastructure, and civil support systems to better support and sustain combat operations. In March 2016, the PLA renamed the General Logistics Department (GLD) as the Central Military Commission (CMC) Logistics Support Department (LSD), but delayed the execution of additional reform measures pending the September 13, 2016, establishment of the Joint Logistics Support Force (JLSF) [*junwei lianhe houqin baozhang budui*, 军委联合后勤保障部队].<sup>8</sup> The reason for this delay is unclear, but the broader restructuring of the PLA headquarters and military regions (MRs) to CMC and joint theater commands (TCs) may have been a necessary precursor.

With the establishment of the JLSF, PLA leaders separated logistics management responsibilities (resource management and regulatory activities) from combat service support (sustainment activities). Logistics management is now to be carried out by the CMC LSD, and combat service support is to be carried out by the JLSF. This move parallels wider PLA reform efforts to separate warfighting from force management. This change reduces the responsibilities of LSD offices, purportedly enabling the LSD to concentrate on resource management, training, infrastructure construction, and procedural oversight. (This reduction in responsibilities

may explain why the current director of the CMC LSD, Song Puxuan, no longer has an ex officio seat on the Central Military Commission.) A more focused LSD will theoretically result in a greater standardization of logistics management and support procedures across the force, more efficient use of financial and materiel resources, streamlining of bureaucratic processes, and an overall decrease in corrupt practices by logistics professionals. Meanwhile, the JLSF is free to focus on planning and executing integrated joint logistics support for strategic and campaign operations.

These structural reforms create opportunities for greater centralization of command and control that allow the PLA to more effectively capitalize on two decades of information technology (IT), transportation, and facility improvements; maturing combat service support doctrine and training; and civil-military fusion that collectively improve PLA capabilities to manage and execute precision logistics support.

## **A New Logistics System for a New PLA**

The CCP and PLA vision for future combat capabilities requires a modernized, centralized, efficient logistics system, but in many ways, the PLA military logistics support system has persisted as a relic from the Chinese civil war. Logistics organizations resisted numerous previous efforts to reform the system to more effectively support joint logistics. This section first reviews early attempts at and thinking on joint logistic reform. It then examines advances in three areas that appear necessary to meet national defense and economic logistics expectations: unification and centralization of command, IT integration (or *informationization*), and civil-military fusion. It then examines corruption within PLA logistics organizations as an obstacle to logistics reform.

### **Early Attempts at Reform**

Joint logistics was first raised by Zhou Enlai in a 1952 report to the Joint Military Affairs Commission. Over the next four decades, the PLA unsuccessfully experimented with various methods of implementing joint

logistics. PLA analysts attribute these failures to external events that made structural reform of the PLA's logistics system impossible. These include the Cultural Revolution, the death of Lin Biao in 1971, and PLA force reductions in the 1980s.<sup>9</sup>

In the 1990s, Jiang Zemin, as CMC chairman, directed the PLA to research and draft a series of military reforms. Drivers for the reforms included PLA logistics failures in the 1979 Sino-Vietnam war, observations of U.S. military operations in the Balkans and Persian Gulf, the PLA's inferior military capabilities revealed in the 1995–1996 Taiwan Strait crisis, and a general lack of combat readiness. In December 1998, the CMC enacted a series of military reforms intended to transform the PLA into a modern and professional joint operations force. These were subsequently outlined in the January 24, 1999, PLA Joint Combat Program. Nested in the program was a 10-year PLA logistics support system reform plan that emphasized implementation of a joint logistics system, socialization of support functions, modernization of logistics equipment, and improvements to logistics training and resource management.<sup>10</sup>

As a result of these reforms, the PLA logistics system now appears to be capable of effectively supporting large-scale military campaigns along internal lines of communication and has a nascent capability to sustain external force projection operations.<sup>11</sup> However, in 2014, the PLA identified several areas that required additional emphasis in order to advance PLA joint warfighting capabilities. These included unifying logistic units from all services under one command center and establishing mutual support relationships among and between joint and service units. The PLA needed additional improvements to logistics information systems in order to obtain the data necessary to command joint operations. The PLA also needed to diversify force projection capabilities to support operations both at home and abroad. This diversification required enhancing intermodal transport capabilities and developing new air and maritime transport platforms that leveraged the potential of the civilian sector. Most importantly, the PLA needed to reduce corruption within the logistics system to guarantee that

the limited resources of the military are used to meet the actual needs of armed forces building and combat readiness.<sup>12</sup>

### Unified and Centralized Logistics Command

Centralization of PLA logistics under one unified system has been an objective of PLA leaders since the 1950s. In 1952, the separate supply systems for the army, navy, and air force were unified under the leadership of the General Rear Area Services Department (later named the GLD).<sup>13</sup> On at least five separate occasions between 1965 and 1985, the PLA experimented with more comprehensive implementations of joint logistics command, but these were never fully executed.<sup>14</sup> This was likely due to a lack of joint culture in the broader PLA, but an internal power struggle may also have played a role.<sup>15</sup> The PLA's 1998 joint operations reforms under Jiang Zemin were a necessary precursor to real joint logistics command integration.<sup>16</sup>

By 2002, Joint Logistics Departments (JLDs) were established under each MR. The JLDs unified most transportation, medical, and material support; infrastructure construction; equipment procurement; and financial management functions under one headquarters. This allowed the PLA to eliminate many redundant structures previously maintained by the navy, air force, and Second Artillery Force; these services retained control of their specialized facilities and units.<sup>17</sup> By 2005, eight division-level logistics organizations, 94 rear depots, 47 hospitals, and nearly 2,000 other support organizations were eliminated, and a professional civilian cadre system was instituted to further reduce active-duty military manpower requirements. The cuts enabled the PLA to reduce its size by at least 135,000 troops.<sup>18</sup>

In July 2004, the GLD initiated a joint logistics pilot test in the Jinan MR, combining MR joint logistics and service logistics organization under the newly named Jinan War Zone JLD.<sup>19</sup> The War Zone JLD brought together logistics officers from the MR JLD, and MR army, navy, air force, and Second Artillery commands to jointly plan and direct logistics support for all PLA units operating in the MR. After the conclusion of the pilot in

July 2006, GLD evaluations concluded that a fully integrated joint logistics system improves the speed and efficiency of logistics support by centrally managing logistics command and control at the theater/war zone level, consolidating logistics facilities and organizations, and reducing the amount of combat service support capabilities required to support joint operations by creating joint task-organized logistics support formations.<sup>20</sup>

However, the test identified some barriers that prevented implementation of the integrated joint logistics support system across the PLA. While the new system enabled centrally managed logistics planning and direction at the theater/war zone level, IT deficiencies undermined the JLD's ability to maintain visibility over logistics assets. The JLD was unable to direct the distribution of materials and service in time to support operational demands.<sup>21</sup> Established logistics standards, regulations, policies, and procedures did not adequately support the effective execution of joint logistics operations. A period of comprehensive research and development was necessary to make adjustments that fully integrated the requirements of the navy, air force, and Second Artillery. Also, CMC leaders concluded that PLA-wide structural reforms would be required to effectively centralize logistics command. Presumably, this included the transition from MRs to TCs.

In December 2007, the CMC promulgated "An Outline on Comprehensively Building Modern Logistics," which directed logistics modernization tasks required to fully transition the joint logistics system by 2020.<sup>22</sup> From 2007 onward, the Jinan MR continued to operate an integrated joint logistics system at the MR level. This provided unified direction for service and general logistics support activities in order to identify what command, communications, procedural, and operational changes would be necessary for PLA-wide implementation.<sup>23</sup> The MR would also continue to experiment with organizing joint logistics support for deployed combat formations. This involved task-organizing joint and service logistics units and fostering mutual support relationships between services.<sup>24</sup>

Between 2009 and 2015, with the exception of Jinan, the MRs continued to operate separate logistics systems for shared and service-specific

requirements. However, they also experimented with centralized theater logistics command structures to inform planning for future PLA-wide structural reforms. MR exercises emphasized the use of integrated logistics command systems to direct logistics operations, and ad hoc joint logistics commands were integrated into maturing joint operations command structures for increasingly sophisticated campaign-level exercises.<sup>25</sup> PLA informationization, or IT integration, projects used these exercises to refine systems to horizontally and vertically link all logistics activities.

### Informationized Logistics

PRC experts on informationization recognize that the ability to aggregate, process, and access large quantities of data, in near real-time, is an absolute requirement to conduct precision logistics. Moreover, examination of PLA logistics information system research suggests that the foundational technological requirements necessary for centralized joint logistics were not met as of 2012. This suggests that there were significant technical barriers to creating a centralized, joint logistics command organization.<sup>26</sup>

Despite the high degree of abstraction that this term has consistently carried in PLA theoretical discussions, at its core, informationization (*xinxihua*, 信息化) emphasizes the integration of information technology and other science and technology developments. As former Deputy Director of the All-Military Informationization Work Office Hou Xigui expounds in the 2002 publication *Military Informationization Construction Research*, the “application of information technology to logistics support promises to achieve more accurate and more intense logistics support. When information, logistics, and transportation are brought together, it fundamentally changes the traditional delivery support mode, achieving more accurate, precise, and intense support.”<sup>27</sup> This publication also depicts the logistics support system as one essential IT component together with combined armed forces; each service’s operations platforms; communication systems; and intelligence, surveillance, and reconnaissance systems as components of information technology. According to the author, these collectively form



an integrated command platform that will provide a breakthrough in the capabilities of the battlefield command and control system.<sup>28</sup>

PLA researchers recognize that the PLA's desired logistics system involves a large number of technical challenges. Two experts on logistics informationization and information aggregation at the PLA Logistics Command University raised a tentative list of technology requirements:<sup>29</sup>

- unified military logistics standards, required to achieve logistics system interconnectivity and interoperability
- military logistics sensing and collection equipment, such as the comprehensive application of radio frequency identification (RFID), GPS, and other Internet of Things sensing and identification technology that allows for real-time, dynamic visualization and control
- construction of a ubiquitous information transmission network, using an All-Military Joint Communication Network, Military Comprehensive Information Network, and other network resources to form a Military Logistics Information Transmission Backbone Network
- a robust information management platform, to enable data storage, efficient processing, rapid retrieval, with intelligent processing to prevent abuse
- development of comprehensive enterprise applications.

This list lays out the technical milestones for the PLA to achieve visualized, precise, intelligent, coordinated logistics support. Over the last decade, the PLA has concentrated on making improvements in several areas, including inventory visibility and management; standardization, which would enhance networking of logistics information; tracking of materiel and equipment throughout the distribution process; and information management.<sup>30</sup> Warehouse and transportation management information systems, RFID and GPS, and camera and aerospace surveillance systems have all been sporadically integrated and networked to military logistics command centers.<sup>31</sup> Standardized logistics funding and material management platforms and a suite of online procurement systems have been launched to integrate logistics managers with commercial suppliers for materiel procurement and

distribution.<sup>32</sup> PLA logisticians continue to modify sustainment planning factors that are used to drive logistics information systems based on exercise consumption and the characteristics of newly fielded equipment.<sup>33</sup> In 2013, the PLA created the All-Military Logistics Information Center in Beijing to integrate logistics system standards to provide a framework for the large-scale integration of logistics information systems.<sup>34</sup>

Informationization programs show that the PRC has prioritized a development path that will enable military logistics organizations to coordinate and integrate information sources from outside civilian entities with military information systems. One recent example is the new Forces Medical Cloud, which leverages cloud technology to implement horizontal and vertical integration between information systems between military medical organizations and related Civilian Information Systems, such as between military hospitals and China's center for disease control. According to a 2014 presentation by Han Wei, one of China's leading experts on military medical information systems, this system design leverages cloud computing-based technology, Software as a Service, Infrastructure as a Service, and Platform as a Service to create a managed, scalable foundation to develop big data information-sharing capabilities.<sup>35</sup>

The Forces Medical Cloud project appeared to progress rapidly and created network linkages between civilian and military organizations over a wide geographic area, a requirement for centralized logistics. Specifically, the design specifications show that the information services were available via mobile and fixed-line networks, including three presumably military networks, a military 3G mobile network, local area networks, as well as a medical telework network interface, allowing for information-sharing and coordination. The project progressed from the research and planning phase in January 2013 through intermediate phases to arrive at the application expansion phase in September 2014. Moreover, the project was expected to reach the final summary phase by January 2015. Thus, in 2 years, Han Wei argues that the cloud-based model provided significant improvements to the information platform that would allow cost-efficient, scalable information systems infrastructure.<sup>36</sup>

The Forces Medical Cloud project also highlights systemic weaknesses within the PLA's previous IT development programs, which suffered from a lack of leadership and foresight and resulted in the creation of inefficient, cumbersome IT systems that could not easily evolve or scale. In its early years of development, the Forces Medical Cloud suffered from technical impediments to the integration and centralization of data and was not reasonably operational until 2015. According to Han Wei, developers faced five major situational challenges:

- numerous organizations were involved and were widely distributed
- numerous systems were involved and were not easy to use
- it was difficult to extend and difficult to maintain
- there was insufficient funding and insufficient technology
- the system was fixed, not mobile.

Furthermore, he described the pre-cloud computing development environment as characterized by stovepipe style applications that required intensive investments and that were difficult to manage. Notably, several of the challenges faced by the developers, such as dealing with numerous, cumbersome systems, insufficient funding and technology, as well as stovepiped development models, demonstrate larger systemic failures in leadership and program management. Other logistics information systems likely suffered from similar early development setbacks but have similarly benefited from advances in project development strategy and technology capabilities in recent years.

### **Civilian Military Fusion**

A third focus for PLA joint logistics reform is civil-military fusion, also known as civil-military integration (see the chapter by Lafferty in this volume for more details). Civil-military fusion aims to leverage the full potential of a state's comprehensive national power to maximize combat capabilities, ensure peacetime efficiencies, and guarantee a constant state of combat readiness. Within China, it also emphasizes the fusion of economic development and military modernization to support the country's overall economic and social

development. China's goals are not only to leverage national resources in order to support military requirements but also to promote economic growth through advancements in military capabilities.<sup>37</sup> One Chinese National Defense University professor highlights the Beidou system as an example that was developed for national defense, but when commercialized can yield 400–500 billion yuan (63–79 billion USD) in returns by 2020.<sup>38</sup>

As part of logistics reform, civil-military fusion seeks to separate from the PLA those operations where civilian resources can be used as part of a larger strategy to strengthen the national economic system and reduce military operating costs. This involves outsourcing logistical support to the civilian sector wherever operationally feasible.<sup>39</sup> The target of this reform is to “incorporate the development of military logistical services into the state economic and social development system and embed military production in the civilian sector.”<sup>40</sup> Between 2000 and 2007, more than 5,200 administrative, subsistence, medical, and construction services were outsourced to the civilian sector. Subsequently, troops deployed in China for exercises and contingency operations have received some level of civilian support through support-the-front offices or mobilized militia units.<sup>41</sup>

The PLA is also working to leverage the capabilities of the civilian sector to support a variety of logistics operations. Many of China's maturing logistics information systems utilize commercial technologies already widely employed by international civilian and military logistics systems.<sup>42</sup> In addition, Chinese regulations and laws issued between 2003 and 2016 facilitated the PLA's ability to use transportation capacity from the civilian sector and encouraged civil transportation construction projects, both infrastructure and equipment, to take military support requirements into consideration.<sup>43</sup> These projects have improved PLA strategic mobility along internal lines of communication through improved infrastructure and transport equipment, neither of which must be regularly maintained by the military.<sup>44</sup> In addition, the construction of dual-use air and maritime platforms and infrastructure, usually retained in the civil sector, has allowed the PLA to make modest improvements in its ability to support external force projection operations.<sup>45</sup>

China's 2015 defense white paper, *China's Military Strategy*, also emphasizes the importance of civil-military fusion. The document notes that through 2020, the PLA will continue to focus on "developing uniform military and civilian standards for infrastructure, key technological areas, and major industries, exploring methods for training military personnel in civilian educational institutions, developing weaponry and equipment by national defense industries, and outsourcing logistics support to civilian support systems."<sup>46</sup> The paper also calls on the PLA to enhance force projection capabilities and support overseas operations. The PLA will likely rely heavily on mobilized or contracted civilian support resources to do so.

### **Corruption as an Enduring Constraint**

As the PLA's logistic system has developed in the modern era, fiscal corruption and links to the private sector have distracted from its mission. This section addresses increased corruption within logistics as an outgrowth of CCP policies in the 1980s and 1990s, which was compounded as logistics organizations operated in an environment that lacked transparency and independent oversight. After characterizing the environment, it examines the impact of corruption in undermining logistics system reform efforts.

Deng Xiaoping's economic reforms in the 1980s helped cultivate an environment for corruption in the PLA that persisted to the 2010s, as they encouraged the PLA to participate in commercial activities while not incentivizing proper behavior or providing adequate internal or external oversight mechanisms.<sup>47</sup> According to late 1990 estimates, there were over 15,000 PLA-run companies at one point, generating billions of yuan each year.<sup>48</sup> However, the military's activities were shrouded and rarely discussed publicly, although corruption was considered a serious issue.<sup>49</sup> In July 1998, Jiang Zemin declared that the PLA would divest itself from all commercial activity, a pronouncement reiterated in his plans for PLA modernization.<sup>50</sup> As a result, the GLD rapidly shed many of its corporate investments, handing over factories and other commercial businesses to the civilian sector,

and dissolved GLD organizations responsible for managing much of the PLA's commercial enterprise and factory system.<sup>51</sup>

However, while many businesses were formally removed from military control, in practice many remained under the control of relatives or close associates of active-duty officers.<sup>52</sup> CMC directives to outsource allowed senior PLA officials to direct contracts for services to these companies, enhancing their profits or to individuals with whom they desired to curry favor. Graft was rampant.<sup>53</sup> According to the *Global Times*, as of May 2016, the PLA remained active in commercial businesses in sectors such as telecommunications, personnel training, logistics, technology, and health care.<sup>54</sup> Furthermore, PLA regulations allowed the compensatory transfer of land use rights (with GLD approval) and for units to form partnerships with local governments and build real estate projects together on PLA-owned land.<sup>55</sup>

This set of semi-legal and outright illegal involvements of PLA officials in commercial ventures hobbled PLA logistics reforms in particular because senior GLD leaders responsible for implementing reforms had a great deal to lose in the process. GLD officials managed most of the PLA's land and facilities, oversaw its construction and procurement contracts, managed its material and much of its equipment, approved budgets, and accounted for and disbursed its funding.<sup>56</sup> The GLD also managed the PLA audit system and was responsible for ensuring the fiscal discipline of senior PLA officials, until the CMC transferred the audit system to its direct control in 2014.<sup>57</sup>

Anti-corruption measures have been in full swing since January 2012 when then-GLD Deputy Director Liu Yuan declared war on the establishment, promising to fight corruption to the end. President Xi Jinping soon championed this fight.<sup>58</sup> According to press reports, at least 17 deputy-corps level or higher logistics officials were charged with corruption as of September 2016, and many others, including former GLD Director Liao Xilong, are rumored to be under investigation.<sup>59</sup> However, these are just the tip of the iceberg of structural, endemic corruption within the PLA and especially within its logistic system. The elevation of the director of the CMC Discipline Inspection Commission to CMC member status in

October 2017 is an indicator of the continuing extent of the corruption problem and of Xi's determination to try to address it.

Examining the efficacy of future PLA logistics reforms will require consideration of the extent to which Xi has successfully curbed corruption. Emphasis on civil-military fusion will compound this challenge, as military and civilian logisticians must operate in the same ecosystem. One problem is that China's civilian logistics industry appears to also function in an opaque environment that makes identifying corruption difficult.<sup>60</sup> FTI Consulting's Asia branch has observed some standard practices within the logistics industry that create risk and waste resources: bribery of staff, unauthorized subcontracting to third parties, collusion between suppliers in the bidding process, and undisclosed conflicts of interest between purchasing or management staff. Overall, the industry appears to lack transparency and legislative control, especially when examining the supply chain beyond first-tier suppliers. Reforms to the PLA logistics system are bound to fail if there is not a similar holistic overhaul of business processes within the civilian sector. That would be a particularly ambitious goal given China's demand for economic growth.

### **A "Reformed" PLA Logistics System**

On February 1, 2016, the PLA announced the permanent transition to a joint operations command system comprised of five theater commands centrally directed by the CMC.<sup>61</sup> By creating a unified command structure at the strategic level, this decision set the conditions under which an integrated joint logistics system could be established across the PLA.<sup>62</sup>

The September 13, 2016, inauguration of the JLSF marked the implementation of the PLA's new logistics system. During its establishment ceremony, Xi Jinping identified the JLSF as the CMC's main force for implementing joint logistics support for strategic and campaign operations.<sup>63</sup> Identification of the JLSF as subordinate to the CMC and not the LSD suggests that, in sync with wider PLA organizational reforms, joint logistics support for PLA operations will be separated from force management.

The LSD appears to be continuing previous GLD responsibilities of PLA-wide strategic logistics planning, material management and procurement, facilities management, contracting, budget management and funds disbursement, international military engagement, and overall administration of PLA hospitals and medical programs.<sup>64</sup> To strengthen PLA logistics support as a whole, the LSD is pursuing improved mechanisms to draw support from China's commercial enterprises to support PLA logistics operations, develop technologies to enhance logistics planning and execution, and improve logistics support equipment.<sup>65</sup> In addition, the LSD appears to be spearheading initiatives to standardize information technology for logistics management across PLA services to improve data integration required to support joint logistics execution.<sup>66</sup>

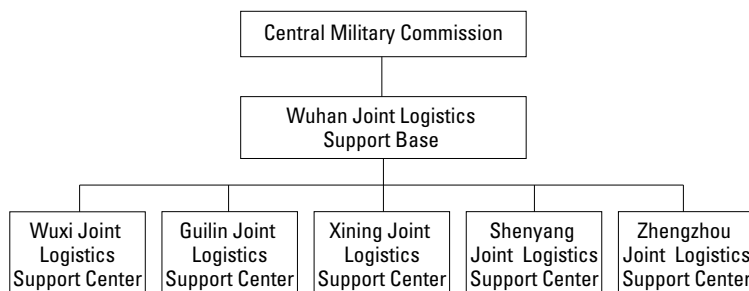
The JLSF now coordinates the execution of logistics support to theater commands, assuming the responsibilities of previous GLD direct subordinate units and MR JLDs. Its responsibilities include managing the storage and distribution of material, fuel, ordnance, and directing transportation, field medical, and subsistence support to PLA units assigned to theater operations.<sup>67</sup> Despite its designation as CMC subordinate, it is possible that the JLSF remains administratively organized under the LSD, but it is almost certainly operationally subordinate to the CMC Joint Staff Department.

The JLSF is a force led by the army leader grade Wuhan Joint Logistics Support Base (JLSB), which directs five joint logistics support centers (JLSCs), each aligned to a theater command (see figure 1).<sup>68</sup> Each of these centers is a deputy army leader grade organization. Before the reforms, the Wuhan JLSB was responsible for providing strategic material support to the entire PLA. The base had some subordinate units that controlled equipment, weapons, fuel, material, and munitions depots spread throughout central China. In wartime, it was tasked with providing strategic logistics support to war zones/theaters.<sup>69</sup> The base will likely continue in this role, with an altered command structure.

The JLSF as a whole appears to operate separately from but in general support of the theater commands in order to facilitate the movement of



**Figure 1. Organization of the Central Military Commission Joint Logistics Support Force**



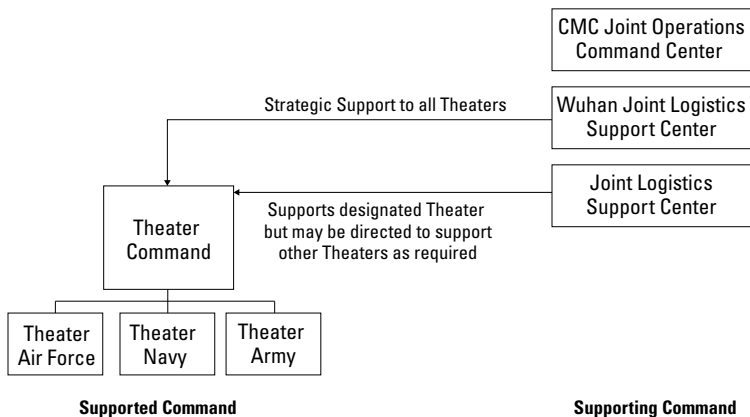
Source: Zhang Tao, ed., "Defense Ministry Holds News Conference on Joint Logistic Support System Reform," China Military Online, September 14, 2016, available at <[http://english.chinamil.com.cn/view/2016-09/14/content\\_7258622.htm](http://english.chinamil.com.cn/view/2016-09/14/content_7258622.htm)>.

resources across theater boundaries as required. The JLSCs are subordinate to the Wuhan JLSB but provide direct support to TC operations and general support to all units garrisoned and/or operating within their designated theater command. JLSCs also appear to have some authority in tasking military districts (MDs) and service logistics units within their area to provide support to units operating nearby, regardless of service affiliation.<sup>70</sup>

How JLSCs are tasked to support TC elements is unclear, as there is no evidence of a logistics department or staff directly subordinate to the TC headquarters after reform. Each TC army and air force headquarters does have a subordinate logistics department.<sup>71</sup> It is possible TC subordinate units or service components request support directly from the JLSC without consulting the TC headquarters, indicating the logistics system [xitong, 系统] is distinct from the operational system, but this is unlikely given the PLA's overarching drive toward integrated joint operations. More likely, there is a yet to be identified logistics coordinating entity within the headquarters responsible for prioritizing the logistics requirements of subordinate units based on overall operational needs (see figure 2).

JLSCs are new organizations. Rather than just renaming five MR JLDs and transitioning their staffs to support the new theater commands, the PLA created entirely new commands geographically separate from the

**Figure 2. JLSF May Act as a Supporting Command Separate from Theater Commands**



Source: Zhang Tao, ed., “Defense Ministry Holds News Conference on Joint Logistic Support System Reform,” China Military Online, September 14, 2016, available at <<http://english.chinamil.com.cn/>>

TC headquarters.<sup>72</sup> The JLSCs were probably redesignated and elevated to deputy army leader grade organizations from five of the PLA’s previous 26 division leader grade joint logistics support departments (JLSDs), which were subordinate to MR JLDs (see table).<sup>73</sup>

<b>Table. Probable Association of Former Joint Logistics Subdepartments to New Joint Logistics Support Force</b>		
<b>Previous Designation</b>	<b>New Designation</b>	<b>Supports</b>
Wuhan Rear Base (MUCD 62101)	Wuhan Joint JLSB	Strategic Support to all Theaters
13 <sup>th</sup> JLSD (MUCD 73801)	Wuxi JLSC	Eastern Theater Command
20 <sup>th</sup> JLSD (MUCD 76140)	Guilin JLSC	Southern Theater Command
25 <sup>th</sup> JLSD (MUCD 68060)	Xining JLSC	Western Theater Command
2 <sup>nd</sup> JLSD (MUCD 65133)	Shenyang JLSC	Northern Theater Command
33 <sup>rd</sup> JLSD (MUCD 72495)	Zhengzhou JLSC	Central Theater Command

Key: JLSB: joint logistics support base; JLSC: joint logistics support center; JLSD: joint logistics support department; MUCD: Military Unit Cover Designator.

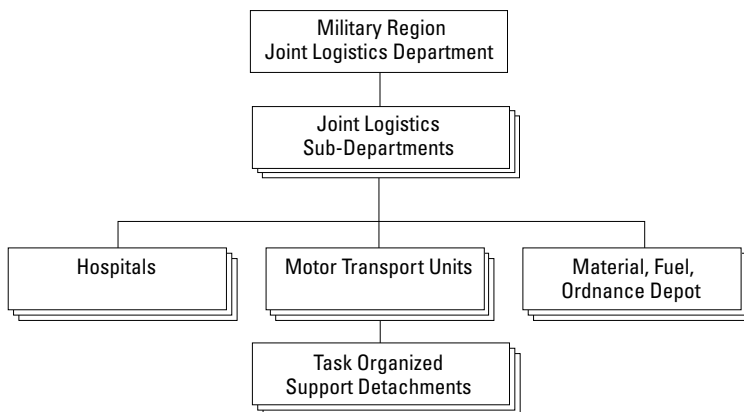
The reason for the separation of JLSCs from the TC headquarters remains unclear. It is possible that PLA planners, in line with establishing

theater commands that can smoothly transition to support wartime operations without significant changes to staff, wanted to establish standing theater rear command posts to manage logistics, equipment, and mobilization support work in war and peace.<sup>74</sup> If this is the case, theater mobilization for contingencies may be improved since a full-time rear command post would standardize command and support relationships among the JLSCs, theater logistics forces, militia, reserve, and civilian supporting organizations. However, at present there is no evidence that JLSCs are responsible for equipment support or mobilization activities outside of material procurement and transportation.

Some formerly disparate units appear to have been consolidated under the JLSCs, most notably the former GLD transportation military representative offices (MROs) and possibly elements of former MD maritime transport units. The following organizations have been listed as subordinate to JLSCs in various press reports, though the distinction between second- and third-level organizations remains unclear:<sup>75</sup>

- Political Work Department
- Medical Service Support Department
- PLA Hospitals
- Military Facilities and Construction Division
- Procurement Division
- Supplies Division
- Military Representatives Division
- Navigational Affairs MRO
- Transportation MRO
- Railway MRO
- Airport MRO
- Subordinate Work Division
- Fuel, Supply, and Ordnance Depots
- Ship Transport Units
- Waterway Technical Support Unit.

**Figure 3. JLSD Organization Prior to PLA Reform**

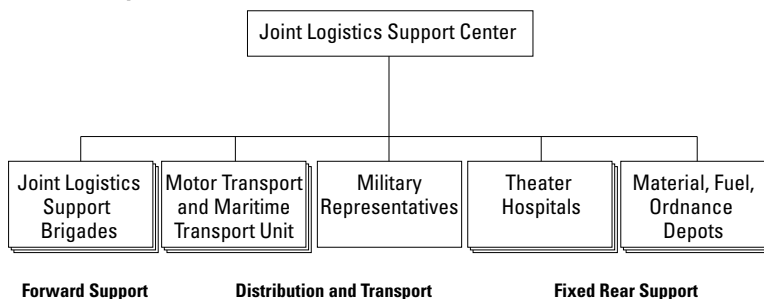


Source: Cheng Yunjie and Xu Jinzhang, "PLA Continues Long March of Logistics Reform," Xinhua, July 28, 2007, available at <[http://web.archive.org/web/20081025011030/http://news.xinhuanet.com/english/2007-07/28/content\\_6441943.htm](http://web.archive.org/web/20081025011030/http://news.xinhuanet.com/english/2007-07/28/content_6441943.htm)>.

Prior to reform, each MR JLD had between three and five subordinate division leader grade logistics units responsible for providing general logistics support to all PLA units operating within their assigned area and task organizing detachments to provide direct support to deploying units as required (see figure 3). JLSDs also controlled a number of subordinate regiment leader grade material, ordnance, and fuel depots; subsistence support and transportation units; and hospitals.<sup>76</sup> These units were the core of the PLA's joint logistics support system.

While five former JLSDs have been redesignated as JLSCs, there is currently little information available on the other JLSDs. It is possible that the PLA may separate the remaining JLSD fixed and mobile logistics capabilities into separate but interconnected systems in order to increase readiness to support power projection operations. JLSDs have been experimenting with various methods of task organizing contingency support brigades for two decades and could carve these units out into their own direct support echelon under the JLSC, while other echelons manage fixed sites and general support capabilities. This may allow a consolidation of some fixed storage areas and allow for a reduction of support personnel.<sup>77</sup>

**Figure 4. Possible Organization of JLSCs with Separated Fixed and Mobile Groups**



Source: Cheng Yunjie and Xu Jinzhang, "PLA Continues Long March of Logistics Reform," Xinhua, July 28, 2007, available at <[http://web.archive.org/web/20081025011030/http://news.xinhuanet.com/english/2007-07/28/content\\_6441943.htm](http://web.archive.org/web/20081025011030/http://news.xinhuanet.com/english/2007-07/28/content_6441943.htm)>.

The JLSCs are likely to maintain separate maritime and motor transport units to support the distribution of materials from rear to forward areas supplemented by military representatives who coordinate civilian transport support to theater operations as required, under both peacetime and wartime conditions (see figure 4).

A flattening of the logistics organizational structure at the theater level may enable an overall reduction in the size of the PLA logistics force while increasing its operational efficiency by designating full-time forward support units that can concentrate on mission-specific combat logistics support tasks, while retaining a robust theater storage and distribution system. By subordinating the military representative system under JLSCs, the PLA may also be able to more effectively leverage growing civil-transport capabilities, creating economies of force. If the supply support system follows a similar model as the transport system, the PLA may be able to more effectively procure materials from local commercial suppliers, reducing theater material storage requirements.

There is little information available to date on planned changes to navy, air force, or Rocket Force logistic organizations. However, some consolidation of these organizations is likely where efficiencies can be found. The newly designated PLA Army will likely inherit some facilities in order to

establish its own organic service logistics system separate from the joint system. Media reports suggest that the GLD's Qinghai-Tibet Military Depot has already been transferred to the army.<sup>78</sup>

It remains unclear exactly what the relationship between JLSCs and TC service logistics units will be in the future. PLA officials have indicated that service logistics systems will continue to maintain specialized capabilities and manage material specific to each service, while the JLSF will manage all general support.<sup>79</sup> This is in itself not a break from previous practice; however, it is possible under the “reformed” PLA logistics system that the JLSF will have greater authority to task service logistics units to provide support to other units where and when necessary, procedures required for precision logistics. It appears that JLSCs are much more joint in composition than their JLD predecessors, indicating staffs are more likely to understand service-specific requirements and capabilities and be capable of integrating this information into joint logistics planning and execution.<sup>80</sup>

### **Conclusion and Questions for Further Research**

Through 2020, the PLA will likely complete the reorganization of its logistics command structure, centralizing support for theater operations under a joint logistics headquarters that is more capable of leveraging the civilian sector for support. However, legacy logistics infrastructure, leadership, and culture, especially corruption, continue to exist as barriers to reform. The future sustainability of PLA logistics reform efforts will depend on how effectively the PLA can professionalize logistics operations to ensure reliability within the system and modernize its information technology to effectively integrate information systems among military units, and between military and civilian logistics entities.

The PLA appears to be increasing the centralized management of logistics IT projects, while continuing to outsource support work to the civilian sector. Both efforts appear focused on rectifying problems associated with stovepiped, outdated, and cumbersome systems that impede joint logistics

and operational planning and execution. The PLA has now introduced organizations dedicated to IT standardization and integration to achieve PLA-wide interoperability and compatibility. At the same time, the PRC is prioritizing dual-use technology and unified civilian and military technology standards that may allow the PLA to more effectively integrate disparate information systems currently in use and speed the fielding of newer and more technologically advanced platforms. In particular, PRC adoption of new data science methodologies, and development of cloud computing and Internet of Things technologies, have the potential to significantly advance logistics management for the PLA.<sup>81</sup> These technologies are necessary for the PLA to capitalize on structural changes designed to enhance joint operations and overcome previous organizational and informational stovepipes.

One major question that remains unanswered is how the PLA will modernize its logistics system to support overseas operations. The structural reforms under way and efforts to integrate civilian information systems into PLA decision and planning systems all emphasize improvements to logistics support along internal lines of communication and outward along China's immediate periphery. There appears to be little emphasis on developing true strategic force projection capabilities to support PLA overseas operations beyond the production of large Y-20 military transport aircraft. In 2014, PLA leaders identified the development of force protection and sustainment capabilities as goals for PLA logistics modernization, yet to date there has been little discussion about how this will be technically and procedurally achieved, or even what organization will be responsible for these operations since they are beyond the current responsibilities of any theater command.<sup>82</sup>

On July 11, 2017, the PLA officially established China's first overseas military base in Djibouti, ostensibly under the PLA Navy. The base is purportedly intended to enhance support to naval operations in the Gulf of Aden, though other joint missions are likely in the future.<sup>83</sup> It remains unclear how the PLA will permanently sustain operations from this base,

though it will most likely involve regular support from Chinese commercial shipping and logistics enterprises to reduce the demand on military lift platforms. Closely watching the development of logistics mechanisms associated with the Djibouti base will be critical to understanding how and how well the PLA will regularly sustain operational forces along external lines of communication. Future academic research on PLA logistics should emphasize civil-military coordination mechanisms to leverage national resources to support PLA operations overseas as well as the development of PLA expeditionary logistics capabilities with particular emphasis on the maturation of reception, staging, onward movement, and integration procedures and supporting technological enablers.

## Notes

<sup>1</sup> Susan Puska, “Taming the Hydra: Trends in China’s Military Logistics Since 2000,” in *The PLA at Home and Abroad: Assessing the Operational Capabilities of China’s Military*, ed. Roy Kamphausen, David Lai, and Andrew Scobell (Carlisle, PA: Strategic Studies Institute, 2010), 553–624; Dennis J. Blasko, *People’s War Lives On: Chinese Military Logistics in the War Zone* (Santa Monica, CA: RAND, 2004); James C. Mulvenon, “To Get Rich Is Unprofessional: Chinese Military Corruption in the Jiang Era,” *China Leadership Monitor*, vol. 6 (Spring 2003); and James C. Mulvenon, “So Crooked They Have to Screw Their Pants On—Part 3: The Guo Boxiong Edition,” *China Leadership Monitor*, vol. 48 (Fall 2015).

<sup>2</sup> *China Military Logistics Encyclopedia* [中国军事后勤百科全书] (Beijing: Golden Shield Publishing House [金盾出版社], August 2002), vol. I, 43.

<sup>3</sup> Liu Wei and Yu Xin [刘炜, 于鑫], *Food and Fodder Go First* [粮草先行] (Hunan: Hunan Science and Technology Press [湖南科学技术出版社], 2005); Zhang Zhende [张振德] “‘Precision Logistics’—The Focus of Military Logistics Reform” [“精确后勤”:军事后勤变革的聚焦点], *PLA Daily* [解放军报], September 23, 2003.

<sup>4</sup> Liu Zhigang [刘志刚], “We Should Focus on Three Types of Changes in Logistics Reform” [后勤改革要着眼三种转变], *PLA Daily* [解放军报], September 9, 2014; Wang Haibo, Gao Zhiwen, and Hua Xiao [汪海波, 高志文, 花晓], “The Grand Program for Building Modern Logistics—An Interview of Zhou Songhe, Chief of Staff of the General Logistics Department’s Headquarters Department on Issues Concerning the Logistic Work in the New Year” [谋篇布势: 建设现代



后勤展宏图—总后司令部参谋长周松和就新年度后勤工作有关问题答记者问], *PLA Daily* [解放军报], February 12, 2014; Liao Xilong [廖锡龙], “Comprehensively Develop Modern Logistics with Scientific Development Concept as Guide” [以科学发展观为指导全面建设现代后勤], *Qiushi* [求是], July 16, 2006; Cheng Ying and Xu Jinzhang [程瑛, 徐金章] “Inside Story of PLA Logistics Reforms” [解放军后勤变化内情], *Liaowang Dongfang Zhoukan* [瞭望东方周刊], no. 3 (January 19, 2006), 33–34, 36–38; Ma Shuming [马书铭], “Issues on the Theory and Practice of the PLA’s Joint Logistics” [解放军联合后勤理论和实践的问题], *China Military Science* [中国军事科学], no. 2 (2000), 14–20.

<sup>5</sup> *Joint Vision 2020—America’s Military: Preparing for Tomorrow* (Washington, DC: The Joint Staff, June 2000).

<sup>6</sup> Joint Publication 4-01.8, *Joint Tactics, Techniques, and Procedures for Reception, Staging, Onward Movement, and Integration* (Washington, DC: The Joint Staff, June 13, 2000).

<sup>7</sup> Liu and Yu, Food and Fodder Go First; Ma Haoliang [马浩亮], “Civil-Military Fusion” [军民深度融合多管齐下支撑强军路], *Ta Kung Pao* [大公报], November 4, 2015, available at <<http://news.sina.com.cn/o/2015-11-04/doc-ixfk-mrvp5097082.shtml>>.

<sup>8</sup> Xu Qiliang [许其亮], “Firmly Push Forward Reform of National Defense and the Armed Forces” [坚定不移推进国防和军队改革], *People’s Daily* [人民日报], November 20, 2013; Cao Zhi, Li Xuanliang, and Wang Shibin [曹智, 李宣良, 王士彬], “At CMC Reform Work Meeting, Xi Jinping Stresses: Comprehensively Implement Reform and Military Strengthening Strategy, Resolutely Take Path to Strong Military with Chinese Characteristics” [习近平在中央军委改革工作会议上强调全面实施改革强军战略坚定不移走中国特色强军之路], *Xinhua*, November 30, 2015; “Inaugural Meeting of Joint Logistics Support Force of Central Military Commission Held in Beijing; Xi Jinping Confers Army Flags to Wuhan Joint Logistics Support Base and Various Joint Logistics Support Centers and Delivers Speech” [中央军委联勤保障部队成立大会在京举行习近平向武汉联勤保障基地和各联勤保障中心授予军旗并致训词], *Xinhua*, September 13, 2016, available at <<http://politics.people.com.cn/n1/2016/0914/c1024-28714073.html>>.

<sup>9</sup> Zhang Liansong and Liu Jing [张连松, 刘晶], “From Self-Supporting Arms and Services to Joint Support for the Three Services: The 50-Year History of Our Army’s Joint Logistics Reform” [从军兵种自我保障到三军联合保障-我军联勤改革50年的历史跨越], *History of the People’s Liberation Army* [人民军队史], April 2004, available at <[www.hprc.org.cn/pdf/JLSY200404005.pdf](http://www.hprc.org.cn/pdf/JLSY200404005.pdf)>.

<sup>10</sup> Pei Fang, “Major Operation to Be Performed on Military Logistics System,” *Kuang Chiao Ching* [广角镜], no. 318 (March 16, 1999), 50–52. The People’s Liberation Army (PLA) defines *socialization of support functions* as replacing military support personnel with civilian professionals and contracting out logistics services to civilian companies. See Shi Wennian and Wang Haibo [石文年, 汪海波], “The History and Theory of the Socialization of Military Logistics” [军人后勤保障社会化的历史及理论研究], *China Military Science* [中国军事科学], no. 2 (2001), 57–61.

<sup>11</sup> *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2016* (Washington, DC: Office of the Secretary of Defense, April 26, 2016), available at <[www.defense.gov/Portals/1/Documents/pubs/2016%20China%20Military%20Power%20Report.pdf](http://www.defense.gov/Portals/1/Documents/pubs/2016%20China%20Military%20Power%20Report.pdf)>; Dennis J. Blasko, “Clarity of Intentions: People’s Liberation Army Transregional Exercises to Defend China’s Borders,” in *Learning by Doing: The PLA Trains at Home and Abroad*, ed. Roy Kamphausen, David Lai, and Travis Tanner (Carlisle Barracks, PA: Strategic Studies Institute, 2012), 171–212; Feng Chunmei [冯春梅], “The Shenyang Military Region Explores a New Way of Military-Civilian Integration Strengthening Logistic Support by Complementing Each Other and Seeking Win-Win Results” [沈阳军区探索军民融合新路子—互补共赢强保障], *People’s Daily* [人民日报], February 11, 2011.

<sup>12</sup> Gao and Hua, “The Grand Program for Building Modern Logistics”; Liu Zhigang [刘志刚], “We Should Focus on Three Types of Changes in Logistics Reform” [后勤改革要着眼三种转变], *PLA Daily* [解放军报], September 9, 2014.

<sup>13</sup> *China Military Logistics Encyclopedia*, vol. I, 43.

<sup>14</sup> Zhang and Liu, “From Self-Supporting Arms and Services to Joint Support for the Three Services.”

<sup>15</sup> Ibid.

<sup>16</sup> Puska, “Taming the Hydra”; Pei, “Major Operation to Be Performed on Military Logistics System.”

<sup>17</sup> Liao Xilong [廖锡龙], “Personally Experiencing Jinan Theater’s Major Joint Logistics Reform” [亲历济南战区大联勤改革], *PLA Daily* [解放军报], December 16, 2008, available at <<http://military.people.com.cn/GB/1076/52984/8527794.html>>.

<sup>18</sup> *China’s National Defense in 2006* (Beijing: State Council Information Office, 2006), available at <[www.china.org.cn/english/China/194332.htm](http://www.china.org.cn/english/China/194332.htm)>; Liao, “Personally Experiencing Jinan Theater’s Major Joint Logistics Reform”; Hao Yingquan and Li Xuanlian, “PLA Begins to Implement System of Non-Active Service Staff in 2006,” *Xinhua*, February 15 2006; “Documentary for Military” [军事纪事], CCTV-7, June 22, 2009.

<sup>19</sup> Under the old system, a peacetime military region would become a “war zone” in a war situation, and the war zone commander would gain operational control over air force and navy units within the war zone. Under the new theater command system, the theater commander has operational control of army, navy, air force, and perhaps conventional Rocket Force units in both peacetime and wartime.

<sup>20</sup> Liao, “Personally Experiencing Jinan Theater’s Major Joint Logistics Reform.”

<sup>21</sup> Wang Fan [王帆], “Benefits Opened Up by Distributed Support” [配送式保障开辟的效益途径], *PLA Daily* [解放军报], January 29, 2009.

<sup>22</sup> Liao, “Personally Experiencing Jinan Theater’s Major Joint Logistics Reform.”

<sup>23</sup> Dong Zhaoxin and Zhao Jianwei, “From Separate Logistics System to Joint Logistics of Three Services,” *PLA Daily*, January 17, 2007; Zhao Jianwei [赵建伟], “Strategic Concept for China’s Military Logistics,” *Guangming Daily* [光明日报], January 17, 2007.

<sup>24</sup> Zhang Lianwu [张练武], ed., “Theme Word: Integrated Joint Logistics” [主题词:一体化联勤], *Qianwei Bao* [前卫报], April 2, 2008.

<sup>25</sup> Chen Biao and Wang Yijie, “Logistics Command College Cultivates Commanders of Joint Logistics,” *PLA Daily*, November 10, 2009; Zhang Shuo [张硕], “Riveting Attention on Winning, Striving for Breakthroughs—General Review of Shenyang Military Region’s Efforts for Strengthening Combat Capability Building” [紧盯打赢求突破—军区加强作战能力建设综述], *Qianjin Bao* [前进报], November 11, 2009; Lin Siping, Ning Jianhong, and Tian Yong [林思平, 宁剑宏, 田勇], “Play the Thunderous Music of Joint Support—An Eye-Witness Account of a Joint Campaign Logistics Support Exercise Conducted by a Guangzhou Military Region Emergency Army Service Station” [奏响联合保障最强音—某分部应急兵站联合战役后勤保障演练见闻], *Renmin Qianxian* [人民前线], October 11, 2011; Zhang Fenghai [张风海] et al., “Crossing Hundreds of Miles to Conduct Major Exercise—Overview of ‘Mission Action-2013A’ Cross-Region Mobility Campaign Exercise” [千里跨越大阅兵—‘使命行动-2013A’跨区机动战役演习综述], *Renmin Qianxian* [人民前线], September 25, 2013, 2–3; Zhan Qi [战旗] et al., “Three Services Come Together to Cast Sharp Swords—Actual Accounts of Explorations on Joint Operation Training Innovation by 26<sup>th</sup> Group Army” [三军联袂制利剑—第26集团军探索联合作战训练创新纪实], *Qianwei Bao* [前卫报], November 16, 2014, 3; Lei Jianghai and Zheng Xiaogang [雷江海, 郑孝刚], “Lanzhou MR Carries Out All-Element Training in Campaign Logistics Support” [兰州军区全要素演练战役后勤保障], *PLA Daily* [解放军报], September 21, 2015.

<sup>26</sup> Guo Shijun, Luo Ting, and Qing Taiping [郭石军, 罗挺, 卿太平], “Application of IoT Technology in Integrated Military Logistics Information System” [物联网技术在一体化军事物流信息系统中的应用], *Logistics Technology* [物流技术], no. 2 (2012), 209–212, available at <[http://cf.lcchina.org.cn/docbak/5/6/d/163862\\_50d-bea604056d.pdf](http://cf.lcchina.org.cn/docbak/5/6/d/163862_50d-bea604056d.pdf)>.

<sup>27</sup> “Communications Troops Achieve Three Great Leaps from ‘One Half’ Radio” [通讯兵从“一部半”电台实现三大跨越], *Guangming Daily* [光明日报], July 11, 2007, available at <[http://news.xinhuanet.com/mil/2007-07/11/content\\_6358114.htm](http://news.xinhuanet.com/mil/2007-07/11/content_6358114.htm)>; Hou Xigui [侯喜贵], “Military Informationization Construction Research” [军队信息化建设研究], *The Basic Characteristics of Military Informationization* [军队信息化的基本特性] (Beijing: PLA Press [解放军出版社], 2002), 63.

<sup>28</sup> Hou, “Military Informationization Construction Research.”

<sup>29</sup> Guo, Luo, and Qing, “Application of IoT Technology in Integrated Military Logistics Information System.”

<sup>30</sup> Puska, “Taming the Hydra.”

<sup>31</sup> Liu Zhigang [刘志刚], “We Should Focus on Three Types of Changes in Logistics Reform” [后勤改革要着眼三种转变], *PLA Daily* [解放军报], September 9, 2014; Zhang, “‘Precision Logistics’—The Focus of Military Logistics Reform.”

<sup>32</sup> Cheng and Xu, “Inside Story of PLA Logistics Reforms”; Cui Rongli and Fan Juwei, “PLA Shapes Up New Concept Model for Integrated Material Procurement and Support,” *PLA Daily*, August 17, 2006.

<sup>33</sup> Gao and Hua, “The Grand Program for Building Modern Logistics.”

<sup>34</sup> “PLA Logistics Information Center Established,” *PLA Daily*, July 8, 2013.

<sup>35</sup> Han Wei, “Forces Medical Cloud ‘Research and Development’ Integration Design and Concept” [部队卫生云‘研建用管’一体化设计与思考], Presentation at the Next Generation Medical Information Technology Foundation Forum, Beijing, August 2014, 24, available at <[www.hit180.com/wp-content/uploads/zhuanli/wuxi/wuxi\\_012.pdf](http://www.hit180.com/wp-content/uploads/zhuanli/wuxi/wuxi_012.pdf)>.

<sup>36</sup> Ibid.

<sup>37</sup> Jiang Luming [姜鲁鸣], “Military-Civilian Integration: The Shield of Modern National Defense” [军民融合: 现代国防安全之盾], *Loose Leaf Anthology* [活页文选], no. 71 (2015), 34, available at <[http://dangjian.com/djw2016sy/djw2016wkztl/wkztl2016xihy/201604/t20160414\\_3287764.shtml](http://dangjian.com/djw2016sy/djw2016wkztl/wkztl2016xihy/201604/t20160414_3287764.shtml)>.

<sup>38</sup> Jiang Luming [姜鲁鸣], “Why to Raise Civil-Military Integration to the Status of National Strategy” [为何把军民融合上升为国家战略], *People’s Daily* [人民日报], May 31, 2015.

<sup>39</sup> Liao, “Comprehensively Develop Modern Logistics with Scientific Development Concept as Guide”; Yuan Jianda, Xu Jinzhang, and Xu Zhuangzhi, “The Liberation Army Will Basically Put in Place Modern Logistical Services in 2020—Exclusive Interview with Liberation Army General Logistics Department Deputy Director Li Maifu,” *Xinhua*, December 24, 2007.

<sup>40</sup> *Ibid.*

<sup>41</sup> “Joint Action 2015D,” *Hsiang Kang Shang Pao* [香港商报], August 11, 2015; Liao, “Comprehensively Develop Modern Logistics with Scientific Development Concept as Guide”; Zhang Hongwei and Du Qingguo, “The ‘Fusion’ Effect Is Everywhere—Eyewitness Account of the Theater’s Promotion of Joint Logistics Support Structure Reform,” *Qianwei Bao*, August 22, 2010, 3; Huai Qianjian, Nie Jun, and Su Fengshou [怀前进, 臬军, 苏丰收], “Providing Strong and Solid Support for Victory in Battle—An Overview of the Public Relations Work During the Large-Scale Battle Training Exercise across Five Provinces, ‘Mission Action-2013A,’ Conducted by the Nanjing Military Region” [为能打胜仗提供坚强有力保障—‘使命行动-2013A’跨区机动战役演习群众工作概述], *Renmin Qianxian* [人民前线], October 18, 2013; Wang Wei and Yang Zhen [王伟, 杨振], “Recent Development in the Study of the Thought of People’s War Under Informationized Conditions” [信息化条件下人民战争思想研究的新进展], *China Military Science* [中国军事科学], no. 2 (2009).

<sup>42</sup> Puska, “Taming the Hydra.”

<sup>43</sup> “National Defense Transportation Law of the People’s Republic of China,” *Xinhua*, September 3, 2016; and Yao Jianing, ed., “China Passes New Law on National Defense Transport,” *Xinhua*, September 3, 2016, available at <[http://english.chinamil.com.cn/view/2016-09/03/content\\_7241207.htm](http://english.chinamil.com.cn/view/2016-09/03/content_7241207.htm)>; “Regulations on National Defense Mobilization of Civil Means of Transportation” [授权发布:《民用运力国防动员条例》(全文)], *Xinhua* [新华网], October 9, 2003, available at <<http://news.sina.com.cn/c/2003-10-09/1654886729s.shtml>>.

<sup>44</sup> Blasko, “Clarity of Intentions”; “Liao Xilong Urges to Accelerate Military Transportation Mobilization Drive,” *PLA Daily*, June 23, 2010; Gao Xiaowen [高效文] et al., “Stars Shine Down on the Vast Flat Lands and the Moon Floods the Great Rivers—Looking Back on the 2010 Military-Wide Joint Combined Operations Drill” [星垂平野阔月—回眸2010年全军联], *Jiefangjun Huabao* [解放军画报], January 6, 2011, 6.

<sup>45</sup> Sang Yongliang, Lin Lin, and He Mingxiang [桑永亮, 林琳, 何名享], “Engaging in Emergency Support at Sea” [应急保障在海上进行], *Jiefangjun Huabao* [解放军画报], October 16, 2010, 54–55; Lin Hongmei and Qu Baichun [林红

梅, 屈百春], “Our Country Holds Emergency Logistical Support Exercise at Sea in Jinan Theater to Test Transportation Combat Readiness” [我国交通战备海上应急保障演练在济南战区举行], Xinhua, July 18, 2010; *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2016*.

<sup>46</sup> *China’s Military Strategy* (Beijing: State Council Information Office of the People’s Republic of China, May 2015), available at <[http://eng.mod.gov.cn/Press/2015-05/26/content\\_4586805.htm](http://eng.mod.gov.cn/Press/2015-05/26/content_4586805.htm)>; “China’s Military Strategy” [中国的军事战略], Xinhua, May 26, 2015.

<sup>47</sup> James C. Mulvenon, *Soldiers of Fortune: The Rise and Fall of the Chinese Military-Business Complex, 1978–1998* (Armonk, NY: M.E. Sharp, 2000).

<sup>48</sup> “PLA Bans Commercial Activities as Anti-Graft Drive Gains Momentum,” *Global Times*, May 5, 2016, available at <[www.globaltimes.cn/content/981596.shtml](http://www.globaltimes.cn/content/981596.shtml)>.

<sup>49</sup> Mulvenon, *Soldiers of Fortune*.

<sup>50</sup> “Hu Jintao Emphasizes Importance of Closing PLA Businesses,” Xinhua, July 28, 1998.

<sup>51</sup> Cao Haili, “The Chinese Army Has Sailed Out of the Business Sea,” *Beijing Zhongguo Qingnian* [北京中國青年], February 15, 1999, 4–7; Mulvenon, *Soldiers of Fortune*; “PLA Bans Commercial Activities as Anti-Graft Drive Gains Momentum.”

<sup>52</sup> James C. Mulvenon, “PLA Divestiture 2.0: We Mean It This Time,” *China Leadership Monitor*, no. 50 (Summer 2016), available at <[www.hoover.org/research/pla-divestiture-20-we-mean-it-time](http://www.hoover.org/research/pla-divestiture-20-we-mean-it-time)>; State Council Information Office, “China’s National Defense in 2002,” December 9, 2002, available at <<https://fas.org/nuke/guide/china/doctrine/natdef2002.html>>.

<sup>53</sup> Li Xuanliang [李宣良], “All Units of the Armed Forces to Deal with Commercial Bribery” [中国军队开展治理商业贿赂专项工作], Xinhua [新华网], August 2, 2006, available at <<http://jczs.news.sina.com.cn/2006-08-02/1642387932.html>>.

<sup>54</sup> “PLA Bans Commercial Activities as Anti-Graft Drive Gains Momentum.”

<sup>55</sup> Ibid.

<sup>56</sup> Puska, “Taming the Hydra.”

<sup>57</sup> Yuan Hao and Fan Juwei [袁浩, 范炬炜], “Liao Xilong Speaks at Plenary Session of All-Army Leading Group for the Work of Auditing Economic Responsibility of Leading Cadres; Calls for All-Round, In-Depth Implementation of the Work of Auditing Economic Responsibility of Leading Cadres in the Whole Army” [廖锡龙在全军领导干部经济责任审计工作领导小组全体会议上强调全面推进军队领导干部经济责任审计工作深入开展], *PLA Daily* [解放军报], July 21, 2006, 1; An Puzhong and Zhang Xiaoqi [安普忠, 张晓祺], “According to the Order

Signed by Chairman Xi, the PLA Audit Office Is Turned into an Organ Under the Central Military Commission; Fan Changlong Attends and Addresses the Event for Announcing the Order; Xu Qiliang Reads Out the Order; Zhao Keshi Attends the Event” [近平主席签署命令解放军审计署划归中央军委建制 范长龙出席宣布命令大会并讲话 许其亮宣读命令赵克石一同出席], *PLA Daily* [解放军报], November 7, 2014; Minnie Chan, “Xi Jinping Shifts Control of PLA Audit Office to Military’s Top Decision-Making Body,” *South China Morning Post* (Hong Kong), November 7, 2014, available at <[www.scmp.com/news/china/article/1633802/xi-jinping-shifts-control-pla-audit-office-militarys-top-decision-making](http://www.scmp.com/news/china/article/1633802/xi-jinping-shifts-control-pla-audit-office-militarys-top-decision-making)>.

<sup>58</sup> John Garnaut, “Chinese General to Fight Corruption,” *Sydney Morning Herald*, January 19, 2012, available at <[www.smh.com.au/world/chinese-general-to-fight-corruption-20120118-1q6n2.html](http://www.smh.com.au/world/chinese-general-to-fight-corruption-20120118-1q6n2.html)>.

<sup>59</sup> Li Hao [李昊], “Corruption Is Serious in the Former CPC Central Military Commission Joint Support Force” [中共军委联勤保障部队成立前身腐败严重], *Epoch Times* [大纪元], September 14, 2016, available at <[www.epochtimes.com/gb/16/9/13/n8296789.htm](http://www.epochtimes.com/gb/16/9/13/n8296789.htm)>; Minnie Chan and Choi Chi-yuk, “Two More of China’s Former Top Commanders Taken Away for Corruption Investigation,” *South China Morning Post* (Hong Kong), August 5, 2016, available at <[www.scmp.com/news/china/policies-politics/article/1999535/two-more-chinas-former-top-commanders-taken-away](http://www.scmp.com/news/china/policies-politics/article/1999535/two-more-chinas-former-top-commanders-taken-away)>.

<sup>60</sup> Greg Hallahan, “Collusion, Creative Bribery & Subcontracting,” FTI Consulting, October 30, 2014, available at <[www.fticonsulting-asia.com/~media/Files/us-files/insights/articles/collusion-creative-bribery-subcontracting.pdf](http://www.fticonsulting-asia.com/~media/Files/us-files/insights/articles/collusion-creative-bribery-subcontracting.pdf)>.

<sup>61</sup> Jiang Jie, “China Unveils Five New Theater Commands,” *Global Times* (Beijing), February 1, 2016, available at <[www.globaltimes.cn/content/966860.shtml](http://www.globaltimes.cn/content/966860.shtml)>.

<sup>62</sup> Liu and Yu, Food and Fodder Go First.

<sup>63</sup> Ibid.

<sup>64</sup> Wang Ke [王克], “Military Logistics” [军事后勤], in *Chinese Military Encyclopedia* [中国军事百科全书], Song Shilun and Xiao Ke [宋时轮, 萧克], eds., vol. IV (Beijing: Military Science Publishing House [军事科学出版社], 1997), 1–8; Guo Jing and Luo Guojin [郭晶, 罗国金], “Fourth Great Wall International Forum on Military Medicine Successfully Held” [第四届长城国际军事医学论坛在京成功举办], *Xinhua*, April 2, 2017, available at <[http://news.xinhuanet.com/mil/2017-04/02/c\\_129523752.htm](http://news.xinhuanet.com/mil/2017-04/02/c_129523752.htm)>; Huang Panyue, “PLA Releases Self-Heating Meals Research and Development Project to the Public,” *China Military Online*, March 28, 2017, available at <[www.81.cn/jwywpc/2017-03/28/](http://www.81.cn/jwywpc/2017-03/28/)>.

content\_7542387.htm>; “PLA Starts Test and Trial of ‘Dog Tags,’” *China Military Online*, February 21, 2017, available at <[http://eng.chinamil.com.cn/view/2017-02/21/content\\_7496278.htm](http://eng.chinamil.com.cn/view/2017-02/21/content_7496278.htm)>; “China, Israel Vow to Enhance Military Logistics Cooperation,” *China Military Online*, February 21, 2017, available at <[http://eng.chinamil.com.cn/view/2017-02/21/content\\_7496087.htm](http://eng.chinamil.com.cn/view/2017-02/21/content_7496087.htm)>; “PLA Makes Headway in Improving Combat Protective Outfit System,” *China Military Online*, February 13, 2017, available at <[http://eng.chinamil.com.cn/view/2017-02/13/content\\_7487395.htm](http://eng.chinamil.com.cn/view/2017-02/13/content_7487395.htm)>.

<sup>65</sup> “PLA Takes Extraordinary Measures to Ensure Rations Supply,” *China Military Online*, March 28, 2017, available at <[http://eng.chinamil.com.cn/view/2017-03/28/content\\_7542292.htm](http://eng.chinamil.com.cn/view/2017-03/28/content_7542292.htm)>; Zhao Jie and Lu Qingguo [赵杰, 陆庆国], “Comprehensive Upgrade of Military Oxygen Support System for Plateau Region” [装备多样化供给标准化管理制度化我军高原制供氧保障全面升级], *PLA Daily* [解放军报], March 14, 2017, available at <[www.81.cn/jfjbmap/content/2017-03/14/content\\_171675.htm](http://www.81.cn/jfjbmap/content/2017-03/14/content_171675.htm)>.

<sup>66</sup> “Meeting on Application and Demonstration of All-Military Logistics Operations Processing Platform Held in Beijing” [全军后勤业务处理平台应用示范现场会在火箭军举行], *Rocket Force News* [火箭兵报], November 20, 2016, 1.

<sup>67</sup> Ibid.

<sup>68</sup> “Defense Ministry Holds News Conference on Joint Logistic Support System Reform,” *China Military Online*, September 14, 2016, available at <[http://english.chinamil.com.cn/view/201609/14/content\\_7258622.htm](http://english.chinamil.com.cn/view/201609/14/content_7258622.htm)>.

<sup>69</sup> Information accessed at <[www.cgw.cn](http://www.cgw.cn)> and “The General Logistics Department, an Expert Mission to Wuhan Rear Base for the Intelligence Services,” May 13, 2012, available at <[www.chinamil.com.cn/site1/xwpdxw/2009-06/09/content\\_1792344.htm](http://www.chinamil.com.cn/site1/xwpdxw/2009-06/09/content_1792344.htm)> and <[www.wwgcc.com/luntan/viewthread.php?tid=80838&page=4](http://www.wwgcc.com/luntan/viewthread.php?tid=80838&page=4)>; “PLA General Logistics Department’s Wuhan Rear Base Organizes 100-Odd Principal Military Commanding Officers for Centralized Military Training Conducted in Line With Updated Military Training Outline,” *PLA Daily*, June 9, 2009; Fan Juwei, Li Yong, and Kuang Xiaowen, “Rear Base of GLD Provides Massive Support of Disaster Relief Materials,” *PLA Daily* [解放军报], June 2, 2008; Xu Xianhong and Luo Xianning [许先洪, 罗贤宁], “GLD Certain Vehicle Depot Takes Measures to Improve Personnel Quality” [总后某汽车仓库多措并举提高人员素质], *PLA Daily* [解放军报], May 13, 2012, available at <[http://web.archive.org/web/20130709094828/http://www.chinamil.com.cn/site1/xwpdxw/2009-05/28/content\\_1778894.htm](http://web.archive.org/web/20130709094828/http://www.chinamil.com.cn/site1/xwpdxw/2009-05/28/content_1778894.htm)>; Wei Xiaojun and Weng Huainan [魏小俊, 翁淮南], “General Logistics Department Base Holds



Strategic Support Exercise” [运行快捷协同密切保障精确—总后某基地首次实施战略支援保障演练], *PLA Daily* [解放军报], October 7, 2006, 1.

<sup>70</sup> Liu Jianwei [刘建伟] et al., “The Joint Logistic Support Force, Please Receive Five ‘Letters From Users’” [联勤保障部队, 请收5封“用户来信”], *PLA Daily* [解放军报], May 2, 2017, available at <[www.81.cn/jmywyl/2017-05/02/content\\_7583691.htm](http://www.81.cn/jmywyl/2017-05/02/content_7583691.htm)>; Gao Jie [高洁], “The Wuxi Joint Logistics Support Center: Strengthen the Service Mindset, Improve the Service Form” [联勤保障中心: 运行满月, 新风扑面无锡联勤保障中心强化服务意识改进保障方式], *PLA Daily* [解放军报], October 16, 2016; Liu Jianwei and Liu Lei [刘建伟, 刘磊], “The Shenyang Joint Logistic Support Center: Quicken the Integration of Support Data for the Missions” [沈阳联勤保障中心着眼使命加速保障数据融合], *PLA Daily* [解放军报], October 16, 2016; Zhao Jie and Zheng Xiaogang [赵杰, 郑孝刚], “Xining Joint Logistical Support Center Explores Support Methods for Joint Operations and Joint Training: Integrating ‘Provision Officers’ into Joint Operations System” [西宁联勤保障中心探索联战联训联保模式: ‘粮草官’融入联合作战体系], *PLA Daily* [解放军报], February 24, 2017.

<sup>71</sup> Qiu Xinli and Zhou Yuan [邱新力, 周远], “When Ordinarily Using Electronic Expense Submissions, What’s to Be Done When Met with Emergency Assignments During Network Outages?” [平时采用无货币报销, 断网遇有紧急任务时又该怎么办?], *Junbao Jizhe* [军报记者], May 23, 2017, available at <[http://zb.81.cn/content/2017-05/23/content\\_7614223.htm](http://zb.81.cn/content/2017-05/23/content_7614223.htm)>; “‘Three Capabilities’ Qualification Competition Develops Comprehensive Quality” [‘三能’达标考核锤炼综合素质], *PLA Daily* [解放军报], February 13, 2017, available at <[www.81.cn/jfjbmap/content/2017-02/13/content\\_169266.htm](http://www.81.cn/jfjbmap/content/2017-02/13/content_169266.htm)>; Zhang Cunguo and Li Jianwen [张存国, 李建文], “Military-Civilian Dual-Use Airport Support No Longer Has Each Side Focus Solely on Its Own Tasks.” [军地机场保障不再各扫门前雪], *PLA Daily* [解放军报], October 27, 2016, 2, available at <[www.81.cn/jfjbmap/content/2016-10/27/content\\_160029.htm](http://www.81.cn/jfjbmap/content/2016-10/27/content_160029.htm)>.

<sup>72</sup> “Defense Ministry Holds News Conference on Joint Logistic Support System Reform,” *China Military Online*, September 14, 2016, available at <[http://eng.chinamil.com.cn/view/2016-09/14/content\\_7258622.htm](http://eng.chinamil.com.cn/view/2016-09/14/content_7258622.htm)>; “Army Adjustment and Establishment Completed in Five Theater Commands,” *China Military Online*, February 4, 2016, available at <[http://english.chinamil.com.cn/news-channels/china-military-news/2016-02/04/content\\_6890499.htm](http://english.chinamil.com.cn/news-channels/china-military-news/2016-02/04/content_6890499.htm)>.

<sup>73</sup> Gao Jie [高洁], “The Wuxi Joint Logistic Support Center: Strengthen the Service Mindset, Improve the Service Form” [联勤保障中心: 运行满月, 新风扑面无锡联勤保障中心强化服务意识改进保障方式], *PLA Daily* [解放军报], October 16,

2016; “People’s Liberation Army (Including Armed Police) Designation Code and Garrison Situation” [解放军(含武警)番号,代号及驻防情况], October 25, 2014; “Military and Civilians Work Together to Build a Harmonious Society” [军民同心共建和谐社会], People’s Liberation Army 101<sup>st</sup> Hospital [中国人民解放军第101医院], March 9, 2016, available at <[www.wx101.com/Item/976.aspx](http://www.wx101.com/Item/976.aspx)>; “China Life Guilin Branch Celebrates the 87<sup>th</sup> Anniversary of the Founding” [国寿桂林分公司举行庆祝建党八十七周年纪念活动], Guangxi Insurance Association Network [广西保险行业协会], August 28, 2008, available at <[www.gxbx.com.cn/bencandy.php?fid-122-id-10021-page-1.htm](http://www.gxbx.com.cn/bencandy.php?fid-122-id-10021-page-1.htm)>; “Zhengzhou Military and Police Forces Work Together to Green the Yellow River Beach” [郑州军警部队二日一起来绿化黄河滩], Henan Cultural Industry Network, April 5, 2010, available at <[www.henanci.com/Pages/2010/04/05/20100405044918.shtml](http://www.henanci.com/Pages/2010/04/05/20100405044918.shtml)>.

<sup>74</sup> Dang Chongmin [党崇民], ed., *Staff Officer Work in Joint Operations* [联合作战参谋工作] (Beijing: PLA Press [解放军出版社], August 2006).

<sup>75</sup> Lai Yuhong and Wang Xiaowei [赖瑜鸿, 王晓伟], “Army Establishes Rapid Commodity Distribution,” *China Military Online* [中国军网], May 3, 2017, available at <[www.81.cn/sydbt/2017-05/03/content\\_7585404.htm](http://www.81.cn/sydbt/2017-05/03/content_7585404.htm)>; Gao Aiguo [高爱国] et al., “From ‘Health’ to ‘Medical Service’: Far More Than Just Changing the Name of an Organization” [从卫生到卫勤: 远不止改个机构名称这么简单], *China Military Online* [中国军网综合], April 28, 2017, available at <[www.81.cn/jmy-wyl/2017-04/28/content\\_7581050.htm](http://www.81.cn/jmy-wyl/2017-04/28/content_7581050.htm)>; Wang Jun [王俊], “Xie Donghui Becomes Director of Wuhan Joint Logistics Support Base Political Work Department” [谢东辉已担任武汉联勤保障基地政治工作部主任], *The Paper* [澎湃], March 22, 2017, available at <[www.thepaper.cn/newsDetail\\_forward\\_1644897](http://www.thepaper.cn/newsDetail_forward_1644897)>; Guo Bin and Lin Youwei [郭彬, 林幼卫], “Wuxi Joint Logistics Support Center Forges a Contingent of Elite Maritime Soldiers” [无锡联勤保障中心锻造一支海上尖兵], *Zhongguo Guofang Bao* [中国国防报], March 21, 2017, available at <[www.81.cn/gfbmap/content/2017-03/21/content\\_172344.htm](http://www.81.cn/gfbmap/content/2017-03/21/content_172344.htm)>; Tang Zhichao and Sun Xingwei [汤智超, 孙兴维], “Military Representatives Occupy Apartment of Shanghai-Based Vehicle Battalion” [无锡联勤保障中心探索公寓住房区域保障模式军代表住上汽车营公寓房], *PLA Daily* [解放军报], March 20, 2017, available at <[www.81.cn/jfjbmap/content/1/2017-03/20/02/2017032002\\_pdf.pdf](http://www.81.cn/jfjbmap/content/1/2017-03/20/02/2017032002_pdf.pdf)>; Yang Yucheng and Zhou Peng [杨玉成, 周鹏], “Organizing the Strengthening of Military Supply Station Leaders in Fujian and Jiangxi” [组织闽赣两省军供站长加钢淬火], *Zhongguo Guofang Bao* [中国国防报], December 1, 2016, available at <[www.81.cn/gfbmap/content/2016-12/01/content\\_162993.htm](http://www.81.cn/gfbmap/content/2016-12/01/content_162993.htm)>; Lai Yuhong and Huang Yi [赖瑜鸿, 黄翊], “Guilin Joint

Logistics Support Center and Civil Airline Sign Cooperation Agreement on Air Ticketing Service” [桂林联勤保障中心与某航空公司签订合作协议助推惠军服务升级], *PLA Daily* [解放军报], March 7, 2017, available at <[www.81.cn/jfjbmap/content/2017-03/07/content\\_171096.htm](http://www.81.cn/jfjbmap/content/2017-03/07/content_171096.htm)>; Gao Jie, Sun Yan, and Liu Jian [高洁, 孙燕, 刘健], “PLA No. 85 Hospital of Wuxi Joint Logistics Support Center Provides Services for Island-Stationed Troops” [解放军无锡联勤保障中心第八五医院团队为海岛官兵服务], *China News Service*, February 8, 2017, available at <[www.chinanews.com/mil/2017/02-08/8143867.shtml](http://www.chinanews.com/mil/2017/02-08/8143867.shtml)>.

<sup>76</sup> Yu Zhiming [於志明], “Command of Joint Logistics Subdepartments” [联勤分部指挥], *China Military Logistics Encyclopedia* [中国军事后勤百科全书] (Beijing: Gold Shield Press [金盾出版社], 2002), vol. 1, 252–253; Fu Quanyou and Liang Guanglie [傅全有, 梁光烈], “Joint Logistics Sub-Department” [联勤分部], in *Chinese Encyclopedia: Military Affairs* [中国军事百科全书] (Beijing: Encyclopedia of China Publishing House [中国大百科全书出版社], 2005), 509.

<sup>77</sup> Lonnie Henley, “PLA Logistics and Doctrine Reforms, 1999–2009,” in *People’s Liberation Army after Next*, ed. Susan Puska (Carlisle Barracks, PA: Strategic Studies Institute, 2000); Dennis J. Blasko, *The Chinese Army Today: Tradition and Transformation for the 21<sup>st</sup> Century*, 2<sup>nd</sup> ed. (London: Routledge, 2012), 52.

<sup>78</sup> “Details of Military Reforms Come to Light: Personnel of CMC’s Two New Departments Has Been Decided” [军委细节曝光: 军委两新部门人事已定], *Chaoji Pingguo Wang* [超级苹果网], December 28, 2015; He Yongmin [何勇民], “How Is the Qinghai-Tibet Highway Military Supplies Depot, Which Has Undergone Reforms Five Times, Facing Reorganization” [历经5次调整改革的青藏兵站部如何面对改革], *PLA Daily* [解放军报], December 21, 2015, available at <[web.archive.org/web/20170220014703/http://www.81.cn/jwgz/2015-12/21/content\\_6824329.htm](http://web.archive.org/web/20170220014703/http://www.81.cn/jwgz/2015-12/21/content_6824329.htm)>; Ding Li and Li Wei [丁丽, 李伟], “Military Report” [军事报道], CCTV-7, June 21, 2016, available at <[www.youtube.com/watch?v=r2K1r-80mUw](http://www.youtube.com/watch?v=r2K1r-80mUw)>.

<sup>79</sup> Zhang Tao, ed., “Defense Ministry Holds News Conference on Joint Logistic Support System Reform,” *China Military Online*, September 14, 2016, available at <[http://english.chinamil.com.cn/view/2016-09/14/content\\_7258622.htm](http://english.chinamil.com.cn/view/2016-09/14/content_7258622.htm)>.

<sup>80</sup> Zhao Jiaqing [赵佳庆], “Shenyang Joint Logistics Center Organizes Severe Cold Weather Training” [沈阳联勤保障中心组织冬季严寒条件下的训练], *China Network* [中国网], January 26, 2017, available at <[www.china.com.cn/military/2017-01/26/content\\_40184471.htm](http://www.china.com.cn/military/2017-01/26/content_40184471.htm)>.

<sup>81</sup> Jiang, “Military-Civilian Integration.”

<sup>82</sup> Liu Zhigang [刘志刚], “We Should Focus on Three Types of Changes in Logistics Reform” [后勤改革要着眼三种转变], *PLA Daily* [解放军报], September 9, 2014.

<sup>83</sup> “PLA Djibouti Base Must Be Viewed Objectively,” *Global Times* (Beijing), July 13, 2017, available at <[www.globaltimes.cn/content/1056127.shtml](http://www.globaltimes.cn/content/1056127.shtml)>; Huang Jingjing and Guo Yuandan, “China’s Logistic Hub in Djibouti to Stabilize Region, Protect Interests,” *Global Times* (Beijing), March 15, 2016, available at <[www.globaltimes.cn/content/973900.shtml](http://www.globaltimes.cn/content/973900.shtml)>; Zhou Bo, “Station Looks Beyond Anti-Piracy Mission,” *China Daily Online*, March 17, 2016, available at <[http://usa.chinadaily.com.cn/epaper/2016-03/18/content\\_23948894.htm](http://usa.chinadaily.com.cn/epaper/2016-03/18/content_23948894.htm)>.