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PLA ROCKET FORCE ORGANIZATION

Executive Summary

MA XIU

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By Blue Path Labs

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CASI would particularly like to acknowledge the longtime dedication of Mark Stokes in his effort to understand and describe the PLA 2nd Artillery and now the PLA Rocket Force. Without his fundamental work, this research would not have been possible.

China Aerospace Studies Institute

CASI's mission is to advance understanding of the capabilities, development, operating concepts, strategy, doctrine, personnel, organization, and limitations of China's aerospace forces, which include: the PLA Air Force (PLAAF); PLA Naval Aviation (PLAN Aviation); PLA Rocket Force (PLARF); PLA Army (PLAA) Aviation; the PLA Strategic Support Force (PLASSF), primarily space and cyber; and the civilian and commercial infrastructure that supports the above.

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Preface

While recent scholarship has gone a long way toward demystifying China's missile force, it remains in many ways a poorly understood phenomenon, with an unusually high degree of censorship even by the already strict standards of the PLA. The following is a brief executive summary of a much longer PLARF Order of Battle report. The purpose of the full report is to improve the level of detail available to researchers by providing the most thorough encyclopedia of PLA Rocket Force units and leadership available in open sources. We utilized a wide range of Chinese language sources to compile dossiers on as many PLARF units and institutions as possible, including for support units which are critical to the PLARF's mission but often go overlooked. We worked to provide information, where available, on each unit's history, mission, location, leadership, equipment, and force structure. We hope that the information contained in this report will fill a critical gap in scholarship, serve as a valuable resource to the PLA research community, and help facilitate further research and greater understanding of the PLARF.

The PLA Rocket Force (PLARF), formerly known as the PLA 2nd Artillery Force (PLASAF) until 2016, is responsible for the PLA's land-based nuclear and conventional missiles. The Second Artillery Force was officially established in 1966 and given command of China's small inventory of land-based, regional nuclear missiles. These first-generation missiles were largely categorized as unsophisticated and of limited range and capability. The story of the PLARF/PLASAF, however, has been one of steady and progressive growth in both size and capability, beginning with the development of increasingly longer-range systems through the 1960s and 1970s and, with the introduction of the DF-5 in the early 1980s, the first intercontinental ballistic missile capable of striking the United States. The 1980s were a seminal decade for the PLASAF in two other ways: first, through its development of the DF-21, the PLA's first road-mobile ballistic missile system, and second, through its decision to field conventional as well as nuclear missiles, leading to the introduction of the DF-11 and DF-15 short range ballistic missiles in the early 1990s.

The steady diversification of platforms and improvement in capabilities assigned to the PLASAF was matched by its equally steady growth in size. Four new brigades were stood up between 1980 and 2000, three of which were equipped with these latest weapons systems. This expansion accelerated in the 2000s: between 2000 and 2010, the PLASAF stood up as many as eleven new brigades equipped with its growing array of weapons, including its first ground-launched cruise missile, the CJ-10, and its first road-mobile ICBM, the DF-31. The pace of growth continued to intensify between 2010 and 2020, as the PLASAF (and, following its name change in 2016, the PLA Rocket Force) added 13 new brigades, as well as more important weapons systems such as the DF-21D anti-ship ballistic missile, the longer range and more capable DF-41 road-mobile ICBM, the dual nuclear-conventional DF-26 IRBM, and the DF-17 hypersonic glide vehicle. Incredibly, between 2017 and late 2019 the PLARF added at least ten new missile brigades. This unprecedented expansion from 29 to 39 brigades represented a more than 33% increase in size in only three years.[1] Thus, the PLARF has evolved from a small, unsophisticated force of short-ranged and vulnerable ballistic missiles to an increasingly large, modern, and formidable force with a wide array of both nuclear and conventional weapons platforms.

PLARF Force Structure

The PLARF is directly subordinate to the CCP's Central Military Commission, the PRC's supreme national defense authority. Command authority of the PLARF's nuclear launch forces is somewhat Byzantine: administratively, nuclear forces are subordinate to their individual Bases, but operationally are placed under direct operational control of the CMC. Operational control of conventional missile forces, in particular the extent to which they are subordinate to the local joint theater command versus their individual PLARF Bases, is less well understood. Initial evidence suggests that integration of conventional missile forces into the local theater command is ongoing, and that the local theater command may exercise a degree of operational control over these forces, facilitating wartime joint operations between missile forces and their air, land, and sea counterparts.[2]

The PLARF controls nine Bases,[3] all of which are either Corps or Corps Deputy Leader grade. Six of these Bases, Bases 61-66, are responsible for missile operations, while the other three, Bases 67-69, conduct support missions (Base 67 is responsible for overseeing the central nuclear stockpile, Base 68 is responsible for engineering and physical infrastructure, and Base 69, the newest Base, is poorly understood but appears to be responsible for both advanced personnel training and missile tests).

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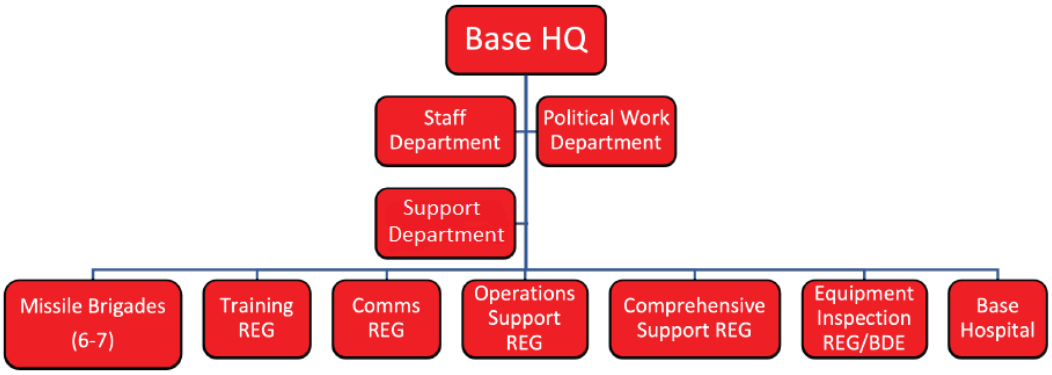
Each of the six operations Bases cover discrete geographical areas. As seen in the map below, the missile brigades of Base 61 cover eastern and some of southeastern China, Base 62 covers the rest of southeastern China, Base 63 covers inland southern China, Base 64 covers northwest and north-central China, Base 65 covers eastern and northeastern China, and Base 66 covers central China. Each Base also features a unique makeup of nuclear and conventional forces depending on individual mission and strategic need: Base 61, for instance, is made up of mostly short-range conventional missile brigades primarily aimed at Taiwan, while more inland Bases, such as Bases 64 and 66, are made up primarily of longer-range nuclear forces.

PLARF Operations Base Structure

The six PLARF operations Bases largely conform to a standardized structure, with six to seven subordinate missile brigades and five to seven support regiments, depending on the Base. The standard Base structure is as follows:



Missile Brigades [导弹旅]: Responsible for launching of missiles.

Training Regiment [训练团]: Responsible for basic training of new recruits assigned to this Base, as well as certain advanced specialist training as needed.

Communications Regiment [通信团]: Responsible for ensuring communications between Base HQ and subordinate elements.

Operations Support Regiment [作战保障团]: This regiment type was established around 2012 by taking several disparate support functions and consolidating them under a single regiment. Base support functions handled by this unit include security, engineering, meteorology, survey and mapping, and NBC defense.

Comprehensive Support Regiment [综合保障团]: This regiment type was established in 2017 by combining the Base Repair Factory [修配厂] with the Technical Service Regiment [技术勤务团] and taking on the responsibilities of both. Thus, this regiment is responsible for repair and maintenance of Base vehicles and equipment, as well as storage of missiles, fuel, munitions, and other supplies, and transport of these assets via road and rail to Base units. It may also be in charge of other miscellaneous support missions, such as vehicle driving, food preparation, cultural/media work, and training of certain support personnel. Integrating vehicle, transport, repair, and logistical support missions into a single unit is designed to improve logistical efficiency and coordination. While all Bases now have Comprehensive Support Regiments, Base 61 still maintains a Technical Service Brigade (upgraded from a regiment). Base 63 also maintains a "Service Regiment," which may now only be responsible for management, transport, and loading of missile propellants for the Base's liquid-fueled rockets.

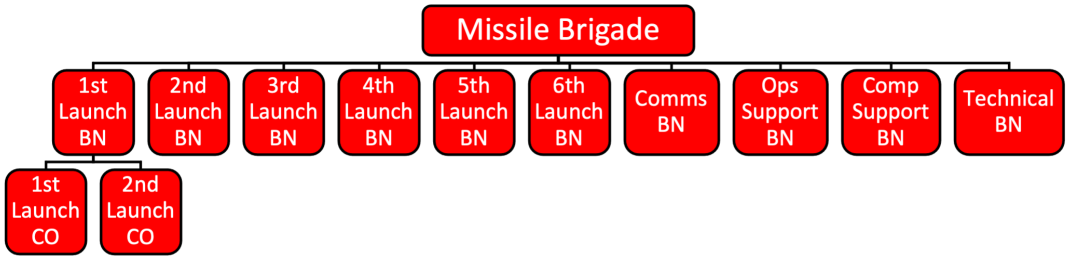
Equipment Inspection Regiment [装检团]: This regiment is responsible for storage, management, and distribution of nuclear warheads assigned to each Base. While most of the PLARF's nuclear stockpile is stored in a central location at Taibai, it is believed that a limited number of warheads are forward-deployed to each Base and managed by these regiments. These regiments transport warheads to missile brigades via their own road and rail transport capabilities. Base 64 is the only Base which has an Equipment Inspection Brigade rather than a regiment.[4]

Base Hospital [医院]: Each Base has at least one associated hospital. Hospital staff frequently deploy for training with Base units. In wartime these hospitals would deploy field medical teams to provide comprehensive medical care to Base units at the front line. Base hospitals are typically Division Leader or Division Deputy Leader grade organizations.

Of the six operations Bases, four conform to this exact structure, while two, Bases 61 and 63, differ slightly, as explained above. Base 61 also hosts an additional regiment responsible for UAV operations.

Missile Brigade Structure

As stated above, each operations Base controls six to seven missile brigades, which also largely conform to a standardized structure of six launch battalions (each typically made up of two launch companies) and four to six support battalions. A standard missile brigade is structured as follows:

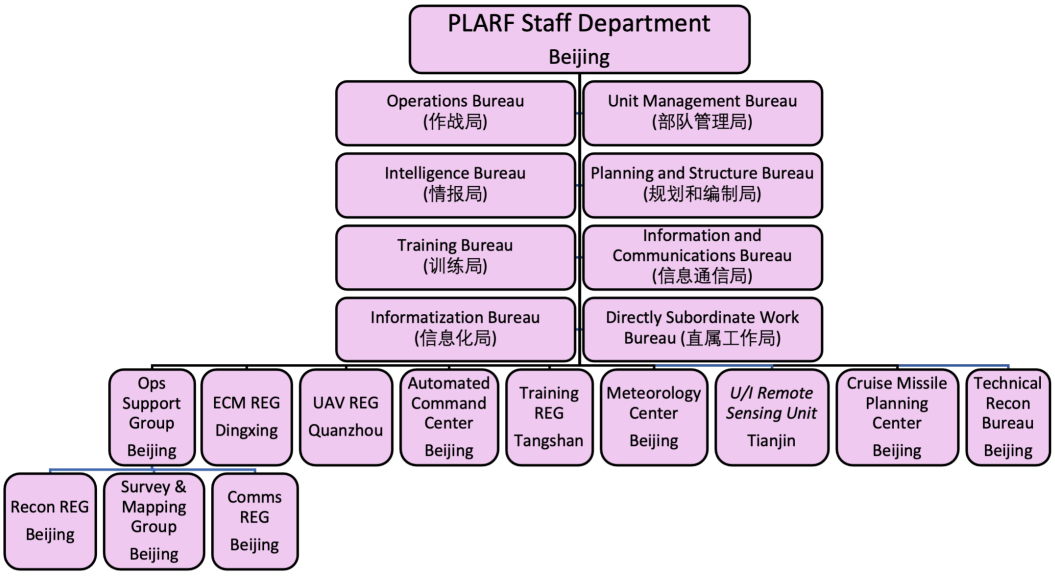


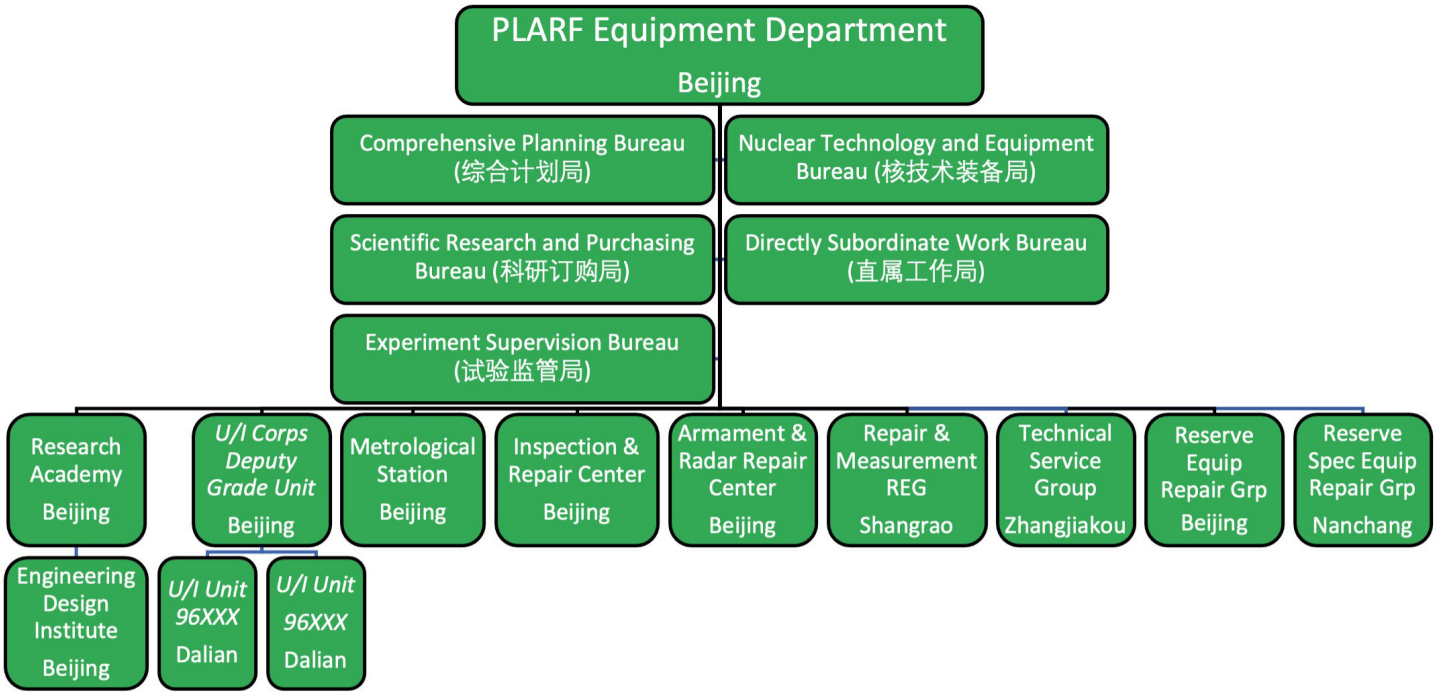
In some ways, missile brigades are like miniaturized Bases, with their own communications, operations support, and comprehensive support battalions. The number of launchers assigned to each brigade varies widely depending on missile type. Official and comprehensive estimates of missiles and launchers per brigade are lacking, but knowledgeable observers have given estimates ranging from 6-12 launchers per brigade for certain ICBMs, 12-24 for MRBMs, 18-36 for IRBMs, and up to 36-48 launchers per brigade for SRBMs and GLCMs.[5]

Each brigade also appears to have at least one, and in at least some cases two, Technical Battalions. Technical Battalions are responsible for an array of launch support missions, including missile loading and hoisting, propellent injection, and pre-launch testing and diagnostics. They may also play a role in missile assembly and warhead mating. It is unclear whether a 2nd Technical Battalion is an exception limited to a handful of brigades, or the norm. Besides this, additional battalions are quite rare, but do exist. For example, the 633 Brigade appears to have a Telemetry Battalion [遥测营], and the 635 Brigade has an ECM Battalion [电抗营].

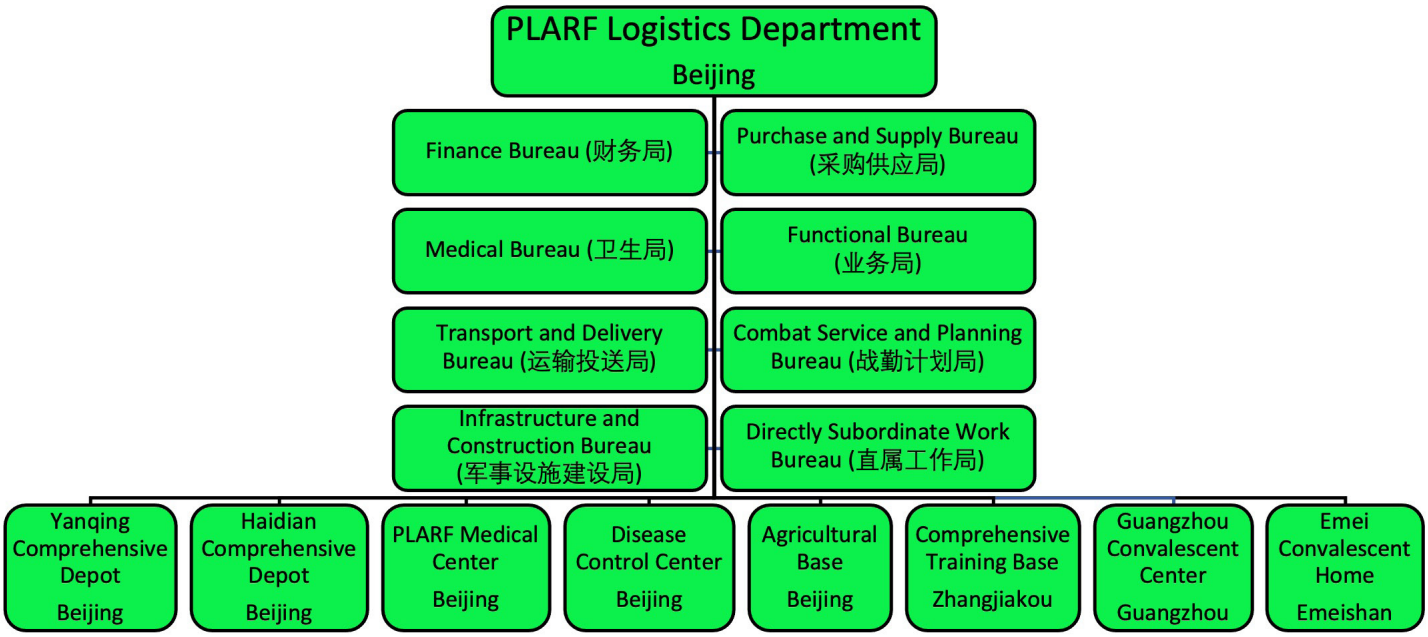
PLA Rocket Force Command

The PLARF's command structure, like those of the other PLA services, is composed of four administrative departments: the Staff Department [参谋部], Political Work Department [政治工作部], Equipment Department [装备部], and Logistics Department [后勤部]. Each of these departments oversee several administrative Bureaus [局], and each also commands a number of direct-subordinate units which report directly to the departments.



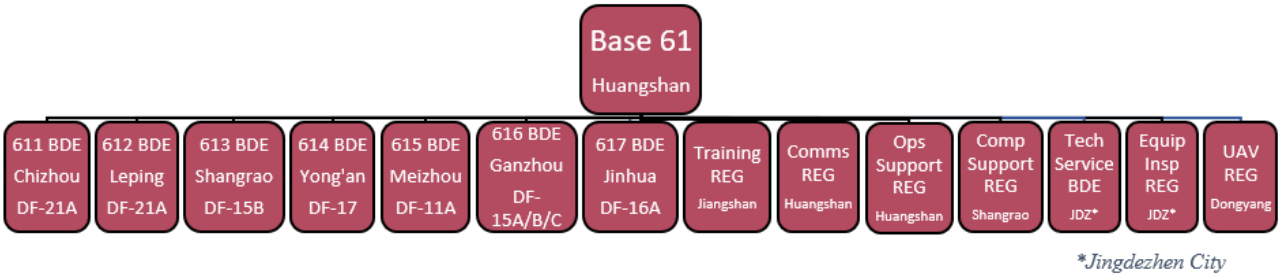


PLARF ORGANIZATION

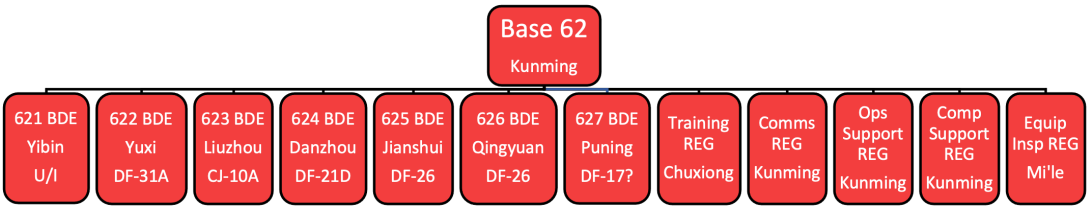


PLARF ORGANIZATION

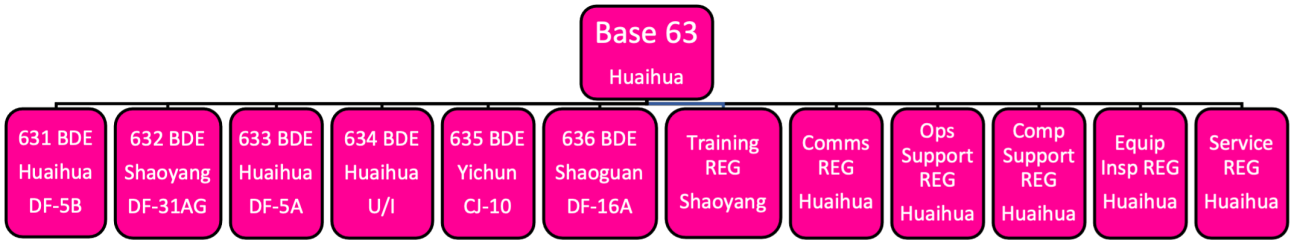
PLA Rocket Force Bases



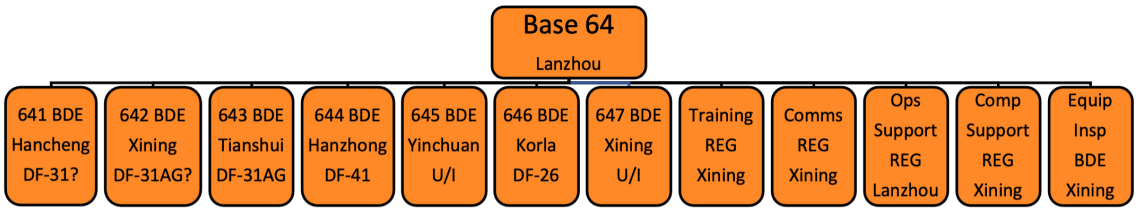
Base 61, first established in 1965 and currently headquartered in the eastern city of Huangshan, is a Corps Leader grade operations Base covering eastern and part of southeastern China. It likely commands two nuclear MRBM brigades, four conventional SRBM brigades, and one hypersonic MRBM brigade (believed at this time to be conventional). The Base's operating area adjacent to the Taiwan Strait and large number of SRBM brigades indicate that it would be the primary Base tasked with ballistic missile operations in a conflict with Taiwan. This Base's makeup of mostly SRBM brigades has led to a unique support structure. It has not only retained its Technical Regiment, but expanded it to brigade strength, likely due to the large number of SRBMs this Base needs to test and transport. Base 61 also hosts an additional regiment responsible for UAV operations.



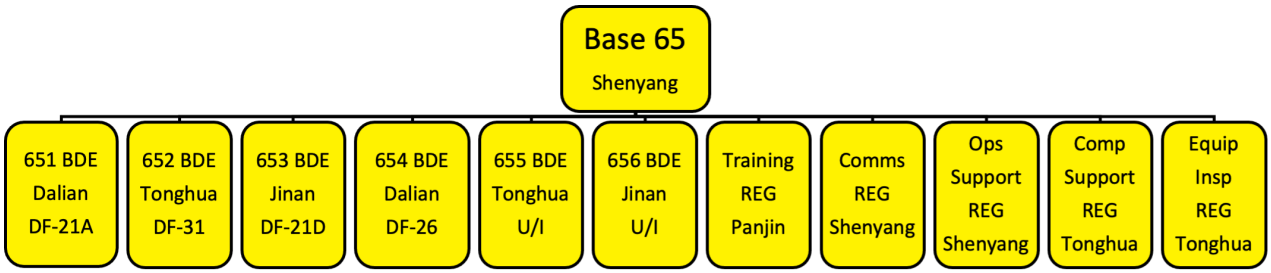
Base 62, established in 1966 and headquartered in the southern city of Kunming, is a Corps Deputy Leader grade operations Base covering much of southern and lower southeastern China and bordering both Southeast Asia and the South China Sea. It commands at least one road-mobile ICBM brigade, two dual nuclear-conventional IRBM brigades, one LACM brigade, one ASBM brigade, and possibly the PLARF's first hypersonic MRBM brigade, as well as one additional brigade with an unknown missile type.



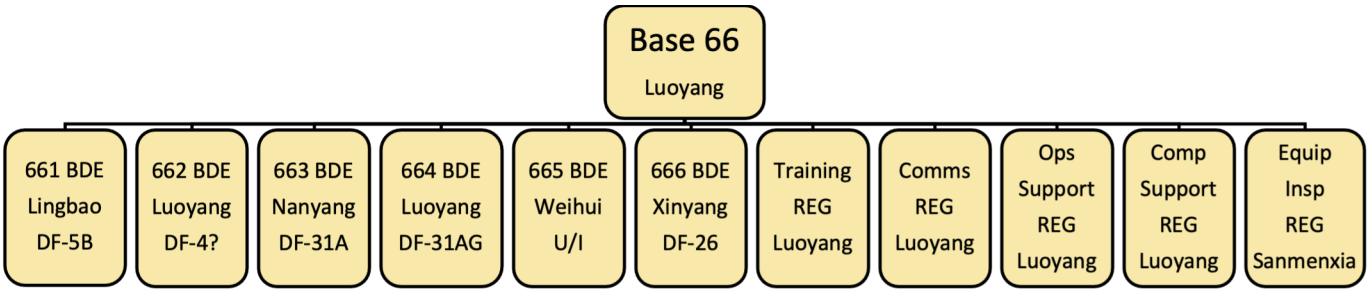
Base 63, headquartered in the inland southern city of Huaihua, is a Corps Leader grade operations Base covering southeast China. It commands at least three ICBM brigades (two silo-based and one road-mobile), one conventional SRBM brigade, and one LACM brigade, as well as one brigade with an unknown missile type.



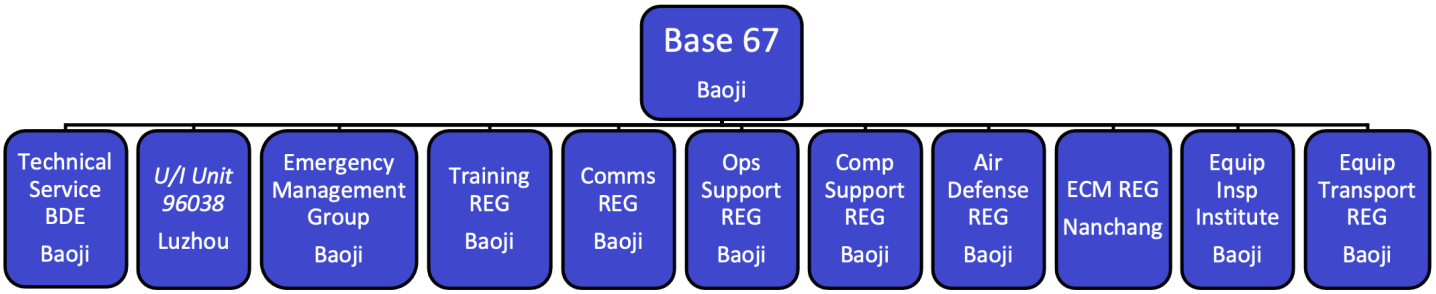
Base 64, headquartered in the western city of Lanzhou, is a Corps Leader grade operations Base covering northwest and northern central China. It commands at least four road-mobile nuclear ICBM brigades, one dual nuclear-conventional IRBM brigade, and two more brigades of unknown type. Since 2017 it has nearly doubled in size, expanding from four to seven brigades.



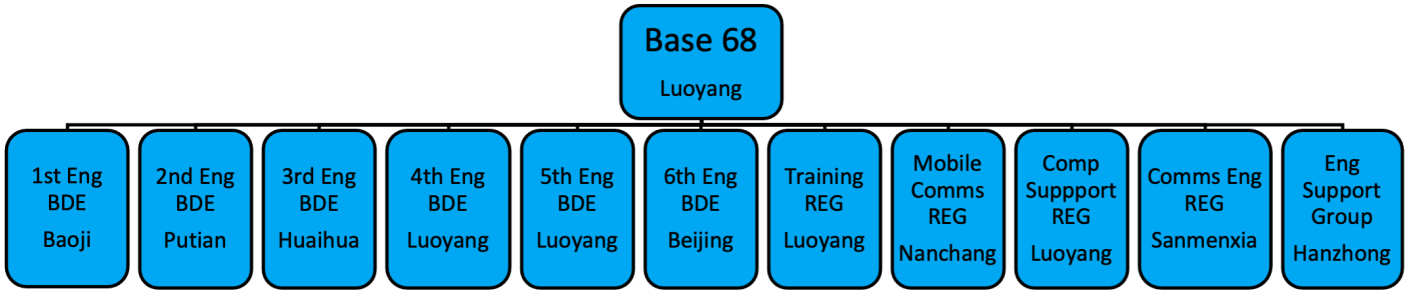
Base 65, first established in Tonghua in 1964 and currently headquartered in the northeastern city of Shenyang, is a Corps Deputy Leader grade operations Base covering northeast China and the Shandong Peninsula. It commands at least two road-mobile nuclear brigades (one ICBM and one MRBM), one dual nuclear-conventional IRBM brigade, and one ASBM brigade, as well as two other brigades of unknown missile type. Since the beginning of 2017 it has doubled in size, expanding from three to six missile brigades.



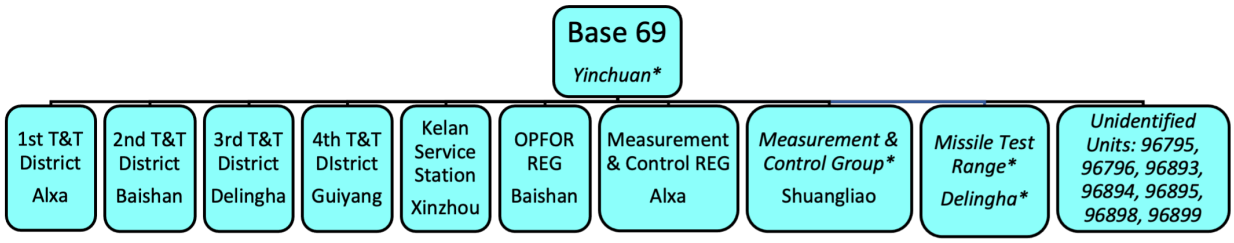
Base 66, established in 1966 and headquartered in Luoyang, is a Corps Leader grade operations Base located in inland central China. It commands at least four nuclear ICBM brigades (two of which are road-mobile), one dual nuclear-conventional IRBM brigade, and one additional brigade of unknown type.



Base 67, first established under the Central Military Commission in 1958 Qinghai's Haiyan County and transferred to the PLASAF in 1980, is a Corps Deputy Leader grade support Base responsible for oversight of the PRC's nuclear weapons storage complex at Taibai, as well as distribution of nuclear warheads to operations Bases. Units associated with this Base are frequently referred to as "Guardians of the National Treasure" [国宝卫士], an oblique reference to the nuclear stockpile.



Base 68, the PLARF's Corps Deputy Leader grade engineering Base, is responsible for construction of physical infrastructure, including tunnels, and wartime engineering support. The PLARF Engineering Base was first established in 2012 from the former Engineering Technical Zongdui [工程技术总队]. As part of the 2017 reorganization, this Base was combined with the 308th Engineering Command [308工程指挥部] and renamed Base 68. It likely consists of 6 Engineering Brigades (at least two of which specialize in installation of electricity, ventilation, blast and radiation shielding, and other key infrastructure), a Communications Engineering Regiment responsible for constructing the PLARF's communications infrastructure, a Communications Repair and Maintenance Regiment, and at least four other support regiments.



Base 69 is a new Test and Training Base [试验训练基地] that was established in 2017 as part of the PLA's latest round of structural reforms. Although much about this Base remains unknown, it appears to be a Corps Leader grade Base comprised of four new Test and Training Districts (created from three former PLARF training Bases), as well as several other units supporting training and test launch missions. Originally garrisoned in Jilin, it likely moved to Yinchuan in 2019.

Rocket Force Command College

The Rocket Force Command College [火箭军指挥学院], located in Wuhan, Hubei, was established in 1977 as the 2nd Artillery School, changing its name to 2nd Artillery College in 1979. In 1986 it became the 2nd Artillery Command College. In its 40+ years it has graduated over 30,000 cadets, over 120 of whom have gone on to become generals. It is a Corps or Corps Deputy Leader[6] grade organization.

Rocket Force University of Engineering

The PLARF University of Engineering [火箭军工程大学], located in Xi'an, Shaanxi, was established in 1951 as the Northwest Military Region Artillery School, and the same year was renamed the PLA 1st Artillery School. In 2011, it became the 2nd Artillery Engineering University. Since 1959, it has produced over 40,000 graduates, over 130 of whom went on to become generals. The majority of the PLARF's brigade, battalion, and company leadership graduated from this university. It is a Corps Deputy Leader grade organization.

Rocket Force NCO School

The Rocket Force NCO School [火箭军士官学校] was established in September 1970 as the Yunnan Shipin 2nd Artillery 814th Regiment [云南石屏的二炮第814团]. It moved to its current location in Qingzhou, Shandong in January 1978. In 2017 it was renamed the Rocket Force NCO School. The NCO School may share control of the PLARF Comprehensive Training Base, which is responsible for both logistics and NCO training, with the Logistics Department. It also oversees the 4th Student Group [学兵四大队] in Tangshan, Hebei, which is responsible for basic training of direct-recruit NCOs. The NCO School is a Division Leader Grade organization.

Endnotes

1 For further information, see the author's piece in Popular Science: Ma Xiu, PW Singer, "China's missile force is growing at an unprecedented rate," Popular Science, 25 February 2020. https://www.popsci.com/story/blog-eastern-arsenal/china-missile-force-growing/

2 For further information, see Roderick Lee, "Integrating the PLA Rocket Force into Conventional Theater Operations," Jamestown Foundation, 14 August 2020. https://jamestown.org/program/integrating-the-pla-rocket-force-into-conventional-theater-operations/

3 A "Base," when capitalized, refers to a discrete unit within the PLA organizational structure, the same as a regiment, brigade, or division. Each Base may in turn oversee several "bases," that is, a physical location housing military forces.

4 For further information, see Mark Stokes, "China's Nuclear Warhead Storage and Handling System," Project 2049 Institute, 12 March 2010.

5 For further information, see Decker Eveleth, "Mapping the People's Liberation Army Rocket Force," 29 March 2020. https://www.aboyandhis.blog/post/mapping-the-people-s-liberation-army-rocket-force. IISS has given estimates of 12 launchers per MRBM brigade, 18 per IRBM brigade, and perhaps 27 for cruise missile brigades. See Henry Boyd, "2019 Pentagon report: China's Rocket Force trajectory," IISS, 15 May 2019, https://www.iiss.org/blogs/military-balance/2019/05/pla-rocket-force-trajectory.

6 Available sources conflict as to whether this is a Corps Leader of Corps Deputy Leader grade organization.