



## M89 or the Communication Network of the Second Artillery Corps/Force

Loggings for what we now know as M89 first appeared in early 2000 from monitors in Russia and Japan. In November 2003, the M89 designator was allocated by E2K. My first logging of M89 was in June, 2007 through the Hong Kong GlobalTuners and I was hooked.

My first monitoring priority was to obtain as much information as I could about M89. In a previous article and update on M89, I mentioned how I came across the website of the International Telecommunications Union (ITU) and a set of files related to monitoring that the ITU undertakes on the HF bands. Due to the large number of loggings of M89 stations by the ITU's monitoring station located in Japan, it has been confirmed by Direction Finding (DF) that all of the M89 stations being heard are located in China. ITU DF has provided us with a very good approximation of where the M89 stations are located as follows:

Callsign	Bearing (Fm Tokyo)	Fix (Average)	Nr of Bearings	Nr of Fixes
3A7D	300	43 26'N 90 14'E	14	12
Q7NW	290	40 10'N 116 10'E	12	12
CZT2	280	36 18'N 104 25'E	3	1
NYZ	254	24 18'N 110 20'E	4	1
QV5B	250	29 41'N 119 50'E	25	19
GNXG	280	35 12'N 108 17'E	6	5
DRV8	300	41 39'N 123 32'E	6	6

As a result of the information obtained above, I created a Google Earth map depicting the location of M89 stations as fixed by the ITU Monitoring station in Tokyo. Since then, I've updated this map to reflect only the current M89 stations being monitored and have combined all of the fixes for each station and averaged their location.

While doing initial research on the Internet, I came across a Chinese forum related to amateur radio, which contained some references to M89. According to one of the amateurs on this forum, these stations belong to the Chinese Army. He had once worked on their communication staff and had been responsible for determining day and night time frequencies according to seasons. He also mentioned that callsigns were changed regularly.

Another forum member referred to these stations as “Force-Frequency-Alarm-Units” and states that their purpose is to provide notification in the event of a nuclear war or raid. Apparently, this communication system was established in 1970 - 42 years ago.

With the above information in mind, I decided to do further research on the Internet to see what I could find regarding Chinese military organizations/units involved in a nuclear and early warning role. Over time, I was able to find some very interesting information which has led me to believe that M89 is probably the communication network of the Second Artillery Corps (SAC). Before we get into my findings, let’s have a quick look at the SAC, specifically how it’s organized and more importantly, the locations of major units.

### **Second Artillery Corps (SAC)**

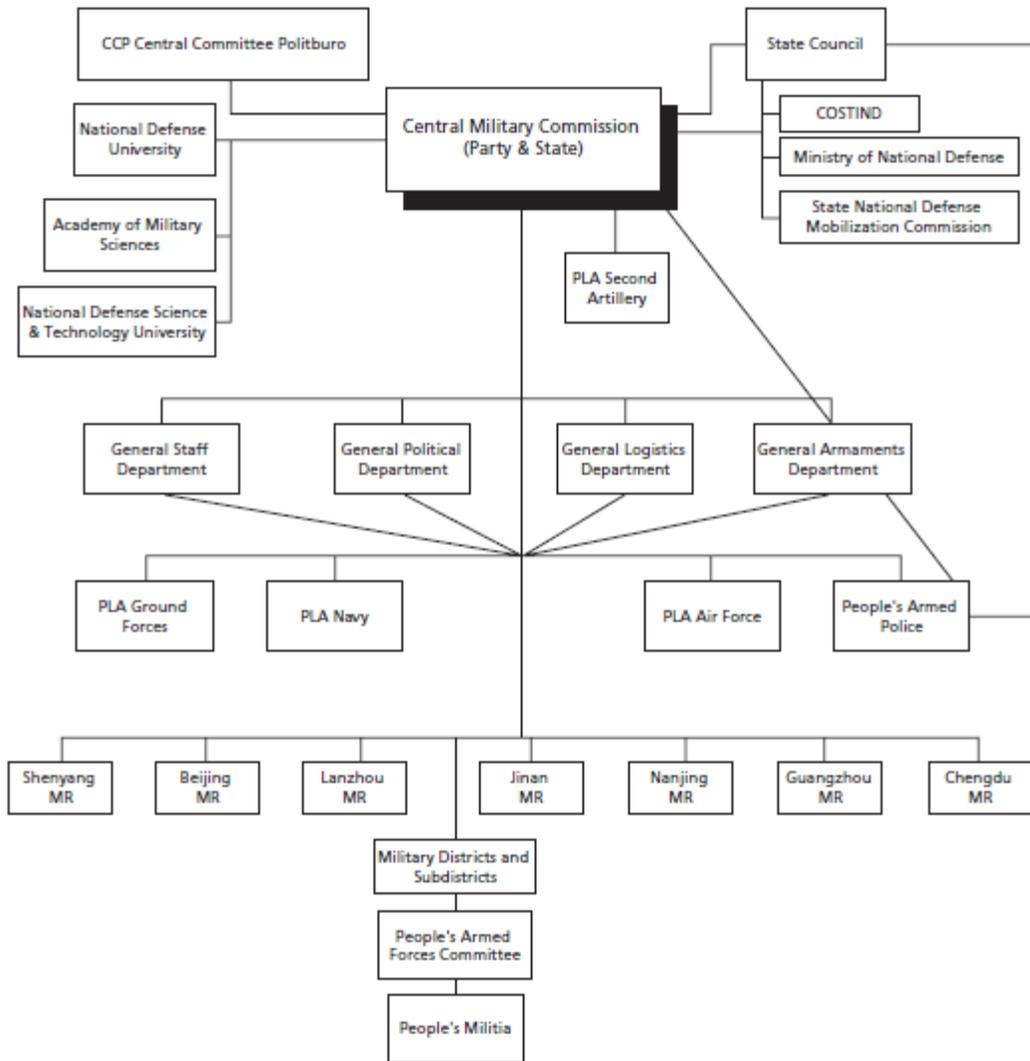
China’s strategic nuclear force, referred to as the Second Artillery Corps, was established in Beijing on 1 July 1966. The Second Artillery Corps is under the operational control of the general staff, but is directly controlled by the Central Military Commission (CMC), and has been an independent arm of the Chinese armed forces since 1974. Figure 1 is a diagram of the command structure of the People’s Liberation Army (PLA). As can be seen, Second Artillery is located at the highest level of the PLA Command Structure.

The Second Artillery Corps is believed to be organized into a headquarters in Qinghe near Beijing. It consists of: an early warning division, a **communication regiment**, a security regiment, a technical support regiment, and six ballistic missile Divisions.



Second Artillery Corps Headquarters building at Qinghe China

*The Command Structure of the People's Liberation Army*

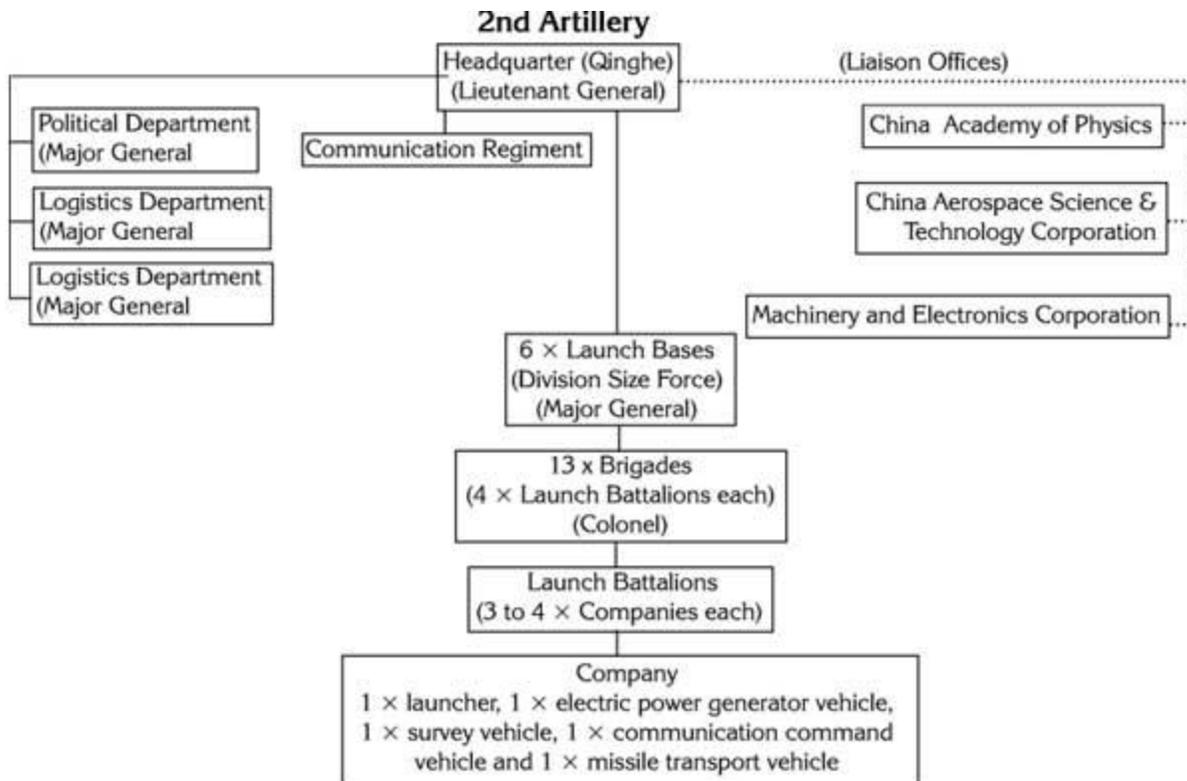


Source: "The Command Structure of the People's Liberation Army," figure in David Shambaugh, *Modernizing China's Military: Progress, Problems, and Prospects* (Berkeley: University of California Press, 2002), p. 111.

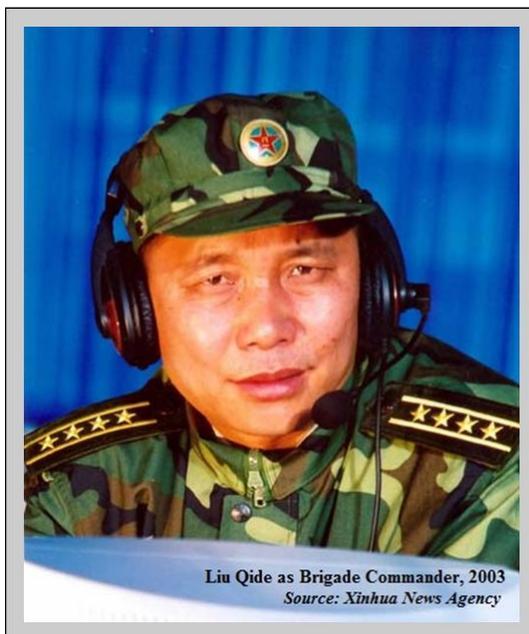
Figure 1 – PLA Command Structure

**The signal unit of the Second Artillery Corps operates communications systems to provide communications support capabilities for launch operations. The headquarters complex maintains contact with subordinate units through its own communications regiment. The 2nd Artillery Corps has its own communication regiment down to the smallest unit.**

All SAC units are subject to strict command and control from the CMC. Orders are passed down to operational units via a four-level chain of command: CMC, missile bases/Divisions, missile brigades, and launch battalions. Second Artillery command orders are centralized, **encoded** and protected, and require human authentication. The diagram on the next page depicts the command structure of the 2<sup>nd</sup> Artillery. Note the 6 Launch Bases/Divisions as well as the **Communication Regiment**.



SAC comprises approximately 100,000 personnel and six ballistic missile Bases/Divisions which are independently deployed in different military regions throughout the country as depicted in figure 2 below. The six operational missile bases/divisions are numbered from 51st to 56<sup>th</sup>. The 22nd Base, located in Baoji, Shaanxi Province is officially known as the “Training and Experimental Base”. Western intelligence suggests that this base may also serve as a warhead storage facility.



Liu Qide as Brigade Commander, 2003  
Source: Xinhua News Agency

MGen Liu Qide is the commander of Base 55. Liu Qide has roots in the Second Artillery’s ICBM community. He was assigned to 55 Base’s 803 Brigade in Jingzhou as a junior officer, and remained in the unit for more than a decade. Liu served as 803 Brigade Commander from 1997, and was subsequently assigned as director of the 55 Base Equipment Department in 2004. He transferred to the Second Artillery’s Communications Department in July 2007, where he managed the force’s nuclear command, control, and communication system. He returned to Huaihua in early or mid-2010 to serve as 55 Base chief of staff until his promotion to commander.

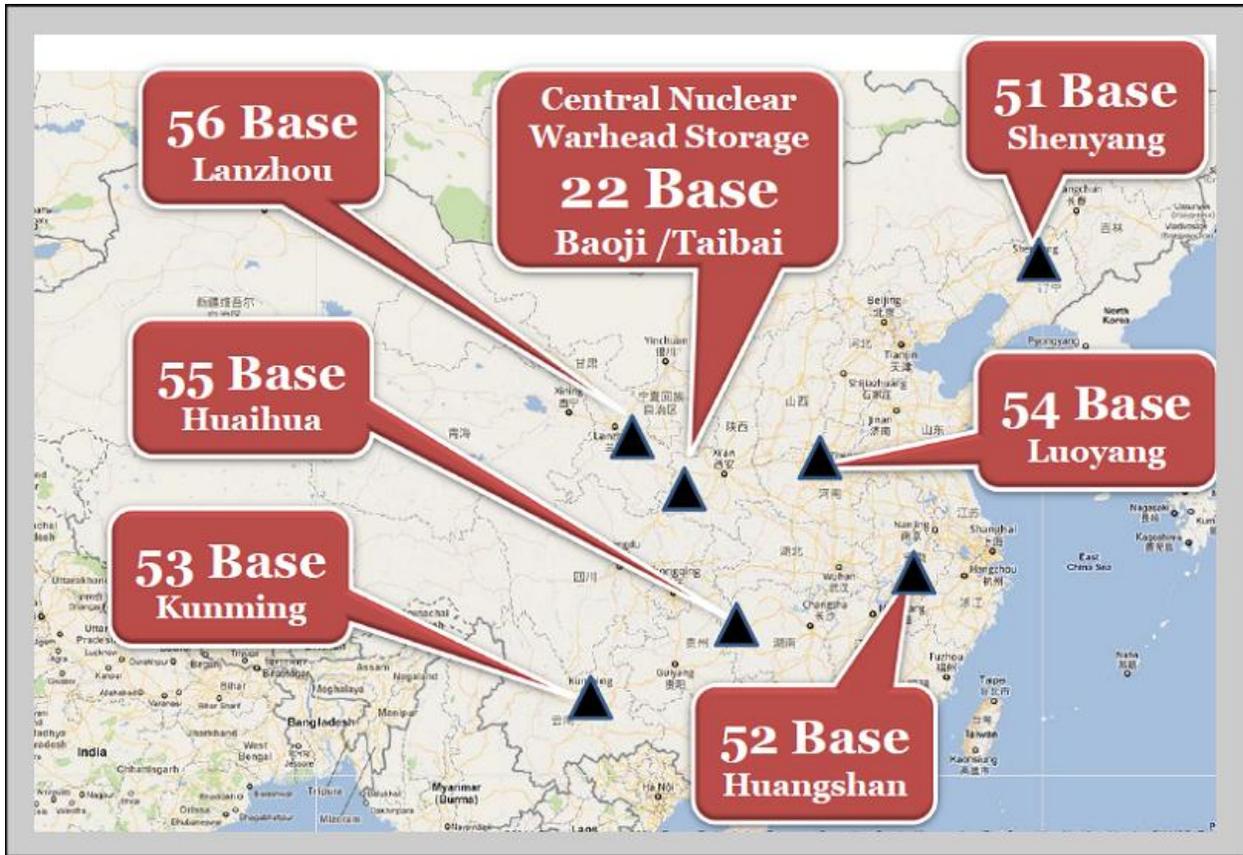


Figure 2 – SAC Bases/Divisions

Figure 3 below, depicts the typical structure at each base/division, in this case Base 55. Note the **Communication Regiment** element (bottom right).

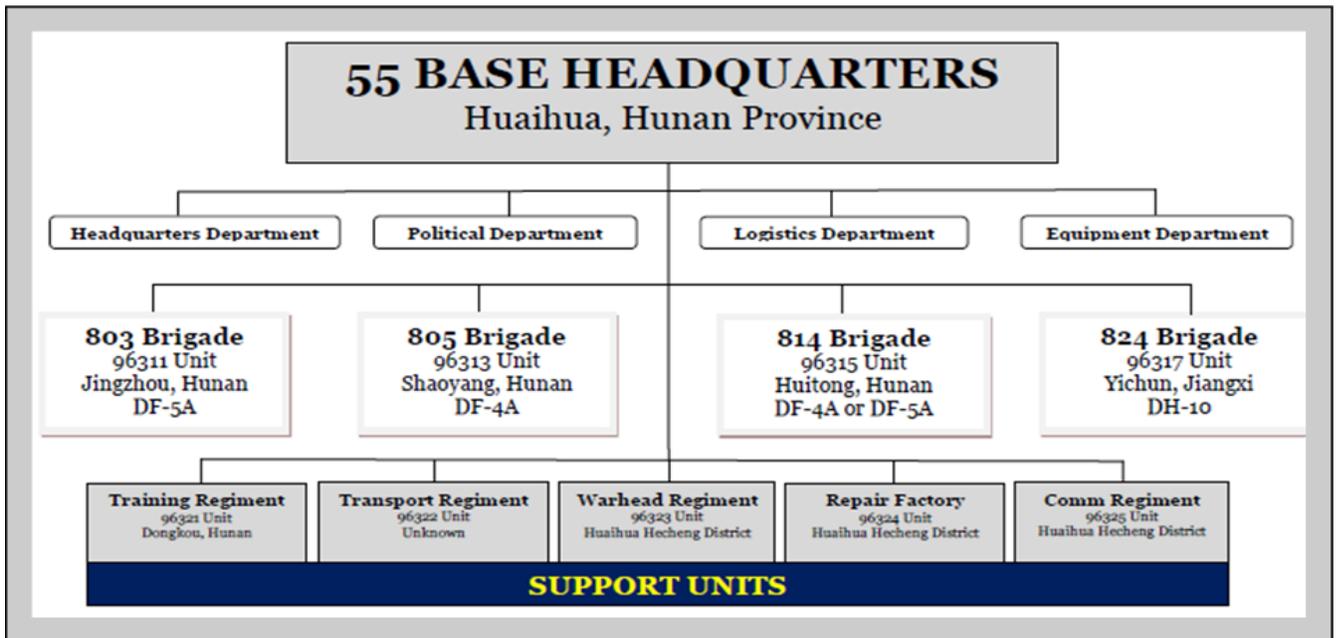


Figure 3 – Typical organization of a SAC Base

A missile base/division is the largest operational unit in the SAC, each assigned with a specific target area. For example, Base 51 is responsible for covering targets in Northeast Asia; Base 52 is responsible for covering Taiwan; Base 53 is responsible for covering Southeast Asia; Base 56 is responsible for covering targets in South and Central Asia and Russia; Base 54 and Base 55 are responsible for covering targets in North America and Western Europe.

Each missile base/division is composed of a headquarters, a number of missile brigades, as well as support elements, which normally include a **signal regiment**, an electronic warfare regiment, an engineer battalion, a reconnaissance group, a survey/mapping group, a computer centre, a meteorological centre, maintenance workshops, a guard company, and missile and warhead storage.

The missile brigade is the principal operational unit that operates, protects, maintains, and supports the missile troops. A missile brigade normally consists of a brigade headquarters, 4~6 launch battalions, a **signal battalion**, a telemetry battalion, a launch site battalion, a technical battalion, a maintenance battalion, and a number of logistics and support units. Each brigade likely includes a mobile command post, a central depot, an assigned set of pre-surveyed launch sites, as well as a set of reserve launch sites. In peacetime, missile brigades reports to their base headquarters. In time of war, conventional missile brigades are likely subordinate to the war front command.

The launch battalion is the basic launch unit, responsible for the daily maintenance and operations of the missile systems. A launch battalion is only equipped with a single type of missile. Each launch battalion possibly consists of a fixed or mobile launch control centre, with a number of launch companies. There are microwave and **radio data, and voice communications** links, between the launch battalion and the missile brigade and base command centres.

A nuclear missile launch company may be in charge of a single missile, either silo-based or mounted, on a transporter-erector-launcher (TEL) vehicle. A conventional missile launch company may deploy 5~6 TEL vehicles and 5~6 missile transport vehicles. A mobile launch company may also include an electric-power generation vehicle, a surveying vehicle, and a **communications command vehicle**. The next page contains the Battle Order of the SAC as of 2009.



## PLA Second Artillery Corps Order of Battle (May 2009)

Unit	Cover Designator	Province	City/Region	Equipment
<b>51 Base</b>	<b>96101 Unit</b>	<b>Liaoning</b>	<b>Shenyang</b>	
806 Brigade	96111 Unit	Shaanxi	Weinan (Hancheng)	DF-31A (CSS-9)
810 Brigade	96113 Unit	Liaoning	Dalian (Jinzhou)	DF-3A (CSS-2)
816 Brigade	96115 Unit	Jilin	Tonghua	DF-15 (CSS-6)
822 Brigade	96117 Unit	Shandong	Laiwu	DF-21C (CSS-5)
?	96623 Unit	Shandong	Laiwu	Support
<b>52 Base</b>	<b>96151 Unit</b>	<b>Anhui</b>	<b>Qimen (Huangshan)</b>	
807 Brigade	96161 Unit	Anhui	Chizhou	DF-21 (CSS-5)
811 Brigade	96163 Unit	Anhui	Huangshan (Qimen)	DF-21 (CSS-5)
815 Brigade	96165 Unit	Jiangxi	Jingdezhen (Leping)	DF-15B (CSS-6)
817 Brigade	96167 Unit	Fujian	Yongan	DF-15 (CSS-6)
818 Brigade	96169 Unit	Guangdong	Meizhou	DF-11A (CSS-6)
819 Brigade	96162 Unit	Jiangxi	Ganzhou	DF-15 (CSS-6)
820 Brigade	96164 Unit	Zhejiang	Jinhua	DF-15 (CSS-6)
?	96172 Unit	Anhui	Huangshan (Qimen)	Support
<b>Signal Regiment</b>	96173 Unit	Jiangxi	Jingdezhen	<b>Signal</b>
Factory	96174 Unit	Anhui	Huangshan (Xiuning)	Maintenance
<b>53 Base</b>	<b>96201 Unit</b>	<b>Yunnan</b>	<b>Kunming</b>	
802 Brigade	96211 Unit	Yunnan	Jianshui	DF-21 (CSS-5)
808 Brigade	96213 Unit	Yunnan	Chuxiong	DF-21 (CSS-5)
821 Brigade	96215 Unit	Guangxi	Liuzhou	DH-10
?	96217 Unit	Guizhou	Qingzhen	?
?	96219 Unit	Yunnan	Kunming	?
<b>54 Base</b>	<b>96251 Unit</b>	<b>Henan</b>	<b>Luoyang</b>	
801 Brigade	96261 Unit	Henan	Lingbao	DF-5A (CSS-4)
804 Brigade	96263 Unit	Henan	Luanchuan	DF-5A (CSS-4)
813 Brigade	96265 Unit	Henan	Nanyang	DF-31A (CSS-9)
<b>55 Base</b>	<b>96301 Unit</b>	<b>Hunan</b>	<b>Huaihua</b>	
803 Brigade	96311 Unit	Hunan	Huaihua (Jingzhou)	DF-5A (CSS-4)
805 Brigade	96313 Unit	Hunan	Huaihua (Tongdao)	DF-4 (CSS-3)
814 Brigade	96315 Unit	Hunan	Huaihua ( Huitong)	DF-4 (CSS-3)
824 Brigade	96317 Unit	Hunan	Shaoyang (Dongkou)	?
?	96321 Unit	Hunan	Shaoyang (Dongkou)	Support
<b>Signal Regiment</b>	96325 Unit	Hunan	Huaihua (Hecheng)	<b>Signal</b>
<b>56 Base</b>	<b>96351 Unit</b>	<b>Qinghai</b>	<b>Xining</b>	
809 Brigade	96361 Unit	Qinghai	Datong	DF-21 (CSS-5)
812 Brigade	96363 Unit	Gansu	Tianshui	DF-31A (CSS-9)
823 Brigade	96365 Unit	Xinjiang	Korla	DF-21 (CSS-5)
Training Unit	96367 Unit	Qinghai	Delingha	-
Training Unit	96367 Unit	Xinjiang	Ruowu	-
<b>22 Base</b>	<b>96401 Unit</b>	<b>Shaanxi</b>	<b>Baoji</b>	

## **Second Artillery Readiness Levels**

According to *A Guidebook to the Study of Campaign Theory*, “the Second Artillery must continually focus on discovering the enemy’s attempts at attack, its times of attack, and must always conduct defensive exercises and preparations.” PLA doctrine requires that the Second Artillery “operate and coordinate with air, ground, and other defensive organizations under the direction of the CMC to implement a nuclear counterattack campaign.”

The Second Artillery has a system of three classes of readiness. Under normal conditions, the firing units are at “Third Class” status. If CMC receives a warning that the enemy may use nuclear weapons, the readiness level is raised to “Second Class” status. At this status, units must prepare to move to firing positions or may actually deploy to firing positions, many of which can be tunnels or prepared underground, protected positions. The highest readiness status is “First Class Warning,” where missile forces are fully ready to fire and are either deployed or in combat positions and with their support elements, warheads, and fuel, waiting for a launch order.

## **Nuclear Command and Control**

Second Artillery Corps doctrine requires “comprehensive coordination with other headquarters and commands. In order to maintain that level of communication throughout the force, command and control for missile forces is highly centralized, redundant, and networked. Two PLA officers writing in the book *Missile Combat in High Technology Warfare* describe Second Artillery command and control this way: “The nodes in a ballistic missile command and control network are 1) the commander in chief (*tongshuaibu*), 2) the command organizations of the military departments, 3) the missile bases, and 4) the firing units.” Furthermore, they say, “especially where it concerns strategic missiles, the ability of the commander in chief [this can also be translated as “supreme command authority”] to control firing orders must be executed quickly, and firing orders must be **encrypted** (encoded).”

The Central Military Commission is likely to have a dedicated command, control, and communications network for warhead management and directing nuclear strikes. Within a missile base, battalion-level entities under **communications regiments** are responsible for managing a dedicated satellite ground station, microwave communications facility, and fiber optic or other landline communications.

## **Technology Upgrades**

The PLA is currently fielding advanced communications technology, such as a communications network: switching systems, fiber optics, satellite-to-ground and ground-to-satellite communications, microwave communications, cellular telephones, and pagers. New **shortwave systems** are now also being deployed in the Second Artillery.

In late 2009, it was reported that the Second Artillery Corps was constructing a 5000 km-long underground launch and storage facility for nuclear missiles in Hebei province. *47 News* reported that the facility was likely located in the Taihang Mountains. Figure 5 gives approximate locations of reported tunneling which coincides with the location of the six SAC Bases/Divisions.



THE WASHINGTON POST

Figure 5 – Approximate areas of reported tunneling



Two Chinese DF-5 ballistic missiles on military trains being transported in an underground tunnel.

## M89 and Second Artillery Corps Location

If one looks at the locations of M89 stations, that were obtained by the ITU Monitoring station in Japan by Direction Finding, and compare these with the location of Second Artillery Corps Divisions, the outcome is quite revealing as can be seen in this table and in the Google map contained in figure 6.

Base/Division	Base/Division Location	M89 Station Location	Callsign
SAC HQ	40 01'N 116 20'E	40 10'N 116 10'E	Q7NW
51	41 47'N 123 25'E	41 39'N 123 32'E	DRV8
52	30 06'N 118 10'E	29 41'N 119 50'E	QV5B
53	25 04'N 102 41'E		
54	34 41'N 112 28'E	35 12'N 108 17'E	GNXG
55	27 33'N 109 57'E		
56	36 37'N 101 46'E	36 18'N 104 25'E	CZT2
Unknown	Urumqi Region	43 26'N 90 14'E	3A7D
Unknown		24 18'N 110 20'E	NYZ

This is why I've come to the conclusion that M89 is probably the communication network of the Second Artillery Corps. I realize that this is speculation on my part and reliable information from Chinese sources is not available to confirm my findings, but I feel that I'm on the right track. My conclusion is also based on 5 years of concentrated monitoring of M89, as well as 42 years of experience in Signals where I gained expertise in Division, Brigade and Company level communication infrastructure. From my observations, M89 HF CW communications we hear most days (Channel Markers with the odd message) are probably Divisional Level backup HF Circuits.

The majority of communications supplied by the Signal Regiments in the field would use VHF/UHF systems, which provide reliable point to point communications and, since they are line-of-sight, are almost impossible to be intercepted. I've included a few news articles of SAC Signal Regiments exercising in the field showing VHF/UHF antennas being used.

Occasionally, we get a flurry of activity. The most recent was in September and May 2012. From my observations, this activity is probably a Brigade Level exercise as the control stations work the same outstations. In the case of the May exercise, if we look at the Order of Battle Chart on page 9, it appears that SAY7 could have been Base/Division 51, 53, or 55. Since Base 51 is quite far from the GlobalTuners in Hong Kong and signal strength from DRV8 is usually quite weak, I'm guessing that the exercise was either Base 53 or 55. I've extracted what information I was able to obtain during the May and Sep Exercises and have included this on a chart at the end of this article. It would appear that exercises take place every four months, May, Sep, and Jan. Also see PLA news articles on Signal Regiment Exercise in May 2005 at the end of this article.

Direction finding equipment being used by the Tokyo ITU monitoring station has provided us with a good approximation of the location of M89 stations being heard. The close proximity of DRV8 and Q7NW to Tokyo has naturally provided much better DF fixes. In the case of QV5B, research has shown that this Signals Unit is located in Jiangxi Province, which is roughly where

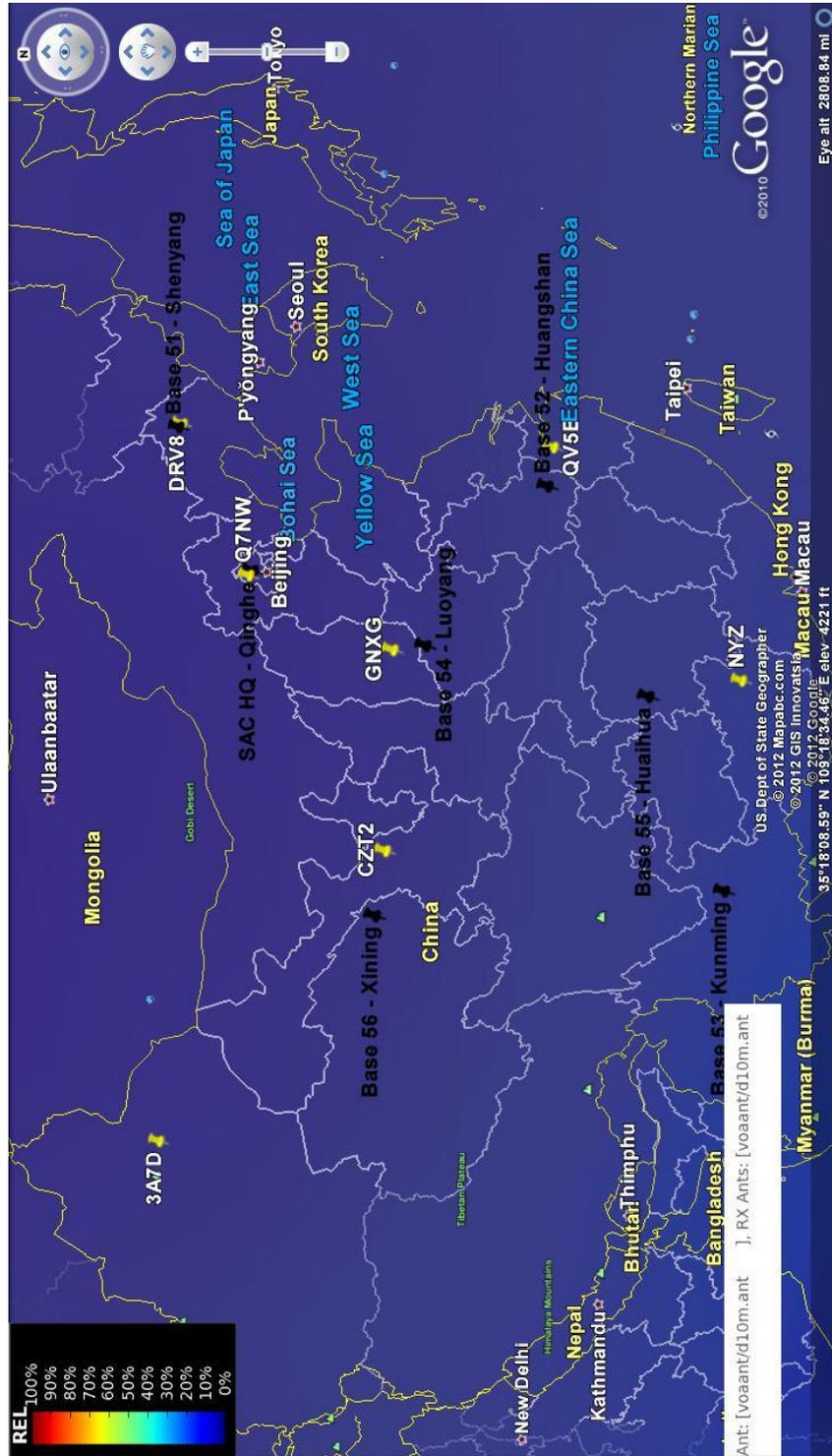


Figure 6 – Google map depicting location of M89 stations in relation to SAC Bases/Divisions

DF fixes this station. Since the other stations are much further away from Tokyo, it is expected that these DF fixes are less accurate.

Unfortunately, monitoring has not provided us with any stations associated with Base 53 and Base 55, except for possibly NYZ. Due to the fact that NYZ uses a 3 letter callsign and only transmits for a 5 minutes period at 20 minutes past the hour, and has never been heard sending any traffic, I don't believe that this station is involved in SAC communications. My "gut feel" is that this station is naval related.

Getting back to Base 53 and 55, I occasionally hear M89 type stations in traffic which are using known M89 frequencies. The odd thing is that the signal is usually louder than the M89 station that normally uses this frequency. For example, I recently copied such a station on 5801, which is normally used by 3A7D, and is always very weak to copy. Due to the signal strength of the received signal, the station could probably be located in the areas of Base 52, 53 or 55.

As can be seen on the map, 3A7D is not located near any of the 6 Bases, but due to the large number of fixes on this station, I believe that the location is probably correct. This is the second hardest station for me to hear from the Hong Kong Tuner. If one looks at the map in Figure 5 depicting areas of suspected tunnelling, there is an area in the region of Urumqi which is close to the location for 3A7D. So it does make sense to have a SAC communication infrastructure in this remote location.

The most difficult station to monitor is CZT2. This could be due to its location, propagation and the frequencies being used by this station.

Over time and with more copies of messages being sent, it might be possible, through traffic analysis, to determine with greater certainty which of the units, from the Order of Battle, messages are originating from.

In my research, I also found reference to ELF/VLF/LF transmitters, but further research pointed to these belonging to the Chinese Navy. However, there were a few LF transmitters that I was unable to confirm as being Navy, so they may belong to the SAC, as LF transmissions during a nuclear conflict is still a viable option.

Another of my research projects was to use propagation as a means of determining the transmitter foot print of each M89 station. Again, this is not an exact science, but I've come to the conclusion that each M89 station's transmitted signal frequency, for both day and night frequencies, have been chosen to cover the Base/Division area where the station is located. Figure 7 visually depicts the area being covered by station 3A7D on 7602 Mhz at 0300z, which is the Urumqi area.



Figure 7 – Signal coverage of station 3A7D on 7602 Mhz at 0300z

As for traffic being sent by M89 stations, as indicated in my Internet research on the SAC, all messages sent are encrypted. A large amount of traffic is being sent, but only a very small number are heard due to the large area of China and the lack of E2K monitors nearby.

Through the use of Internet research, Direction Finding data, location of SAC Bases/Divisions, and traffic pattern, I've come to the conclusion that M89 is probably the communication network of the Second Artillery Corps. A lot more work is required to solidify this theory and the best way of doing this is to increase the amount of monitoring of M89 known frequencies by E2K members.



PLA Signaler in Radio Van using Morse Code key

## M89 Sep 12 Exercise Traffic Pattern Chart

Date	Times	Freq	Msg Sent	Msg QSL (Appears that msg nrs revert to 1 each day)
11	0301 – 0405	8014	04	1103 1121
12	0151-0345	8014	07	1136
13	Not Monitored	8014		
14	0157 – 0430	8014	16 - 21	1103 1142
15	0132 - 0352	8014	18 – 22	1048 1100
16	0208 – 0606	8014	17-22	1102 1120 1235 1300 1334
17	N/H	8014		
18	N/H	8014		
11	1959 – 2028	4047	0040	
11	1438 – 1503	4047	0039	
12	1429 – 1450	4047	0043	
13	Not Monitored	4047		

**IEC:** (These 4 numbers were sent to all stations checking into the net and seem to change daily. Number 5816 was used 3 times. Unsure about the meaning or purpose of this number. I thought it might be a reference to a frequency and periodically monitored the IEC given for the day, but did not hear any signals.)

8321 / 5816 / 9835 / 2109

**Unknown message header number:** After looking over the various messages that were sent on 8014 and 4047, I noticed that there was always a two number figure in the message header. Don't know the meaning of this number which always consisted of the following three numbers:

42 / 75 / 80

**Composition of Net on 4047:**

CM8Z (Control station)

00QX (Zero OQX)

8NOS

F1PZ

F5SU

DPU2

Note: Since this net operated during my daytime hours, and I was away on holidays, did not get to monitor this station after 13 Sep.

**Composition of net on 8014:**

Note: From what I've been able to determine, there were actually 2 nets on this frequency. The first net consisted of the following stations:

F7UT

J7OX (8864)

HPU3 (8799)

8IMZ (8149)

Note: The control station never sent a callsign. The number after the callsign appears to be the address of the station – just a guess on my part. It appears that the address of the control station is 9049. This net was only heard once, so possibly switched to another frequency.

The second net consisted of the following stations:

DNP2 (Control station) (Callsign was also sent as DMP2)

OJPY (Zero JPY)

HHP5

F7SX

## M89 May 12 Exercise Traffic Pattern Chart

Date	Times	Freq	Msg Sent	Msg QSL
14	1636 – 1703	6837	1671	
15	Not Monitored	6837		
16	1638 – 1648	6837	Mostly U/R	
17	1600 – 1617	6837	Chat only	
17	2005 – 2017	6837	Chat only	
17	2206 – 2212	6837	1936 (?)	
18	1205 – 1319	6837	1983/EX 1984/EX 1985 1986 1987 1988(?)	
19	1201 – 1212	6837	Chat only	
20	Not Monitored	6837		
21	1200 – 1213	6837		
22	1201 – 1230	6837	1223/EX 1224/EX 1225/CCK	
23	1203 – 1221	6837	1319/EX 1320/EX 1321/CCK	
24	1200 – 1250	6837	1415/EX 1416/EX 1417/CCK	310
24	1903 – 2116	6837	1447/EX 1448/EX 1449/CCK	
25	1159 – 1328	6837	1511/EX 1512/EX 1513/CCK	
25	1559 – 1640	6837	1527/EX 1528/EX 1529/CCK	
25	2152 – 2306	6837	1516/EX(?) 1552/EX 1553 1554 208 2986/EX 2987	0609 0621 0633 0649 0659

### IEC:

During this Exercise, only one IEC was used: 76MO

### Net Composition:

SAY7 (Control Station)

8UPT

3NLA

AX6I

X9SB

XFI8

G3JZ

## A number of news article on Second Artillery Communication Regiment



The officers and men of a communication regiment of the Second Artillery Force (SAF) of the Chinese People's Liberation Army are maintaining their equipment. (China Military Online/Yang Yonggang, Zhang Jiangang and Zhang Qi) (Source: China Military Online) 2012-01-11

### **SAF communication regiment drills hard to achieve proficiency in communication skills**

Yesterday, the reporter tramped over hills and dales to a mountain valley to cover an exercise conducted by a communication regiment of the Second Artillery Force (SAF). When I arrived there and looked around, not a single soul could be seen. But the topographic map showed clearly that the exercise detachment should be where the reporter was in the valley. The reporter was perplexed.

The reporter was about to leave the place when Political Commissar Jiang Guofu of the regiment rang him up and told him: "The place where you stand is a vehicle-mounted satellite station". Before long, a miracle happened. With the snow camouflage net removed, a bustling scene suddenly appeared before the reporter. Well-equipped officers and men were operating on field communication equipment in an orderly way. The vehicle-mounted satellite station was busy processing and transmitting various data.... The reporter felt as if he could smell the odor of gunpowder on the invisible battlefield.

Suddenly, deafening roar came from the valley. Dozens of field communication support equipment, including communication command vehicles, frequency hopping radio vehicles, etc. drove out from thick woods. No sooner had the field communication support detachment finished its shakedown test than the communication line linking a missile launching detachment was attacked by the "enemy", resulting in the "breakdown" of several support equipment. However, Kang Weijie, a third-class NCO, with his unrivalled skills, fixed the communication system paralyzed by "enemy virus" attack in only ten minutes, and the system was brought back to life once again. In the distance, two red signal flares streaked up into the sky. In an instant, over 1,000 troops and 100 vehicles, with the help of modern "stealthy" technologies, swiftly "disappear" into the mountains. The vast snowfield once again returned its tranquility...

By Li Yongfei and Wang Yongxiao (Feb.16, PLA Daily)

## Signal battalion toughens troops in field exercise



In late January, the strong north wind brought biting cold to the heart of a mountain where the 1st Battalion of a communication regiment of the Second Artillery Force was conducting an accompanying communication support exercise under actual war conditions despite the severe cold. For successive days, the officers and men made communication, executed emergency support plans, and successfully accomplished all the training subjects including the skilful operation of modern digital communication system, the switch from wire to wireless communication or vice versa, telegraph transmission, fax sending and reception and data transmission. The communication support capabilities under special conditions were effectively tested in the exercise.

In recent years, the battalion has participated in several major communication support missions and achieved a leapfrog progress in its overall communication support capabilities through exploring new measures of battlefield communication support. The battalion has been honored the "First-class Battalion in Military Training" by the Second Artillery Force and won one third-class collective merit.

By Sang Linfeng, Shi Ziqiang and Feng Jinyuan

(Feb.7, PLA Daily)

## Tempering communication capability for future operation

PLA Daily 2005-05-27

A communication station was bombed by the "enemy" and all communication stopped...

Time means the opportunity for operation and the life of human being. The communication element departed rapidly and rushed to the "spot". After 15 minutes of work, all equipment of the station were changed and communication resumed. This was a scene of emergency communication support exercise organized by the Second Artillery Force in early May. In recent years, troops of the Second Artillery Force have actively explored the effective approaches of linking between command communication system and systems of main combat weapons, intelligence reconnaissance, radar detection and electronic confrontation, intensified their efforts in systematic building of the battlefield, equipment and competent personnel, so as to boost constantly the overall support and rapid response capabilities of the communication troops (elements).

By Zhang Chunyan, Guo Zhuwen and Lu Guoxing

(May 27, PLA Daily)

### References:

[http://en.wikipedia.org/wiki/Second\\_Artillery\\_Corps\\_\(China\)](http://en.wikipedia.org/wiki/Second_Artillery_Corps_(China)) 20 Apr 12

<http://www.defence.pk/forums/chinese-defence/161270-chinese-nuclear-modernization-smaller-later.html> 20 Apr 12

<http://www.fas.org/nuke/guide/china/facility/qinghe.htm> 20 Apr 12

<http://www.indiandefencereview.com/defence-industry/Chinas-Ballistic-Missile-Programme-and-Its-Defence-Industry.html> 20 Apr 12

<http://sinodefence.wordpress.com/2010/12/07/pla-second-artillery-corps/> 20 Apr 12

[http://english.chinamil.com.cn/site2/militarydatabase/2006-02/16/content\\_420299.htm](http://english.chinamil.com.cn/site2/militarydatabase/2006-02/16/content_420299.htm) 12 Apr 12

[http://english.chinamil.com.cn/site2/militarydatabase/2006-02/07/content\\_403461.htm](http://english.chinamil.com.cn/site2/militarydatabase/2006-02/07/content_403461.htm) 27 Apr 12

[http://english.chinamil.com.cn/site2/militarydatabase/2005-05/30/content\\_216491.htm](http://english.chinamil.com.cn/site2/militarydatabase/2005-05/30/content_216491.htm) 27 Apr 12

<http://www.sinodefence.com/strategic/organisation.asp> 06 May 12

China's Nuclear Warhead Storage and Handling System by Mark A. Stokes March 12, 2010