CHINESE NUCLEAR WEAPONS AND ARMS CONTROL

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The People's Republic of China has possessed nuclear weapons since 1964, yet its impact as a nuclear weapons power is relatively unstudied and unknown. With the vast changes taking place in the world the future role of China's nuclear forces deserves examination. This paper provides an overview of Chinese nuclear forces, and explores several questions having to do with the nature of those future directions.[1]

I. Background

China is the most recent nuclear weapon nation and also the most obscure to outside observers. Less is known about Chinese nuclear forces than about those of the other four acknowledged nuclear weapon states: the US, USSR, UK, and France. This is due to the extensive secrecy surrounding every aspect of Chinese nuclear weapons. All matters concerning current Chinese nuclear forces are officially considered secret in China. Two encouraging developments were publication of China Today: Nuclear Industry, and the Chinese assistance provided Xue Litai and Stanford University professor John Wilson Lewis, which resulted in the book, China Builds the Bomb. These works provided important historical information about the Chinese project to build nuclear weapons in the 1950s and early-1960s.

The paucity of information about Chinese nuclear forces makes it is difficult to adequately research the topic. A bare minimum of data and information is necessary for a constructive debate and dialogue about key issues. Prior to the US-China rapprochement in the 1970s, the US government routinely reported developments in Chinese nuclear capabilities. As ties with China grew closer throughout the 1980s the US disclosed less and less. Today the scholar has little to rely on except the occasional statement from government officials. Appendix A lists ten sets of questions whose answers would be useful to enrich a discussion about China's nuclear weapon and arms control policies.

II. History

On January 15, 1955 Mao Zedong and the Chinese leadership decided to obtain their own nuclear arsenal, in part precipitated by the Korean War, events in Indochina, and the Taiwan Strait crisis. From 1955 to 1958 the Chinese were partially dependant upon the Soviet Union for scientific and technological assistance. Six accords were signed, one of which stated that the Soviet Union would supply China a prototype atomic bomb and missiles - a promise which was not kept, thus accelerating the Sino-Soviet split. From 1958 until the break in relations with the Soviets in 1960, the Chinese became increasingly self-sufficient. Similar to the efforts of the other nuclear powers, the Chinese project to build the bomb was characterized by the large scale mobilization of manpower and resources. Facilities were built to produce and process uranium and plutonium at the Lanzhou Gaseous Diffusion Plant and the Jiuquan Atomic Energy Complex. A design laboratory (called the Ninth Academy), was

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[1] This paper is an excerpt of several chapters on Chinese nuclear weapons being prepared under the direction of Richard W. Fieldhouse for Volume V of the NRDC's Nuclear Weapons Databook series, entitled British, French and Chinese Nuclear Weapons and Nuclear Weapons Proliferation (forthcoming).

established at Haiyan, east of Lake Qinghai. A test site at Lop Nur was established in October 1959.

The Chinese initially modelled their military forces and research and development establishment after those of the USSR, and the Soviets did transfer important technologies, including early missile, aircraft and submarine designs. The Chinese designed their own fission bomb and successfully tested it on 16 October 1964 at Lop Nur. Two years later a missile armed with a nuclear warhead was successfully tested. On June 17, 1967 China tested its first hydrogen bomb, only 32 months after its first atomic test. The US span between these two key milestones was 86 months, the USSR 75 months, the UK 61 months, and the French 105 months.

As of April 1990 China has conducted 34 known nuclear weapon tests, varying in yield from low-kiloton to about four megatons (See Table 1). This test program has enabled China to produce a stockpile of some 300 nuclear weapons of at least five different yields and designs, both fission and fusion. China is not a signatory to the 1963 Limited Test Ban treaty and tested weapons in the atmosphere as late as 1980. On 21 March 1986 Prime Minister Zhao Ziyang announced China's decision to renounce atmospheric testing as part of its recognition of the United Nations Year of Peace.

III. Nuclear Forces

Overview

China maintains a relatively small arsenal of nuclear forces, estimated to contain between 250-325 warheads, that are structured in a "triad" of land based missiles, bombers and submarine-launched missiles (See Table 2). Most of China's nuclear forces consist of ballistic missiles with ranges varying from 1,400 kilometers (km) to 13,000 km. Because of their range the vast majority of these are aimed at Asian targets. Perhaps ten missiles have intercontinental range and may be able to hit targets in Europe or North America. So far all Chinese missiles carry one warhead each. It is unclear at this point whether there are plans to deploy missiles with MRV (multiple re-entry vehicles) or MIRV (multiple independently targetable re-entry vehicles) capabilities, although such work has been undertaken. At least one missile test in 1986 appeared to be related to testing these capabilities.

China also maintains a bomber force of approximately 120-140 aircraft of two types with an estimated 120-150 bombs. The final and most recent leg of China's triad are the nuclear powered ballistic missile submarines (SSBN) and the ballistic missiles (SLBMs) they carry. Development of the force has been slow because of technical difficulties with the solid fuel for the missiles and the nuclear reactors for the submarines. Several test launches have taken place, as has navigational testing.

It is possible that certain shorter-range systems are intended for tactical battlefield use. Several tests of low-yield warheads (one perhaps a neutron bomb), and field training exercises that simulated tactical nuclear weapon use suggest that China may have forces and weapons for

tactical nuclear missions. The US Defense Intelligence Agency (DIA) has reported that atomic demolition munitions (ADMs) "may be used" by China.

Land-based missiles

China has four types of land-based ballistic missiles, known in the West by their US designations: CSS-1, CSS-2, CSS-3 and CSS-4 (CSS stands for Chinese Surface-to-Surface). The Chinese designations are thought to be DF-2, DF-3, DF-4 and DF-5 respectively. (DF stands for Dong Feng which can be translated as "East Wind.") Apparently the DF-1 was an earlier model of a short-range ballistic missile no longer in service. A fifth type, the M-9, may be in service with Chinese forces and has been offered for sale commercially to foreigners.

DF-2/CSS-1: China first began to deploy the DF-2 medium-range ballistic missile (MRBM) in 1966. The DF-2 has a range of about 1000 km and is thought to have a 20 kiloton (kt) warhead. According to the US Joint Chiefs of Staff, "The CSS-1 MRBM can reach targets in the Eastern USSR, peripheral nations, and some US bases in the Far East. The deployed force has not increased significantly since 1972." Currently there believed to be about 20-30 although one prominent report states that all DF-2 missiles have been retired.

DF-3/CSS-2: China's intermediate-range ballistic missile (IRBM), the DF-3 has a range of approximately 2500 km. According to the DIA, "the system is probably intended for relatively large population targets in central and eastern Russia." It was first deployed in 1972 and some 60-80 are thought to be currently deployed. An unknown number of these missiles (perhaps "several dozen") were sold to Saudi Arabia in 1987.

DF-4/CSS-3: In 1976, China began flight testing the DF-4, its first "intercontinental" ballistic missile (ICBM). Its maximum range of 7000 km puts it between an IRBM and an ICBM. US defense officials designate it a "limited-range ICBM." It is China's first multiple-stage missile, using liquid fuel and carrying a single warhead estimated to be 1-3 megatons (Mt) in yield. Although the DF-4 was initially estimated to be incapable of reaching Moscow, the range has been increased and now Moscow is within reach. It was the first Chinese missile deployed in silos and since only about 10 have been deployed it is assumed that it was a precursor to a full-range ICBM.

DF-5/CSS-4: The DF-5 began development in 1970. Its first public appearance came with two test flights over the Pacific Ocean in May 1980. Its range of 13,000 kms would allow it to reach targets anywhere in the Soviet Union, Europe or North America. It is believed to carry a multi-megaton warhead, perhaps 4-5 Mt. Only about ten CSS-4s are deployed. It is unclear exactly why the numbers are so few.

M-9: The M-9 is a short-range ballistic missile with a maximum range of 600 km. The Chinese have offered it for sale at arms exhibitions and advertised its capabilities. About nine meters long and weighing a little over 6 tons at lift off, this solid fuel, mobile missile is certainly capable of carrying a nuclear warhead though it is not known whether it is in service with the People's Liberation Army. China is not a part of the Missile Technology Control Regime effort to stem the proliferation of ballistic missiles.

Bombers

Bombers provided China with its first nuclear delivery capability and were used to drop at least eight, and perhaps as many as 15, nuclear test devices. There are two types of aircraft currently available for nuclear bombing missions; the H-6 (Tu-16 Badger) and H-5 (Il-28 Beagle). These airplanes are derived from Soviet designs and have been modified by the Chinese. An early Chinese bomber believed to be for nuclear missions was the force of Soviet Tu-4 Bull aircraft (transferred from the USSR), which in turn was based on the US B-29. There were never more than a dozen or so Tu-4s in service with Chinese forces. None are believed operational today.

Xian H-6 (Tu-16 Badger): China's primary nuclear bomber is the H-6, which China began producing in 1968. The Soviet version dates from the early 1950s. Approximately 100-120 serve with Chinese forces. With a combat radius of 3000 km, the JCS says the Badger "can reach virtually all of the Soviet Union and US allies in Asia, but its capability to penetrate air defense systems is poor." About 50 Soviet urban-industrial areas east of the Urals are within its range.

Harbin H-5 (Il-28 Beagle): The original Soviet Il-28 Beagle first flew in August 1948. The Chinese currently have over 400 of their H-5 aircraft deployed in the Air Force and it is estimated that about 20 have a nuclear mission. The Beagle has a combat radius of 1000 km. The JCS reported that "staging from Il-28 capable airfields closest to the border areas would permit strategic operations against portions of the Soviet Union, all of South Korea, almost all of Vietnam, and parts of India. The limited range of the aircraft suggests that it also might be used in a theater support role within the PRC."

It is unclear whether there are plans to develop a new long-range supersonic bomber to augment or replace the current force as had been discussed in 1987. However, a new attack aircraft, the H-7, is being developed by Xian and may have a nuclear mission. The H-7 is said to be the highest priority program of the Chinese Air Force and is expected to be operational in 1992-93.

Submarines

China has had difficulty in developing its SSBN and SLBM. The SSBN, designated the Xia class by the West and reportedly the Daqingyu class in China, has been in various stages of development for 20 years. As of early 1990 it is believed that two Xia class SSBNs have been built, with perhaps three more under construction. Western estimates vary from 6 to 12 for the total program, although the lower number seems more plausible. In April 1981, China launched its first Xia class submarine which went on sea trials in 1983. In 1986 China declared the submarine operational.

The SLBM, designated CSS-N-3, (N for naval) by the West and reportedly Jiu Liang in China, was tested after a decade of development. It is a two-stage missile with an estimated

maximum range of 2800-3300 km, carrying a single warhead with an estimated yield of between 200 kt and 1 Mt. The first known SLBM launching was on 12 October 1982 when a CSS-N-3 missile was launched by a Golf class training submarine. The conventionally powered Golf SSB equipped with 2 missile tubes was assembled in 1964 from Soviet components, and may be available as an operational submarine in a crisis. A launch on 15 October 1985 from a Xia class SSBN may have been a failure. On 27 September 1988, China launched a CSS-N-3 from a Xia class submarine to a target some 1400 km away in the East China Sea. In a series of Chinese newspaper articles during 1989 China's SSBN unit was identified as "Unit 09" commanded by Rear Admiral Yang. The articles reported that from late 1985 to early 1986 a Chinese SSBN navigated more than 37,000 km and "broke the 84-day record of continuous underwater navigation set by an American submarine." In the spring of 1988 a Chinese nuclear submarine reportedly navigated the Taiwan Strait into the South China Sea and conducted "a successful test voyage at extreme depths." The exact status of the SSBN force remains unknown. While the Chinese have declared that the first SSBN is operational, it is still not clear whether the submarine has deployed on patrol with missiles. It will take some time for the force to settle into an operational routine.

Other nuclear weapons

Some of China's shorter-range systems could be used for nuclear missions. There are indications that China may be considering building, or may already have built, a stockpile of "tactical" nuclear weapons for less than all-out nuclear warfare, possibly including atomic demolition munitions. These nuclear land mines could be used on Chinese territory to prevent an invading force from using the most suitable routes, by closing mountain passes, creating forest fires, and so on. In 1982, the People's Liberation Army (PLA - the general name for all of China's armed forces) conducted a large military exercise some 700 km south of the Chinese-Mongolian border, and detonated a simulated tactical nuclear airburst, complete with mushroom cloud. The local newspaper carried a photo with the caption "An 'atomic bomb' exploding deep in the ranks of the 'enemy'." Some of China's lower-yield nuclear tests suggests the development of "tactical" warheads.

IV. Issues

China appears to have two main nuclear goals: maintaining an assured nuclear retaliatory capability, especially against Soviet targets in Asia, and maintaining its nuclear status or prestige. China is the only developing country with nuclear weapons. It proclaimed its obligation to break the "nuclear monopoly" of the superpowers as a justification for joining the nuclear club.

Nevertheless, China is not interested in being a military superpower or in engaging in an arms race as it would drain resources from the larger goal of economic modernization and from civilian programs. It is clear that China is unable to equip all its regular armed forces with modern and expensive equipment and has thus chosen to reduce its military manpower by one million. For China good relations with as many nations as possible is a prerequisite for various types of modernization. The most important improved relationship is with the Soviet Union.

Sino-Soviet Relations

What influence will improved Sino-Soviet relations have on China's future as a nuclear power? On 15 May 1989 General Secretary Gorbachev arrived in Beijing for an historic summit meeting with China's senior leaders, the first such meeting in 30 years. The two sides stated that the meetings "normalized" relations between them and between their Communist Parties. The meetings produced several significant results. In a speech of 17 May to the Chinese public, General Secretary Gorbachev outlined changes to Soviet military forces in the Soviet Far East, stating that 436 intermediate- and shorter-range missiles based in the eastern USSR would be eliminated under the terms of the US-Soviet INF Treaty. He announced the reduction during 1989-90 of 200,000 troops in Soviet Asia, including the reduction of 12 ground force divisions, 11 air force regiments and 16 warships from the Pacific Fleet. Gorbachev also announced the reduction of 75 percent of Soviet forces in Mongolia, including three ground divisions and "all air units."

Moreover, General Secretary Gorbachev stated that the USSR is restructuring its military forces deployed along the Sino-Soviet border, but is also "prepared to work for the withdrawal, on terms to be agreed with China, of military units and armaments from the border areas, leaving only personnel required for performing routine border duties." As stated in their joint communique of 18 May, "both sides agreed to take measures to reduce armed forces in the area of the Sino-Soviet border to a minimum level in line with normal and good neighborly relations between the two countries." This proposed demilitarization of the Chinese-Soviet border would represent a radical change from the military situation that has existed for nearly 30 years, and could lead to possibilities for other measures of military restraint or arms control involving China. If Chinese-Soviet relations continue to improve and the military competition between them diminishes further, it would offer China an opportunity to reduce its military and nuclear weapon programs correspondingly.

Arms Control Possibilities

The changing international situation, including significant progress in US-Soviet arms control and the prospect of a de-militarized Sino-Soviet border, will undoubtedly focus increasing attention on the nuclear forces and arms control policies of the three non-superpower nuclear weapon nations: Britain, France and China. The present situation offers new opportunities for increasing security and exploring arms control options. These three nuclear nations may have to reassess earlier assumptions about their rivals and adversaries, as well as the military forces deemed necessary for security. Chinese attitudes on arms control will be of particular interest in several areas: nuclear arms control and disarmament, nuclear proliferation, missile proliferation, and arms and technology transfers. Here we are focusing briefly only on nuclear-related arms control issues.

Chinese arms control policy has professed as its goal "genuine disarmament." China's disarmament ambassador to the UN stated in 1984:

> China's position with regard to nuclear disarmament and the prevention of nuclear war is well known. We have always stood for the complete prohibition and the thorough destruction of all nuclear weapons and take this to be the fundamental way to prevent a nuclear war. We have proposed that the superpowers possessing the largest nuclear arsenals take the lead in halting the testing, refinement and production of nuclear weapons and reach an agreement on reducing by half their existing nuclear weapons and means of delivery of all types: and that therefore a widely representative international conference be convened with the participation of all nuclear-weapon states to negotiate the general reduction of nuclear weapons by all nuclear-weapon states.

If this is a sincere statement, and if we recognize that the USA and USSR are taking steps to reduce the numbers of weapons through the INF and START treaties then the time may be ripe for greater participation by China in various arms control fora.

With the upcoming review conference on the Non-Proliferation Treaty (NPT) many nations will review the worldwide nuclear proliferation situation and will inquire, among other things, whether nations outside the treaty framework are endangering its continued operation. China may be asked to clarify its position and policies on non-proliferation of nuclear weapons or technologies to other nations, especially given the sale of DF-3A "medium-range" ballistic missiles to Saudi Arabia, and given Chinese assistance in nuclear technology to Pakistan and Iran.

China's sale in 1987 of ballistic missiles to Saudi Arabia caused considerable international concern about nuclear and missile proliferation. International concern with ballistic missile proliferation has increased in the past few years, particularly with the use of such missiles in the Iraq-Iran war. Seven industrialized nations have agreed to a series of regulations, commonly known as the Missile Technology Control Regime (MTCR), designed to reduce the flow of nuclear-capable ballistic missiles and technology to other nations. The USSR has recently stated that it also adheres to the MTCR guidelines. Reports that China has developed a short-range (600 km) nuclear-capable ballistic missile (known in the West as M-9), and offered it for sale to foreign nations have focused attention on Chinese missile transfer policy. Some nations are particularly disturbed that several Middle East nations, including Syria, have reportedly been negotiating with China to acquire these missiles.

It is not clear why the MTCR nations did not approach China or invite Chinese participation in designing the regime. Given China's capability to produce such missiles, this should be seen as a serious and regrettable oversight. Still, there will be international interest in China's policy on missile transfers and in having China join in an effort to slow the proliferation of such missiles. Presumably China will be asked to clarify what is meant by its "responsible" arms transfer policy as concerns ballistic missiles. Undoubtedly, some will propose that China agree to the MTCR guidelines. It would be considered a beginning if China would at least acknowledge the importance of preventing the spread of nuclear-capable ballistic missiles.

In all these arms control areas, China's policies and views will be of increasing interest. The international community will welcome the frank and full participation of China in the arms control debate and process.

APPENDIX A: Questions on Chinese Nuclear Forces and Arms Control Policy

1. The USSR has nearly completed the elimination of all its 436 intermediate and shorter-range missiles as called for in the INF Treaty, thus removing more than 800 nuclear warheads targeted on China. In addition, the Soviet Union is moving toward the withdrawal of its forces in Mongolia, and has agreed to demilitarize the Sino-Soviet border, as well as a general reduction of conventional forces in Asia. The USA and the USSR are approaching the finalization of the START treaty and are already discussing the next strategic arms reduction treaty. These developments have and will continue to greatly reduce the nuclear and military potential of the USSR to attack China.

Given that these military and nuclear capabilities facing China are diminishing, what measures will China take for its nuclear forces to encourage further reductions and stability?

2. China has been briefed by both the USA and the USSR on their arms control negotiations and developments since 1987. The USA (Secretary of State George Shultz) has publicly stated that in any strategic nuclear arms control negotiations after START, Britain, France **and China** would have to be involved. How does China propose to get involved in such negotiations in order to permit progress on nuclear arms reductions? After the START Treaty is signed will it propose a conference of the five acknowledged nuclear weapon states (which are also the five permanent members of the UN Security Council) to design a plan for further nuclear reductions and disarmament? Does China have any specific suggestions or plans for the "complete prohibition and thorough destruction of all nuclear weapons"?

3. Does China see an interest in agreements on nuclear risk reduction or confidence-building? For example, would China pursue bilateral direct communication links ("Hot Line") with the USA and USSR, or other similar measures?

4. There is some confusion in the West concerning the mechanism for political control of Chinese nuclear forces. Presumably China exercises very stringent controls over the custody, training and use of its nuclear weapons. It appears that the Communist Party Central Military Commission, particularly its Chairman, acts as the final authority on questions of nuclear weapons, including sole authority to order their use. What is the system of political and physical controls used to prevent accidental or unauthorized use of nuclear weapons? Do Chinese nuclear weapons have physical safeguard systems similar to US Permissive Action Links (PALs)? What other controls exist?

5. There have been statements from Chinese officials concerning a "new generation of strategic forces" being developed, including land based missiles and naval systems. What nuclear weapons research and development programs is China currently pursuing or planning: solid fuelled land-based missiles? multiple warhead missiles? a new nuclear bomber (H-7)? a second generation SSBN or SLBM? Does China now have or is it pursuing multiple warheads for ballistic missiles? If so, are they independently targetable?

6. The planned nuclear forces of Britain and France are well known to the end of the decade. What is China's nuclear posture planned to be at the end of 1999? How many ballistic missile submarines (of which type) are planned? How many land-based missiles? How many aircraft, of what type? Will there be short-range or tactical systems?

7. What are the Chinese names and designations for nuclear forces and equipment? Is the Second Artillery the nuclear missile command? What is the Chinese designation for the Soviet Tu-4 Bull bombers transferred to China by the USSR? What is the name of the ballistic missile submarine class deployed with unit 09, Daqingyu? What is the name of its missile, the Jiulong-1?

8. Is the 600 km-range M-type missile (called M-9 in the West) deployed with the PLA, or is it planned to be deployed with the PLA as a nuclear system? What range category does China consider this missile, "short-range"?

9. In its latest annual Military Balance, the London IISS reports that all DF-2 missiles have been retired. Is this true, or are there any DF-2 missiles still in service with the PLA or Second Artillery? Is there a replacement missile under development or being deployed?

10. The political and military organization of the nuclear forces of the USA, USSR, Britain and France are all well known. This is not so for China. What is the organizational structure for China's nuclear forces? For example, what is the role of each of the following organizations: the CMC, the General Staff Department, the Second Artillery, the Air Force and Navy, the Military Region, and so on. What body decides the force structure of China's nuclear forces?

Table 1

KNOWN CHINESE NUCLEAR TESTS 16 OCTOBER 1964 to 31 DECEMBER 1989

	Date	Time (GMT)	Yield Range	Type
1.	10-16-64	07:00:00.00	20 Kt	Tower/A
	U-235 fission device.			
2.	05-14-65	02:00:00.0	20 to 40 Kt	Air Dropped/A
	Weaponized version of fission device, aerial drop. The State Department, which announced the test, said the yield was "somewhat higher than first test."			
3.	05-09-66	08:00:00.0	approx. 200 Kt	Air Dropped/A
	U-235 fission device. Thermonuclear material (lithium-6) was present, indicating presumably that the test was part of the program to develop a thermonuclear weapon. The State Department, which announced the test, said the yield was in the lower end of the intermediate range.			
4.	10-27-66	01:10:00.0	20+ Kt	Missile/A
	Second Artillery Corps soldiers at Shuangchengzi, near Jiuquan launched a Dong Feng 2 missile, with a U-235 fission warhead 800 kilometers west to Xinjiang. The AEC announced the test as being in the low to low intermediate range.			
5.	12-28-66	04:00:00.0	300+ Kt	Tower/A
	The fission device used U-235. Thermonuclear material, probably lithium-6, was involved.			
6.	06-17-67	00:19:07.9	3 Mt	Air Dropped/A
	First thermonuclear detonation, 32 months after the first atomic test. Dropped from a Hong 6 bomber.			
7.	12-24-67	04:00:00.0	15-25 Kt	Air Dropped/A
	Probably an unsuccessful test of a thermonuclear device. First test not announced by PRC.			
8.	12-27-68	07:30:00.0	3 Mt	Air Dropped/A
9.	09-22-69	16:15:00.0	25 Kt	UG
	First Chinese underground test. AEC announced yield as low-intermediate. Announced by PRC 4 October 1969.			
10.	09-29-69	08:40:26.0	3 Mt	Air Dropped/A
	Announced by PRC 4 October 1969.			
11.	10-14-70	07:29:58.9	3 Mt	Air Dropped/A
	Not formally announced by PRC.			
12.	11-18-71	06:00:00.0	20 Kt	A
13.	01-07-72	07:00:00.0	<20 Kt	A
14.	03-18-72	06:00:00.0	20 to 200 Kt	A
15.	06-27-73	03:59:51.0	2 to 3 Mt	A
16.	06-17-74	05:59:49.0	200 Kt to 1 Mt	A
17.	10-26-75	00:59:59.0	<20 Kt	UG
18.	01-23-76	06:00:00.0	low	A

	Date	Time (GMT)	Yield Range	Type
19.	09-26-76	06:00:00.0	20 to 200 Kt	A
20.	10-17-76	05:00:03.8	low	UG
21.	11-17-76	06:00:17.6	about 4 Mt	A
22.	09-17-77	07:00:00.0	<20 Kt	A
23.	03-15-78	05:00:00.0	<20 Kt	A
24.	10-14-78	10:00:00.0	?	UG
25.	12-14-78	?	<20 Kt	A
26.	09-13-79	?	?	?
27.	10-16-80	04:40:28.9	200 Kt to 1 Mt	A
	Last atmospheric test conducted by any nuclear power.			
28.	10-05-82	?	?	UG
29.	05-04-83	?	?	UG
30.	10-06-83	10:00:02.8	?	UG
31.	10-03-84	05:59:57.8	?	UG
	Last Chinese test announced by U.S. Department of Energy			
32.	12-19-84	06.00.04.2	?	UG
33.	06-05-87	05:00:04	?	UG
34.	09-29-88	06:59:57	1 Kt to 20 Kt	UG
	Reputed to be a neutron bomb.			

A: atmosphere; AEC: Atomic Energy Commission; GMT: Greenwich Mean Time; Kt: kiloton; Mt: megaton; PRC: People's Republic of China; UG: underground.

Table 2

CHINESE NUCLEAR FORCES, 1990

Weapon system		Warheads			
Type	No. Deployed	Year Deployed	Range (km)	Warhead x yield	No. in Stockpile
Aircraft					
H-5 (Il-28 Beagle)	20	1974	1850	1 x bomb	20
H-6 (Tu-16 Badger)	120	1965	5900	1-3 x bombs	130
Land-based missiles					
DF-2 (CSS-1)	20-30	1966	1450	1 x 20 kt	20-30
DF-3 (CSS-2)	60-80	1970	2600	1 x 1-3 Mt	60-80
DF-4 (CSS-3)	~10	1971	4800-7000	1 x 1-3 Mt	10
DF-5 (CSS-4)	~10	1979	13,000	1 x 4-5 Mt	10
M9/SST 600	?	1989	600	1 x low kt	?
Submarine-based missiles					
JL-1 (CSS-N-3)	24	1986	3300	1 x 200 kt-1 Mt	26-38

Note: All figures for bomber aircraft are for nuclear configured versions only. Hundreds of these aircraft are also deployed in non-nuclear versions. The aircraft bombs are estimated to have yields between 20 kt and 3 Mt. Two SLBMs are presumed to be available for rapid deployment on the Golf class submarine (SSB).

Table 3
CHINESE STRATEGIC NUCLEAR FORCES 1964 - 1990

LAUNCHERS[1]									TOTAL DEPLOYED	
End of Year	Tu-4	H-6	H-5	DF-2	DF-3	DF-4	DF-5	JL-1	Launchers	Warheads
1964		1							1	0
'65		2							2	2
'66	13	2		5					20	10
'67	13	2		10					25	20
'68	13	5		15					33	30
'69	13	15		20					48	45
'70	13	25		30	5				73	75
'71	10	35		40	10	2			97	102
'72	10	45		40	15	3			113	118
'73	10	55		40	20	5			130	125
'74	10	60	5	45	25	5			150	140
'75	10	65	10	45	30	5			165	155
'76	10	70	15	45	30	6			176	170
'77	10	75	20	45	30	6			186	176
'78	10	80	25	50	40	6			211	201
'79	10	90	30	50	50	6	2		238	230
'80	5	100	30	50	60	8	2		255	250
'81	0	100	30	50	70	8	4		262	262
'82	0	105	30	45	75	8	4		267	272
'83	0	110	30	45	80	10	4		279	284
'84	0	110	30	40	90	10	6		286	296
'85	0	110	30	40	90	10	6	12	298	308
'86	0	115	30	35	85	10	8	12	295	300
'87	0	115	25	30	80	10	8	12	280	290
'88	0	120	20	25	75	10	8	24	282	292
'89	0	120	20	20	70	10	10	24	274	284

[1] Launchers are sometimes referred to by their U.S. designations, in the case of bombers describing the original Soviet version. Thus, H-6 = Tu-16 Badger; H-5 = Il-28 Beagle; DF-2 = CSS-1; DF-3 = CSS-2; DF-4 = CSS-3; DF-5 = CSS-4; JL-1 = CSS-N-3.