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Directorate  
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Intelligence Memorandum  
Office of Scientific and Weapons Research  
30 September 1993

## China's Nuclear Weapons Testing: Facing Prospects for a Comprehensive Test Ban

[Redacted]

### Summary

China has a requirement to conduct nuclear tests to develop warheads for missile systems that are expected to be deployed over the next 10 years. Its known nuclear test plans, one test this year and three tests in 1994 and in 1995, suggest China is positioning itself to be able to join a comprehensive test ban (CTB) treaty in the mid-to-late 1990s while still satisfying these national security requirements. Nonetheless, despite its competing foreign policy goals and the international pressure it is sure to face, we expect China to try to resist a test ban and to progressively raise the cost for it to join. [Redacted]

If testing proceeds without major setbacks, the Chinese should be able to develop all the warheads they require for the missile systems under development with the seven planned tests. However, this is probably not enough tests to incorporate new safety features into their warheads, particularly insensitive high

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explosives (IHE). If China stops testing prior to completing most of the seven tests, warhead development requirements probably would not be met for some systems. Moreover, if China decides to stop testing, its confidence in its existing stockpile will diminish over time as the nuclear warheads age.

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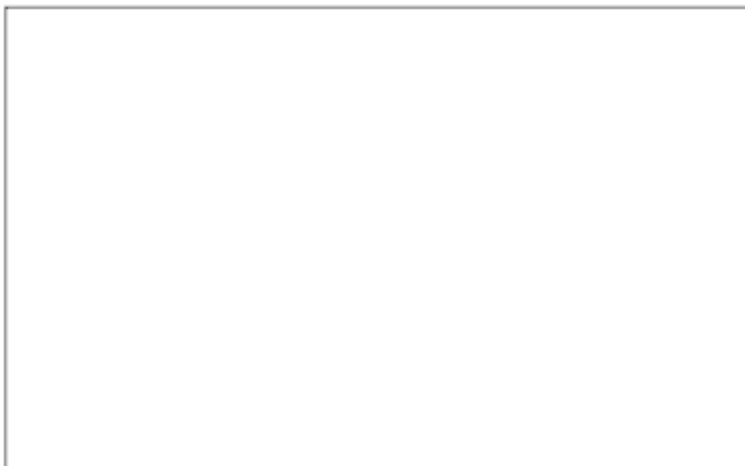
#### Introduction—Mounting Pressure

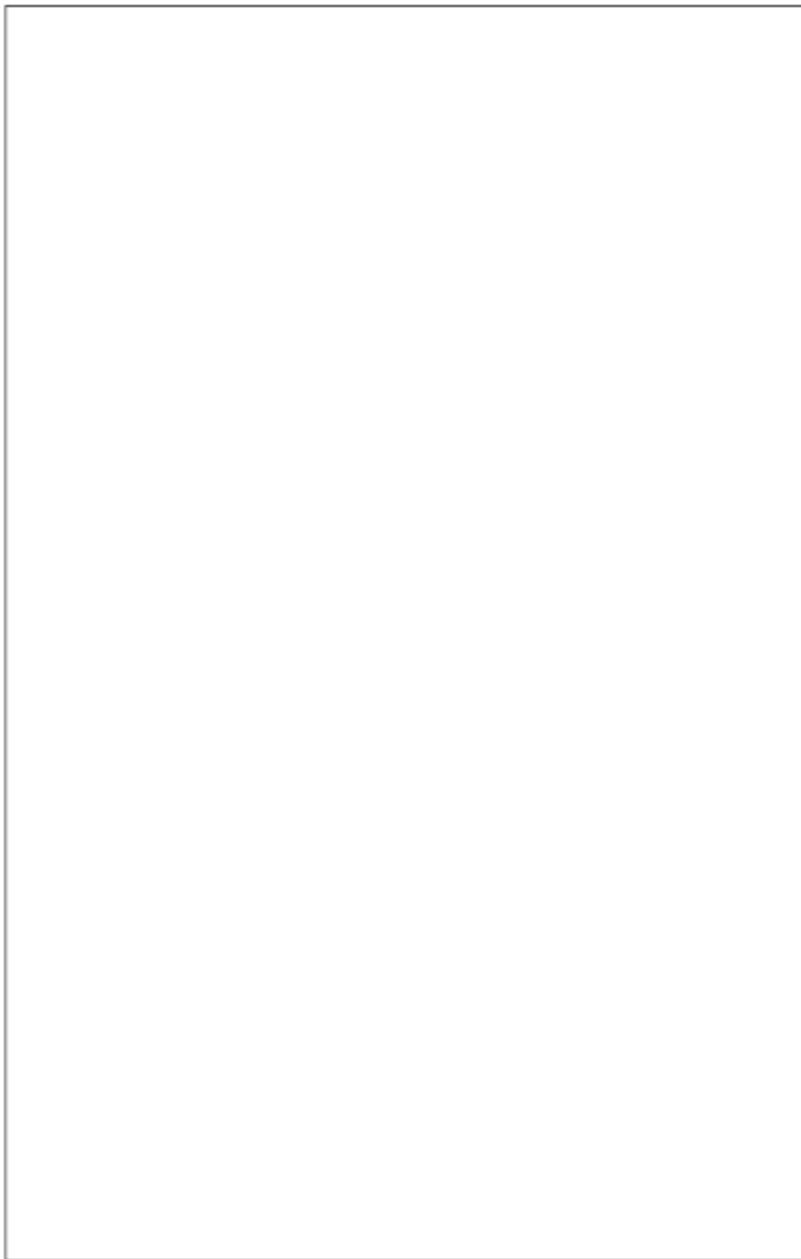
China's plans to develop new nuclear weapons to achieve force modernization is being complicated by the US proposal for a CTB. Informal CTB bilateral discussions have already started with formal negotiations scheduled for next year, and a CTB could be in place by mid-to-late 1990s. China is the only country of the declared nuclear weapons states that currently is not observing a proclaimed nuclear test moratorium; however, it is being pressured to join the testing moratorium. In addition to the United States, some 20 to 30 nations have demarched Beijing and expressed hopes that China not conduct the nuclear test now in preparation. [redacted]

China's ability to draw on proven warhead designs for weapons systems currently under development, or in the future, is limited because its nuclear weapons stockpile of 200 to 250 warheads is based on only a few designs. Moreover, it has limited nuclear test experience. China has conducted only 37 tests [redacted] while more than 1,000 tests have been conducted by the United States, about 750 by the Soviet Union, and nearly 200 by France. [redacted]

#### Fulfilling New Systems Requirements

China is pursuing the development of new warheads for several strategic systems.





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- Another Chinese system under development is the CSS-X-6 short-range ballistic missile—also known as the M-9. We project that China will begin to field nuclear-armed CSS-X-6's next year. China almost certainly has already developed the warhead for this system. Testing might be needed for final weaponization or for additional warhead options.
- [redacted] the Chinese want to introduce IHE into its nuclear weapons stockpile. Nuclear tests probably would be required to certify performance for each warhead type that use IHE. [redacted]

#### Nuclear Test Plans

China recently altered its nuclear testing plans for the next two years, possibly with an eye toward fulfilling near-term system requirements before pressure to join a CTB increases in the mid-to-late 1990s. [redacted] China planned to accelerate its test program and conduct seven nuclear tests before 1996. One test is scheduled for the early part of October 1993, and three tests are scheduled for 1994 and for 1995. [redacted]

We estimate the number of tests the Chinese need to conduct to fulfill their planned system requirements at two to eight (see table 2). [redacted]

[redacted] testing. Additional tests may be required if they have problems developing any of the warheads. It is also unclear whether a nuclear-armed cruise missile will use a previously developed warhead or require additional warhead development tests. [redacted]

Alternatively, some of the later tests may represent an effort to "pad" the schedule and create a workable bargaining position. In May, Chinese diplomats at the UN Conference on Disarmament in Geneva said that economic issues were more important to China than military requirements for nuclear testing and suggested some tests might be negotiable. [redacted]

Given the state of Chinese IHE developments, it is unlikely that IHE would be incorporated into the existing nuclear weapons stockpile. It is also not clear that IHE could be incorporated into the new warheads being developed prior to a CTB. [redacted] China negotiated several contracts with Russian firms to obtain IHE and related production equipment. While the Chinese have an indigenous IHE capability, their IHE apparently is not as safe or of the same quality as the Russian IHE. It will probably take the Chinese a year or two to assimilate the technology. [redacted]

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Table 2

**China's Nuclear Testing Requirements**

Because of their lack of experience with IHE, the Chinese would probably need an extensive nonnuclear testing program if they hope to incorporate it into nuclear weapons. One and possibly two development nuclear tests for each warhead type using IHE probably would also be needed.

IHE is less energetic than conventional high explosives and therefore more IHE is needed when replacing conventional explosives. IHE, being less sensitive to shock initiation, also would require a different detonation system. Modifying warheads on currently deployed Chinese systems to use IHE would probably require some changes to the warhead design and may not meet the size and mass constraints placed on the warhead. If used at all, we expect China will limit its use of IHE to new warhead designs.

**Chinese Views of a CTB**

Despite the possibility that China could satisfy national security needs before a CTB goes into effect, we expect China will bargain hard to retain its testing option after 1996. Recent Chinese statements linking negotiations for a comprehensive nuclear test ban treaty to other strategic arms control issues have been more explicit than past pronouncements but have built on longstanding Chinese positions:

- The major nuclear powers have the greatest responsibility to reduce their nuclear arsenals.
- China is a sovereign state that retains the right to test if necessary.

Just after President Clinton announced his CTB initiative in July, a Chinese Foreign Ministry spokesman reiterated the position that a complete prohibition of nuclear testing had to occur in the context of the thorough destruction of all nuclear weapons. He also noted that China has shown restraint in testing and has conducted fewer tests than the



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other nuclear weapons states. Earlier in the year, Beijing had started to distance itself from the CTB issue. In February the Chinese Ambassador to the Conference on Disarmament told the Perm-Five powers that China could not agree to testing moratorium or to CTB negotiations for the near future.

In late July,  Chinese Vice Foreign Minister Liu Huaqiu made points that amplified China's earlier position and raised objections to the effects of halting nuclear tests:

- China has always supported the notion of a CTB in the context of the complete prohibition and through destruction of all nuclear weapons.
- Negotiations on a CTB should run in parallel with talks on no first use against weapons states and no use against nonweapons states.
- A test ban treaty would freeze weapons development and would disadvantage China.

Beijing has not responded positively to the United States and other demarches regarding its current test preparations. China consistently has pointed out its restrained approach to nuclear testing and the small number of tests that it has conducted compared to the nuclear superpowers. Following US public disclosure on 20 September of the upcoming test, a Beijing-controlled newspaper in Hong Kong carried an article arguing that China should guard against outside interference in its efforts to develop nuclear weapons and that it should never slack off in the area of national defense.

#### Outlook

Joining a CTB in the mid-to-late 1990s will significantly impact China's ability to develop nuclear weapons for future systems. However, if the Chinese conduct the seven planned tests prior to a CTB, they should be able to complete the successful production of nuclear warheads for weapons systems currently under development.

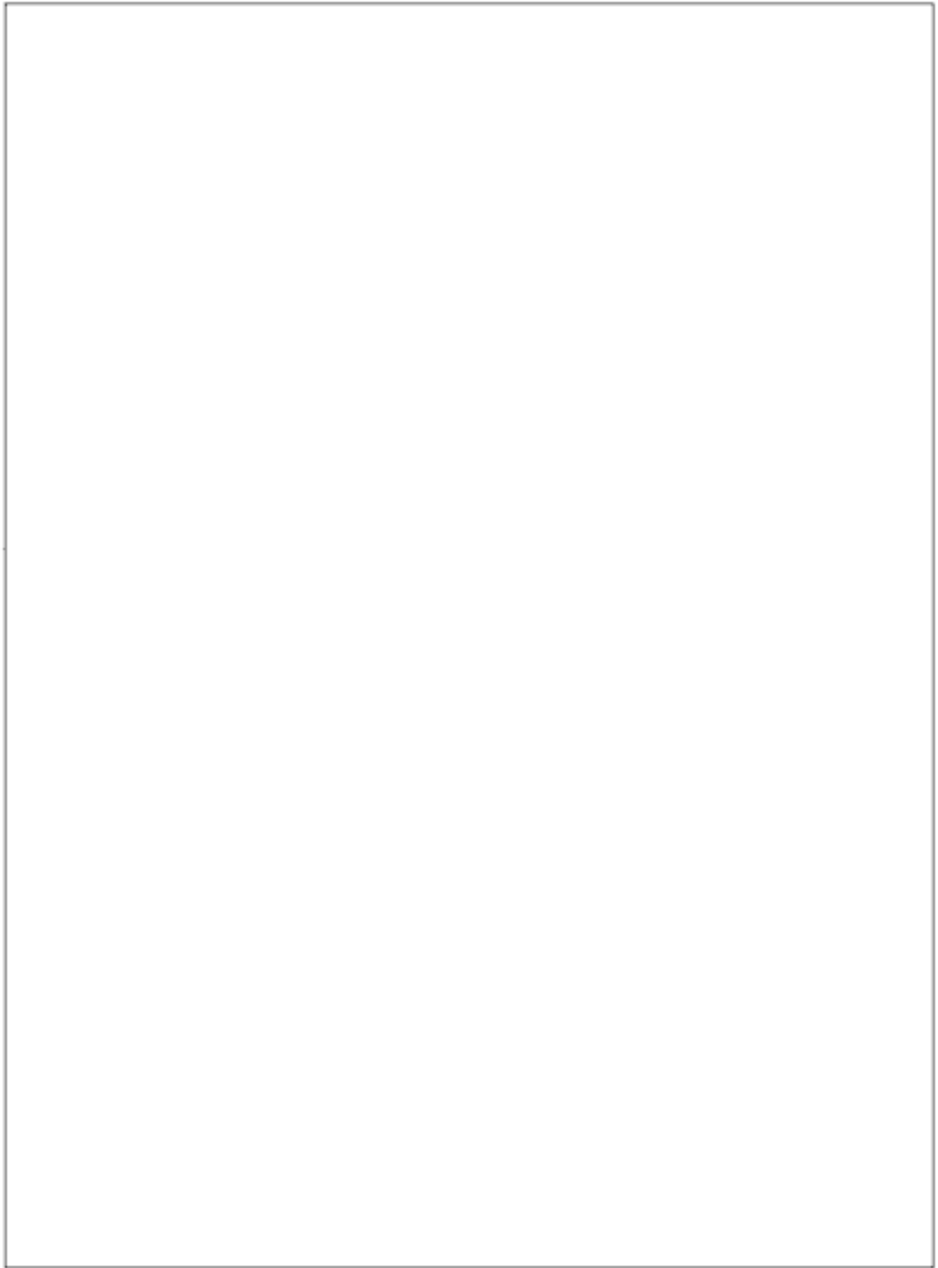
If the Chinese were to stop testing prior to completing most of the seven tests, they might not meet all their near-term warhead development requirements. If limited to only seven more tests, we believe that the Chinese would not place a high priority on incorporating IHE into their stockpile or developing inherently one-point safe primaries. In addition, if China stops nuclear testing, the confidence in its stockpile will probably degrade with time. Mechanical and material problems are likely to arise in the nuclear stockpile as the warheads age. Under a CTB, shrinkage in the overall knowledge base of qualified, experienced designers would accelerate, thereby making it more difficult to correct stockpile problems.

We expect that Beijing's diplomatic negotiations and public relations maneuvering will continue to emphasize linkage of a nuclear test ban to no first-use and the nuclear arms reduction obligations of the United States and the former Soviet Union. Raising such

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obstacles allows Beijing to buy time for working out a bargaining approach and creates leverage that will help to avoid restricting China's ability to develop new weapons. At the same time China will portray its own testing as limited in scope and beneficial in purpose. Well-connected Chinese think tank researchers sponsored by the Ministry of State Security have already suggested [redacted] that the international community would not be upset if China conducted a few tests and implied that the purpose of the Chinese tests was solely to improve weapons safety. [redacted]

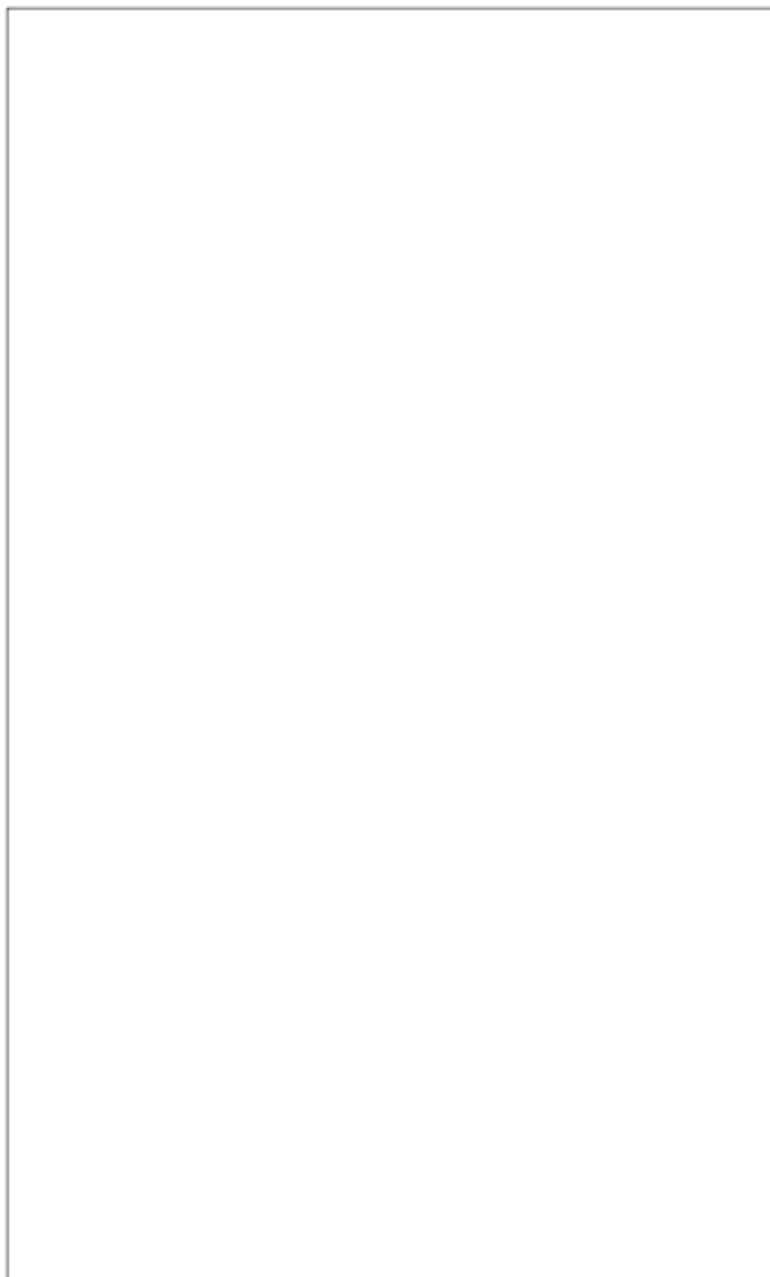
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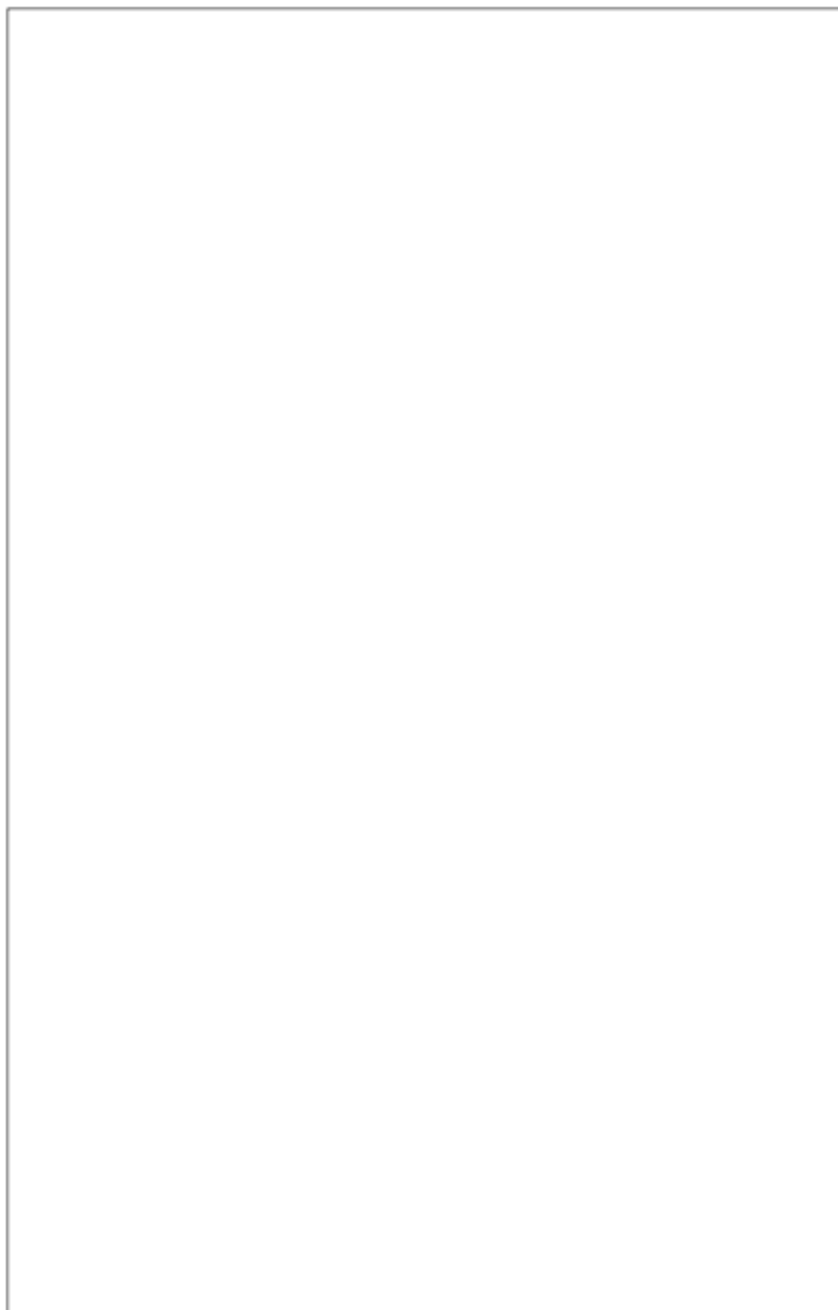


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