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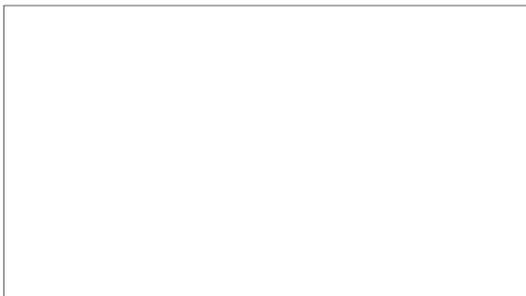
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COMMUNIST CHINA'S STRATEGIC MISSILE PROGRAM  
AND  
COMMUNIST CHINA'S NUCLEAR PROGRAM

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## Communist China's Strategic Missile Program

### Present Position

China has assigned a high national priority to the development of ballistic missile delivery systems during the past decade. [redacted]

[redacted] available evidence indicates that the Chinese have initially concentrated on the development of liquid-propellant systems in the medium-range and intercontinental ballistic missile categories. This program has evolved from assistance originally provided by the Soviets a decade ago.

It is probable that flight testing of an MRBM was essentially completed by the end of 1967 or early 1968. There have been some tentative indications of troop-training firings with the MRBM during the past year. However, there is as yet no firm evidence of actual deployment of the system.

[redacted] the MRBM is estimated to be capable of delivering a 3,000-3,500 pound reentry vehicle to a maximum range of about 900-1,000 nautical miles. Such a weapons system would provide adequate coverage of a significant number of Soviet targets as well as countries on China's periphery.

The Chinese first-generation ICBM has undoubtedly used the MRBM technology as a building block. This system could reach the flight-test stage in the relatively near future, initially involving booster tests to impact areas within China's borders. There are as yet no known preparations for long-range ICBM test firings, which would necessarily involve impact areas beyond Chinese boundaries. The most logical places for such areas lie in the Indian or Pacific Oceans, but Chinese intentions in this respect are not known. Assuming booster test firings begin by the end of 1969, the ICBM could conceivably reach an initial operational capability in late 1972; however, 1973 is more likely. This system probably will be relatively large, but capable of delivering a reentry vehicle weighing in excess of 5,000 pounds to ranges of more than 6,000 nautical miles.

There also are growing, but still tenuous indications

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that the Chinese have embarked upon a space program for the coming decade, probably involving liquid-propellant boosters. There also is evidence that second-generation strategic missile systems will employ composite solid propellants. Such missiles are unlikely to become operational before the mid-1970's, however.

#### Exploitation of Foreign Technology

China has been engaged for some years in an intensive effort to acquire foreign technical assistance necessary for a broad spectrum of scientific and engineering endeavors. The evidence indicates that the Chinese have had considerable success in obtaining hardware, materials, and associated technology in some areas having unique and significant applications in the development, testing, and production of strategic missile systems. Although the greater share of Chinese purchases of foreign technical equipment, including instrumentation and tooling, probably is required for general industrial applications, some of these purchases undoubtedly have increased significantly China's capabilities to support the overall missile effort.

Chinese exploitation of foreign assistance in these areas increased markedly beginning in 1965. Since then China has purchased, attempted to purchase, or indicated a serious interest in obtaining numerous items having direct or indirect missile applications. A few examples of these include: pulverizing equipment suitable for grinding solid fuel ingredients; ammonium perchlorate -- the principal use of which in large quantities is as an oxidizer in composite solid propellants; high-grade (98% purity) nitric acid and anhydrous hydrazine -- fairly good examples of storable liquid propellants; various types of vibration testing equipment -- including the purchase of what is probably the world's largest shake table; high-speed movie cameras; and sophisticated photographic cinetheodolites, the principal use of which is for missile range instrumentation.

The unstable conditions associated with the Cultural Revolution do not appear to have affected appreciably Chinese trade activity in such areas. Some of the other categories of imported goods have included research instruments, electronic components and monitoring equipment, semiconductor manufacturing equipment, computers, communications systems,

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photographic equipment, and precision machine tools and measuring instruments. This foreign assistance probably has been of substantial aid to the Chinese in reducing R&D leadtimes and freeing many of the limited supply of scarce human and technical resources for other productive tasks. The continuation of this type of activity in the midst of the political and economic turmoil in China suggests how highly the Chinese value its contribution to their advanced weapons programs.

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Communist China's Nuclear Program

Nuclear Materials

All of the U-235 used in Chinese nuclear tests to date probably has been produced in the gaseous diffusion plant at Lan-chou. No similar plant is known to exist in China. [REDACTED]

There is good evidence that there is a nuclear energy complex near Yumen. This complex is believed to include a large plutonium reactor and chemical separation facilities.

For the next several years, at least, the supply of Chinese fissionable materials will be limited to the output from the Lan-chou U-235 plant and the Yumen reactor. This output probably will be sufficient for their needs during this period.

Nuclear Power and Propulsion

There are no indications of Chinese intentions to develop a nuclear power reactor program at the present time. Some R&D may be underway on a marine nuclear propulsion program [REDACTED]

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