

China's Satellite Launch Program

~~(S)~~ China has an active space program serving both military and civilian functions, and is beginning to provide commercial launch services. Two space launch vehicles have been used to orbit up to three satellites annually, and more powerful boosters are under development.

- o ~~(S/NF/WH)~~ China currently uses two launch vehicles, the CSL-2 (Long March 2) and CSL-3 (Long March 3). The former can place about 2,600 kg into low Earth orbits, while the latter can place about 750 kg into geosynchronous orbit. China demonstrated the ability to orbit three scientific satellites with a single CSL-2 launch in 1981. The Long March 2 is the same liquid propellant booster used for the CSS-4 ICBM, while the Long March 3 adds a third stage using liquid oxygen and liquid hydrogen.
- o ~~(S/NF/WH)~~ The first launch of the Long March 4 is imminent. It will be the first space launch from Wuzhai Missile Test Center in Shansi Province. The Long March 4, though similar to the Long March 2, is longer and reportedly substantially redesigned. It will be attempting China's first launch into a 900 km altitude, sun-synchronous, polar orbit, carrying Beijing's first three-axis stabilized meteorological satellite, Fengyun-1.
- o ~~(S/NF/WH)~~ Other more powerful boosters--particularly variants of the Long March 3 with strap-on boosters or longer stages, and the Long March 2E--are said to be in development in order to enable Beijing to place much larger satellites into geostationary orbit. Though China says launches of the Long March 2E from Xichang will begin in 1990, the lack of construction makes that date questionable.

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~~(S/NP/WN)~~ Beijing indicated its desire to enter the international commercial space launch market before the 1986 failures of the space shuttle and the Ariane booster. It eagerly pressed its offers after those failures caused a shortage of commercial capacity.

- o ~~(S/NP/WN)~~ To date, Beijing's only launches for foreign clients have been two microgravity experiments for France and West Germany. Various negotiations indicate China has a firm market niche in the recoverable payload business and can expect to fly numerous small secondary payloads on CSL-2 boosters. No customers have yet contracted for use of an entire satellite for recoverable experiments, though Beijing has offered them at below-market prices. Besides recoverable payloads, the Swedes may have Chinese CSL-2s orbit--as secondary payloads--two small, low-Earth-orbit, store-dump MailStar comsats.
- o ~~(S/NP/WN)~~ Beijing's primary goal in the launch services market is to gain a modest share of the lucrative and prestigious market for launching geosynchronous communications satellites. China recently has been selected by the Chinese-British consortium Asiasat to orbit the US-made Westar 6 comsat, and by the Australian firm Aussat to launch two US-made Aussat B comsats. The former can use the Long March 3, while the latter will require the Long March 2E.
- o ~~(S/NP/WN)~~ US approval of export licenses for the satellites is currently a major policy issue. China believes it has satisfied US concern over technology transfer by assuring that satellites will remain under complete control of their foreign clients' personnel, and by construction--now externally complete--of separate facilities at Xichang where foreign technicians can prepare satellites for launch. US satellite manufacturers are satisfied with these arrangements; however, US booster manufacturers--whose sales will be reduced because Chinese prices for launch services are about 30% lower--are urging export license denial.
- o ~~(S/NP/WN)~~ To reduce US booster manufacturers' concern over loss of market share, Beijing recently said it would limit its geosynchronous comsat launches to four a year. How long such a self-imposed limitation would last is unknown, but China probably will not be capable of exceeding four commercial geosynchronous comsat launches annually until the mid-1990s.

- o ~~(S/NF/WH)~~ Beijing believes it had received clear signals from the US--including Secretary Weinberger during his visit to Xichang--that export licenses would be approved if the technology transfer concerns were allayed. The Chinese believe they have done so. Should the US decide to bar satellite exports to China, Beijing will be bitterly disappointed. China would continue to seek to launch non-US-made satellites, and almost certainly would continue to pressure the US to reverse its decision.
- o ~~(S/NF/WH)~~ An agreement signed between China and Brazil in early July calls for construction and launch of two 1,300 kg Earth Resources Satellites, with China contributing 70% of the funding and Brazil 30%. The first is to be launched by a Long March 4 from Wuzhai in 1992, and the second, in 1994, might be launched from Brazil by either a Long March 4 or a Brazilian-made booster based on Chinese design. This agreement could foreshadow others between China and Third World countries.
- o ~~(S/NF/WH)~~ Finally, China has contracted with the West German firm Messerschmitt-Boelkow-Blohm to provide components and technical assistance in the construction of the DFH-3, a new type of geosynchronous domestic communications and television broadcast satellite. China will orbit DFH-3's with the Long March 3 for itself, and the satellites and launch service will be offered for sale to Third World countries.

~~(S)~~ Outlook. China's satellite launch rate is expected to remain low, but could soon rise to four to six annually. Photoreconnaissance satellites collecting both intelligence and Earth resources imagery may continue to comprise about half of China's launches, and Beijing likely will use the Long March 4 to place longer duration photoreconnaissance satellites, as well as meteorological platforms, into polar sun-synchronous orbits. One to two comsat launches annually are likely--including commercial launches if the US approves export licenses--with that number increasing in the 1990s when the Long March 2E and perhaps other boosters enable the launch of larger comsats for China and foreign customers. Launch of a geostationary meteorological satellite, once planned for 1985, can be expected in the early 1990s. Manned launches quite likely will begin in the 1990s, and China may seek to participate in the US/International space station.