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Central Intelligence Agency



Washington, D.C. 20505

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DIRECTORATE OF INTELLIGENCE

8 April 1986

**China's Search For Air Defense:
On the Verge of Foreign Acquisitions?**

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SUMMARY

Over the past decade, China's defense industries have failed in efforts to develop modern air defense systems for the Army and Navy. China has successfully reverse-engineered air defense systems in only two cases -- the short-range SA-7 missile and a 30-mm rapid-fire gun. Despite this poor showing, powerful industry officials have acquired advanced Western systems that they believe they can copy and have resisted Army and Navy efforts to buy air defense systems from the West. We believe severe budgetary constraints and a misplaced confidence among senior decisionmakers in the ability of Chinese engineers to design viable indigenous weapons have been major impediments to air defense modernization.

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_____ military end-users in China may be overcoming this opposition and have received funding for selected air defense purchases from the West. If so, we believe China is more likely to turn to Israel or Western Europe than to the United States.

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This memorandum was prepared by _____ Office of East Asian Analysis _____

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Information available as of 31 March 1986 was used in its preparation. Comments and queries are welcome and may be directed to the Chief, Defense Issues Branch, China Division, OEA, _____

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[Redacted]

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China's Questionable Air Defense Capability

Chinese strategic land-based air defense¹ consists of a mixture of medium-to-high altitude, surface-to-air missile (SAM) sites and anti-aircraft artillery (AAA) based on 1950s Soviet designs; the mix is relatively ineffective against modern high-speed aircraft such as the Soviet Backfire bomber. [Redacted]

[Redacted] and these are concentrated around urban centers. In a major military conflict, particularly with the Soviet Union, these cities would be highly vulnerable targets. [Redacted]

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China's tactical air defense capability is one of the weakest links in its conventional defenses. China relies exclusively on short-range, man-portable SAMs and towed AAA. These systems are most effective at intimidating opposing pilots --disrupting their attacks--but have little chance of destroying low-level, high speed, ground attack aircraft (see box). In our judgment, rectifying this shortfall is essential if the Chinese are to become capable of blunting a Soviet land incursion into China. Without air superiority, China's maneuver armies must have mobile SAM and AAA systems capable of detecting and downing high-performance aircraft at ranges beyond the limits of shoulder-launched missiles or optically sighted AAA. [Redacted]

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Without the ability to protect its major combatants from modern, offensive weapon systems, the Chinese fleet is unlikely to survive attacks by Soviet aircraft, particularly those equipped with stand-off missiles. Similarly, if the Navy is going to project power beyond its coastal waters, it must be able to protect large surface task groups. [Redacted]

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Limited Success Through Reverse-Engineering

Beijing has acquired several foreign air defense systems; it has reverse-engineered and is now producing versions of two of the simpler, short-range Soviet designed systems. In the mid-1970s, [Redacted]

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[Redacted] By 1982, the Chinese were offering the system for export.

[Redacted]

[Redacted] The other system is the Soviet AK-230 air defense gun, which China obtained as part of the equipment on patrol boats purchased from the Soviet Union. Although a 25-year-old system, this 30-mm gun provides Chinese surface ships with their first radar-controlled air defense gun, giving them some capability to defend against antiship missiles. [Redacted]

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¹ This typescript focuses on China's ground and sea based air defense and does not address Chinese deficiencies in fighter interceptor aircraft. [Redacted]

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Figure 1
Short-Range SAM



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China's Short-Range SAM

The Chinese shoulder-fired surface-to-air missile system, designated the Hongying 5, is a copy of the Soviet SA-7 Grail. It uses infrared guidance and is effective only at low altitudes against helicopters and slow flying aircraft. [Redacted]

[Redacted]

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We do not know the full extent of HY-5 deployment to Chinese units, but, if deployed in substantial quantities, this system could contribute significantly to defending the ground forces. Its psychological effect on pilots and the resulting disruption of offensive low-level air attack is far greater than its "kill rate." During the 1973 Arab/Israeli war, for example, the Arabs fired approximately 5,000 SA-7 missiles but shot down only two aircraft and damaged 26 others.

[Redacted]

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The Chinese have had little success in reverse-engineering other systems. China acquired radar-guided US Sparrow air-to-air missiles from Vietnam in the late 1960s, and have used them to try to develop a modern radar-guided surface-to-air missile.

[Redacted] a mobile low-to-medium-altitude SAM, which we designated the CSA-X-2, [Redacted] has been

mounted on tracked vehicles and trucks and tested aboard a Chinese Jiangdong frigate. In January 1986, Beijing announced that this SAM, with the Chinese designator HQ-61, was available for export. However, lack of deployment with the Chinese forces suggests the SAM is not performing well and the Chinese have often offered systems still in development for export. [Redacted]

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Beijing's most ambitious reverse-engineering efforts appear to be its work with the French-designed Crotale missile system, part of a cooperative development effort with Pakistan. The Crotale is a highly mobile, low-altitude SAM that achieves all-weather interception of low-level targets by using sophisticated automatic data processing.

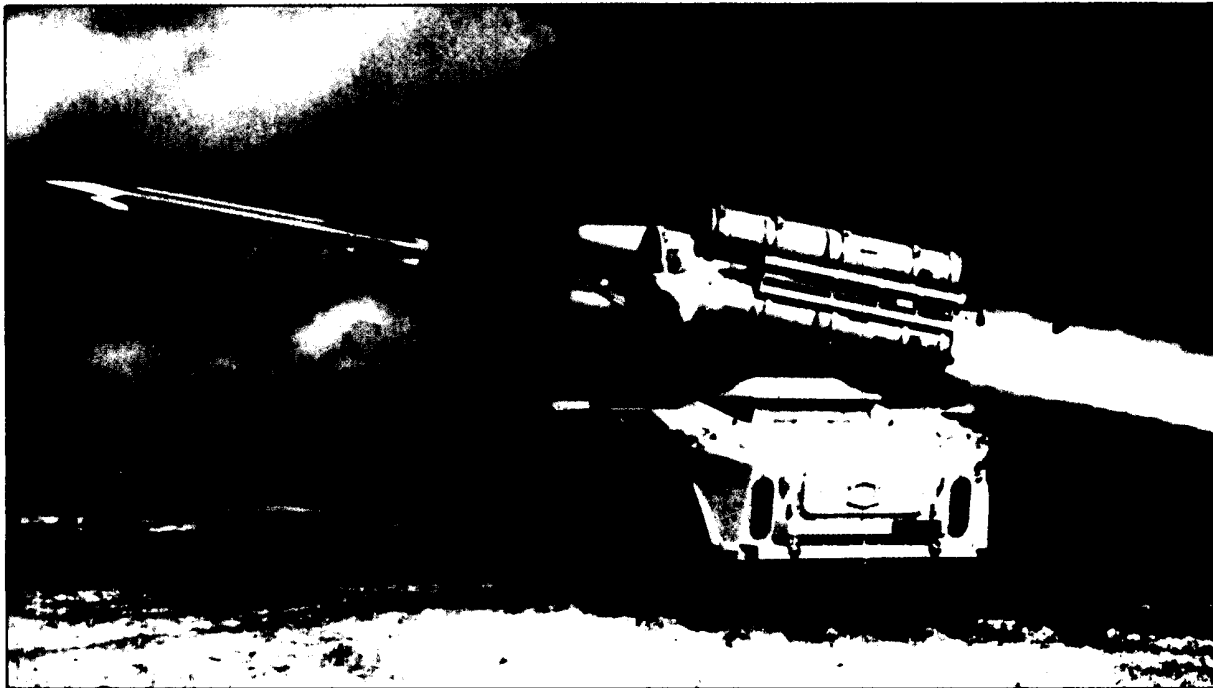
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Figure 2
Crotale SAM



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China's work with the Crotale, however, may not be going well. [Redacted]
[Redacted] in 1985 admitted to having problems
mastering the technology and asked the French manufacturer for help. The French were
"not amused" and refused. [Redacted]
[Redacted] to purchase the naval version of the same missile system also
indicate the Chinese are having problems reverse-engineering the system. [Redacted]
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China's Close Encounters With Western Air Defense

Since 1979, Beijing has flirted with buying air defense weapons from the West but has always stopped short. In late 1982, the Chinese Navy signed a tentative contract to buy the British Sea Dart missile but was thwarted by the Defense Minister--whose previous post was director of weapons research and development--and was not allowed to accept the deal (see box). In 1984, the Navy was prepared to buy the Phalanx 20-mm close-in air defense system from the United States.

[Redacted]

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The pressure to purchase an indigenous system--even if it is inferior--has been intense on the Chinese military in large part because of severe budgetary constraints and the drive for self-sufficiency.

[Redacted] the Politburo has set an extremely restrictive list of weapons that may be acquired from abroad because of "very tight" budgetary restrictions on defense spending. Moreover, Beijing is adamant that it will never again become dependent--as it did in the 1950s with the Soviet Union--on a foreign power for defense modernization.

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The Sea Dart Affair

In late 1982, after three years of erratic negotiations [Redacted] [Redacted] the United Kingdom contracted to upgrade two Chinese Luda-class destroyers. The upgrade was to include Sea Dart surface-to-air missiles. The contract contained a 60-day ratification clause, which Beijing allowed to expire.

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In early 1983 [Redacted] Defense Minister Zhang Aiping blocked the purchase of the missile system, as well as other weapon systems under consideration, "angering" naval leaders.

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The cancellation had all the earmarks of a successful defense industry maneuver, blocking the import of finished weapons and maintaining the sole-source status of Chinese defense plants. [Redacted] Zhang canceled the missile purchase because he considered British technology obsolete and, [Redacted] because of the Chinese perception of poor performance by Sea Dart in the Falkland Islands conflict.

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China's desire for self-reliance and budgetary constraint only partly explain Beijing's reluctance to purchase finished air defense systems from abroad. Indeed, the recent Chinese willingness to sign contracts for Israeli tank gun improvements, US, French, and Soviet helicopters and US avionics packages for the F-8 fighter prove that Beijing is prepared to obtain defense systems from abroad once it has been convinced that China cannot build those systems without foreign assistance. [Redacted]

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There are signs, however, that the Chinese defense industries believe they can modernize China's air defense and that they have argued successfully against foreign procurement. The Ministry of Astronautics, for example, can cite success in producing not only tactical missiles such as the SA-7 copy, the new Exocet-like missile² and China's first air-to-surface missile; but also strategic nuclear weapons such as China's full range ICBM and a submarine launch ballistic missile. Despite the Navy's obvious interest in buying at least a few missiles for its surface warships, the 1982 decision not to buy the Sea Dart suggests that the defense ministries have exercised considerable influence--through senior leaders such as Zhang Aiping-- over such decisions and has blocked even high-priority purchases. [Redacted]

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A Brighter Outlook for Imports

Beijing, however, may be approaching a point where some foreign purchases of air defense systems will be made. [Redacted]

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[Redacted] This would be the first foreign missile purchase by the Chinese Navy and the French expect the Chinese to buy at least two or three more systems.

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Unless the Chinese defense industry makes a breakthrough with the Crotale reverse-engineering project or the HQ-61 SAM, Beijing's defense ministries may be forced to lift their objections to foreign imports of air defense missiles. We believe the Navy is likely to press hard for the purchase of the Crotale because it is beginning production of new guided missile and antisubmarine warfare frigates that desperately need modern air defenses. The Army, for its part, is deploying mechanized infantry divisions in the northeast which, without modern air defenses, are highly vulnerable to Soviet air attack. [Redacted]

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Both the Army and Navy can cite recent successes in developing coproduction arrangements to strengthen their cases. China's tank improvement program is proceeding well with Israeli assistance, and Beijing may have already signed a contract³ with Pakistan to use this technology to improve Islamabad's 1,000 Chinese-made Type 59 tanks. [Redacted]

[Redacted]

and, given the success of other Israeli programs, the Navy may well argue for acceptance of the offer. The Navy might also argue that Chinese ships could well become more marketable abroad if they have modern air defense systems. [Redacted]

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If the Chinese decide to buy foreign air defense systems, they are unlikely to acquire one from the United States. Although Beijing has shown an interest in the production technology for the I-HAWK air defense missile, the Chinese military is convinced that it lacks the mobility China needs. [Redacted]

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[Redacted] is interested in advanced systems such as the Stinger man-portable SAM, the Standard shipboard SAM, and the Patriot medium-to-high-altitude SAM, but knows that Washington is not prepared to sell. We therefore believe that China is more likely to turn to Western Europe or Israel where higher levels of technology are available.

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