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China's New Westernized F-8 Fighter: US Role and Implications for Regional Air Balance [redacted]

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An Intelligence Assessment

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December 1986

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China's New Westernized F-8 Fighter: US Role and Implications for Regional Air Balance

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An Intelligence Assessment

This paper was prepared by Office of East Asian Analysis, and Office of Scientific and Weapons Research. Comments and queries are welcome and may be directed to the Chief, China Division, OEA,

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China's New Westernized F-8 Fighter: US Role and Implications for Regional Air Balance

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Key Judgments

Information available as of 3 November 1986 was used in this report.

China's military leaders have recognized for some time that their lack of a modern all-weather, day/night fighter-interceptor has left China without an effective deterrent to the increasingly sophisticated Soviet air forces in the Far East. In an attempt to meet this Soviet air challenge—or at least not fall too much further behind over the next decade—Beijing has decided to upgrade its indigenous twin-engine F-8 Finback fighter, 25X1 25X1 The Chinese plan to convert this 1960s-vintage daytime fighter into a modern, long-range, high- and low-altitude interceptor, designated the F-8-2. Two versions of the F-8-2 are under development, one with advanced Western technology and the other with domestically built radars, missiles, and engines:

- For the Western version, China on 30 October 1986 signed a Foreign Military Sales (FMS) purchase agreement for a US-integrated avionics system and has signed a tentative contract—pending COCOM approval—for an Italian radar-guided, air-to-air missile, the Aspide. The Chinese have also expressed interest in US- or Israeli-produced engines.

- The domestic F-8-2 may eventually carry a new Chinese radar 25X1 25X1

By the mid-1990s, Beijing should have at least 50 F-8-2 long-range interceptors far superior to anything in its present inventory. The all-weather "Westernized F-8-2," for example, will be able to distinguish low-flying bombers from ground clutter and destroy these targets, and should be able to destroy aircraft coming head-on up to 46 kilometers away. Current Chinese aircraft, by contrast, have a maximum missile-firing range of only 15 kilometers, can engage targets only from behind, and are limited to clear weather. 25X1

The F-8-2 also will have the potential to operate as a multimission fighter with credible ground attack/strike capability. By relatively simple modifications to the US fire-control system and the fitting of a laser designator, the F-8-2 could be armed with antiradiation missiles to destroy defending ground radars, incapacitating surface-to-air missile batteries. 25X1

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We judge that the F-8-2 is more likely to affect the air balance between China and Vietnam than that between China and the Soviet Union or Taiwan:

- US avionics and Aspide missiles would make the fighter superior to the Soviet MIG-23 Flogger. But the F-8-2 will be no match for the advanced MIG-29s and SU-27s that will become the mainstays of Soviet airpower in the Far East by the time F-8-2s are deployed in numbers in the 1990s.

- We believe Beijing already has the ability to gain command of the air over Taiwan because its Air Force greatly outnumbers Taiwan's. The F-8-2s would erode the qualitative advantage of Taiwan's F-5E fighters, but Taipei's planned Indigenous Defense Fighter (IDF) would offset many of these gains.

- Vietnam in the mid-1990s might face a force of Chinese F-8-2s that are more advanced than its own fighters and a Chinese Air Force more prepared than today's for deep strikes into Vietnam. The shape of the Sino-Vietnamese air balance, therefore, is likely to depend heavily on the Soviet Union's willingness to provide Hanoi with a more modern fighter than its current MIG-21s and with more sophisticated ground-based air defense systems.

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Although the Chinese have signed a letter of agreement for the US avionics package, we believe tough negotiations lie ahead. The Chinese, in our judgment, will again press for the transfer of technology in addition to the purchase of 55 radar packages. They also will seek the production technology for the avionics and missiles necessary for an air-to-ground-attack capability.

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The technology transfer issue notwithstanding, Beijing is pleased with the avionics program, but is concerned that Washington might use the F-8 program to justify new arms sales to Taiwan. Taipei, for its part, will almost certainly push more vigorously for the Patriot air defense system, advanced air-to-air missiles, and F-16 or F-20 fighters.

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We believe the sale of the avionics packages to Beijing will serve as a model for future FMS sales, such as a Mark 46 torpedo coproduction agreement, and will increase US influence with the Chinese military. Indeed, Military Commission Chairman Deng Xiaoping has already signaled Beijing's interest in an even wider arms technology relationship by asking about the possibility of US military credits or commercial assistance for weapon purchases during Secretary Weinberger's visit to Beijing in October 1986. Moreover, the United States will gain its first real access to China's defense plants and operational air units through the Defense Department officials and contractors on hand to install the avionics packages and provide maintenance training.

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F-8-1: A Problem Aircraft

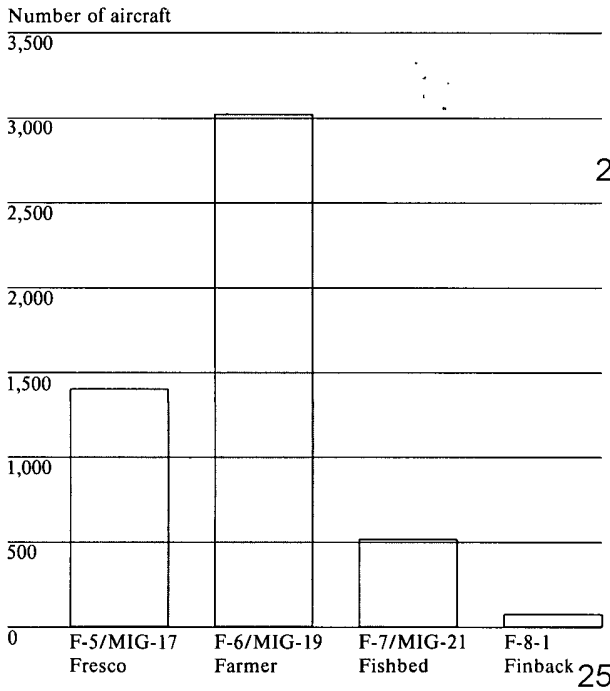
Beijing's attempts over the past three decades to build a twin-engined, high-altitude, high-speed interceptor—without foreign assistance—have largely failed. The Chinese began work on the F-8 Finback, which is similar to the 1961 Flipper—a Mikoyan design that Moscow never put into production—in the mid-1960s soon after the Sino-Soviet split. The first F-8 in the early 1970s, but even at that time-

China's senior leaders were skeptical that the aircraft industry was capable of building a modern fighter.

In fact, unsatisfactory performance prevented even the prototype of this aircraft from entering service with the Chinese Air Force until 1982, almost two decades after the project began. The Chinese have produced only 73 of the F-8-1 aircraft at the Shenyang aircraft plant.

We believe these were only intended to familiarize the Air Force and Naval Air Force with the aircraft.

Figure 2
China's Fighter Interceptors, 1986



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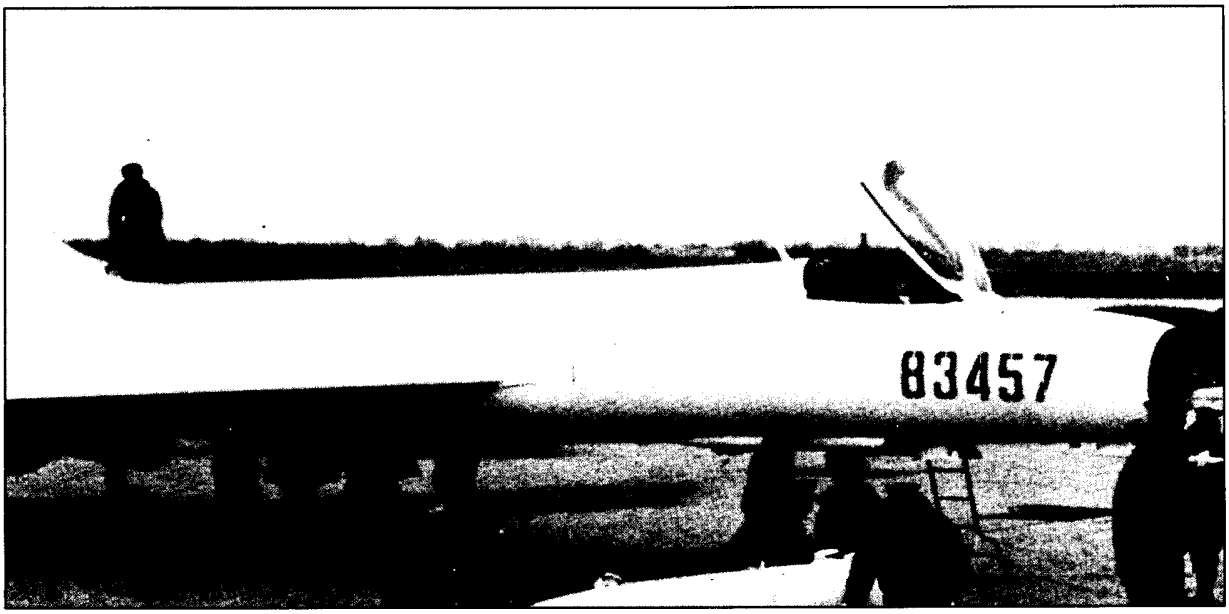
Problems cited by the Chinese with the F-8-1s include faulty avionics, poor radars, underpowered and short-lived engines, and outdated weapon systems:

- The aircraft has no inertial navigation system, no head-up display, and range-only radar based on a

Figure 3
F-8-1 Fighter With WP-7 Engines and Nose Air Intake



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Soviet system of the late 1950s that searches only to approximately 10 kilometers.

- The F-8-1's engine—the Wopen-7A (WP-7A), which is based on the Soviet-designed R11F engine of the early 1960s—must be overhauled after the first 300 hours of operation and discarded after another 300 hours,

- The F-8-1, with the low thrust-to-weight WP-7A, is markedly underpowered compared with the latest US and Soviet fighters and, therefore, is significantly less maneuverable.

- The F-8-1 is armed with the unsophisticated and short-range PL-2 infrared-guided air-to-air missile, which can only be fired from behind the enemy aircraft at ranges less than 7 kilometers in clear weather.

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If the Chinese are to develop a credible air defense against the Soviet bomber force, Beijing needs all-weather, day/night fighter-interceptors with look-down/shootdown capability. But China's air defense inventory is largely composed of F-5 (MIG-17) Fresco, F-6 (MIG-19) Farmer, and F-7 (MIG-21) Fishbed daylight, clear-weather fighters incapable of meeting

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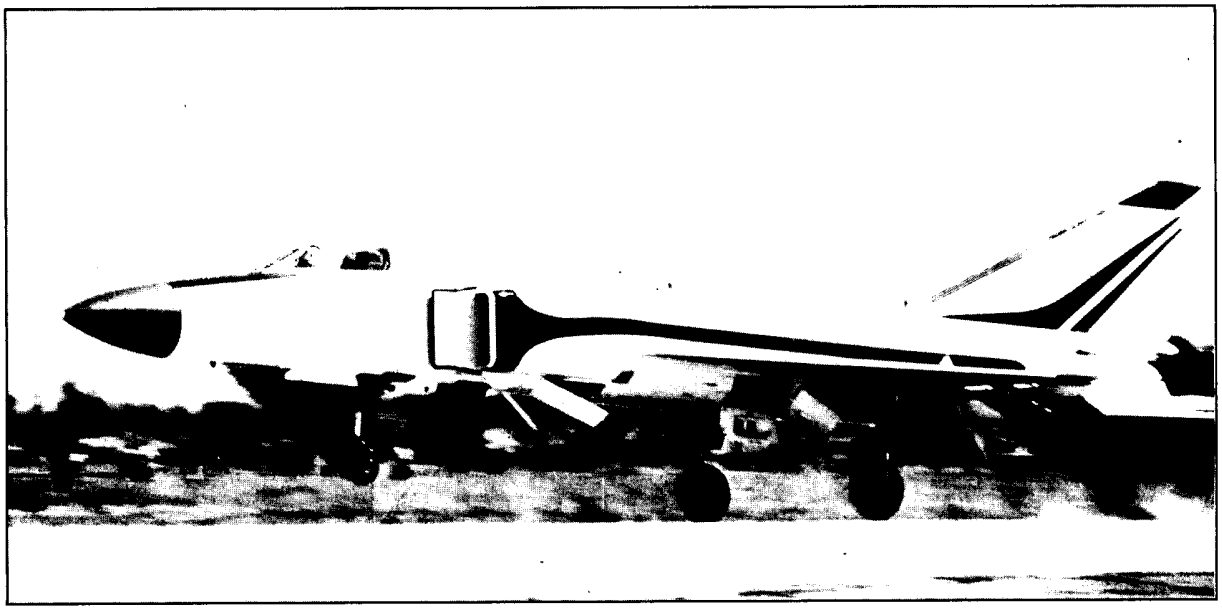
Figure 4
The F-8-2 With Type 204 Radar, WP-13 Engines, and Side Air Intakes



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the modern bomber threat.[1] With its flaws, the F-8-1 is simply another clear-weather fighter in which the pilot must acquire targets visually. The deployment of radars with terrain-clearance features [2] gives today's Soviet bombers the ability to penetrate at low altitudes and high speeds, allowing them to avoid detection and interception by high-flying F-8-1s with radars unable to distinguish low-flying targets from ground clutter.

[2] A terrain-clearance radar mode provides information to the pilot enabling him to maneuver around topographical obstructions in his flight path.

Revamping the F-8

The Chinese, recognizing that the utility of the F-8 in its present configuration is low, are on a two-tracked course of domestic and foreign upgrades to make the F-8 an all-weather, day/night interceptor. To allow the fitting of the larger, more sophisticated air-intercept radars—crucial to lookdown/shootdown capability—and all-weather electronics systems, Chinese engineers have enclosed the aircraft's nose and added side air intakes.

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five prototypes of the new F-8, designated the F-8-2 by the

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Chinese, have been built for flight-testing while Beijing negotiates for Western add-ons and designs new indigenous components.

Seeking Foreign Assistance

Cognizant that its defense industries were sorely deficient, the Chinese Air Force in early 1984 sought US assistance, primarily to improve the avionics on the F-8. After extended negotiations, the Chinese on 30 October 1986 signed a contract for 55 US integrated avionics system kits—50 for installation in the F-8-2s and five for spare parts—for approximately $500 million under a Foreign Military Sales (FMS) agreement. Under the proposed terms, the US avionics package will provide the Chinese markedly enhanced capabilities:

- The US pulsed Doppler radar will enable the F-8-2 to detect a target up to 65 kilometers away and track it up to 46 kilometers away—doubling the capabilities of China's best current radar, the Type 204.
- The radar also will give the Chinese their first all-aspect attack capability against low-flying targets. The radar in its lookdown mode can differentiate targets from ground clutter 37 kilometers away.
- And the head-up display, fire-control computer, and inertial navigation system are all new capabilities not found on the F-8-1.

If installation of the avionics packages goes as scheduled, the first F-8-2s with the US upgrade should be ready to fly in the early 1990s.

The other critical improvement Beijing is seeking from the West is a beyond-visual-range air-to-air missile. in three stages: initial purchase of seven missiles for compatibility testing, outright purchase of 1,500 more missiles, and eventual acquisition of production technology. China, however, is still awaiting approval of the purchase by the Coordinating Committee for Multilateral Export Controls (COCOM). Japan has not cast its vote on the purchase, citing fears that China could gain a power projection capability with the acquisition of beyond-visual-range missiles. 25X1 25X1

The Aspide is a potent all-aspect, all-weather missile capable of destroying aircraft flying at high altitude or at very low altitude. Essentially an Italian version of the US-built AIM-7M Sparrow, Aspide provides a maximum head-on range of 57 kilometers and if mated to the US radar would be able to hit targets up to 46 kilometers away. China's infrared- and radar-guided missiles are estimated to have ranges up to 15 kilometers. They are, therefore, limited to close-in combat engagements, where the F-8's lack of maneuverability—compared with current state-of-the-art fighters—makes it extremely vulnerable to the most modern Soviet fighters.[3] 25X1

To power the F-8-2, China has expressed interest in the GE-404 engine. An F-8 using the GE-404 would have a significantly higher thrust-to-weight (T/W) ratio than an F-8 with WP-7A engines—1.2 for the GE-404 versus 1.0 for the WP-7A. The increased T/W would give the aircraft greater sustained turn performance, an improved rate of climb, and better acceleration—all valuable in air combat maneuvering. China initiated discussions two years ago with General Electric officials, 25X1 but may try to acquire the 25X1 US engine through the Pakistani back door. and refit them with 25X1 GE-404 engines. Beijing may hope that US-sanctioned Chinese involvement—by the building of the

[3] The Chinese will probably arm the F-8-2 with short-range Israeli Python 3 IR-guided missiles, in addition to Aspide missiles, because fighters in a squadron often carry a mix of weapons. 25X1 The all-aspect Python 3—designated the PL-8 in China—has a 15-kilometer range and has performance characteristics similar to those of the US AIM-9L Sidewinder missile. 25X1 25X1 25X1 25X1

F-7M airframes with GE-404 engine mounts—will lead to a relaxation of US control on the technology. Alternately, Beijing may believe, on the basis of its close military ties, that Islamabad will illicitly pass the GE-404 to China as it has done with French antiship and air-to-air missiles.

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China has also looked at the Pratt & Whitney 1117, a lower thrust derivative of the F-100, and the Israeli-produced J79-GE-17 to power the F-8-2. For reasons of power and compatibility, however, we believe the GE-404 is Beijing's first choice. The GE-404 is lighter and, although its smaller size would necessitate some modifications to the inlet and nozzle ducts on the aircraft, it would fit better in the F-8-2 airframe than either the PW-1117 or J79-GE-17 engine. Moreover, the fuel consumption of the GE-404 is significantly lower than that of the older J79. Although the J79 engine has performed well on the Kfir fighter and Israel has become an important source of military equipment for China in recent years, Beijing would probably prefer the newer GE-404 engine.

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The Domestic Upgrades

Although Beijing appears committed to US and Italian upgrades to the F-8 aircraft, the Chinese have by no means given up on indigenous programs to improve the fighter. The proposed US sale of avionics packages contains no provision for China's acquisition of the production technology. Thus, Beijing is faced with the prospect of continuing to buy the expensive radars outright or develop a pulsed Doppler radar of its own. According to a brochure acquired at the Farnborough Air Show in early September and published by China's aircraft industry, China has developed a new radar, designated the JL-7, which is fairly sophisticated. Although probably lacking a lookdown/shootdown capability, the radar reportedly can detect a target 29 kilometers away and track it up to 16 kilometers away.

The Chinese could use this radar with the Aspide missile, giving them a beyond-visual-range capability on the "non-Americanized" F-8-2s, but only if the missile was modified to operate on the radar's frequency.

China may also choose to power at least some of its F-8-2s with WP-13 engines.

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The WP-13, however, is essentially Soviet technology of the 1960s.

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Why Modernize the F-8?

Despite its flaws, the F-8 fighter interceptor is Beijing's only option if it wishes to deploy an indigenous fighter with an all-weather capability, beyond-visual-range missiles, and a lookdown/shootdown capability

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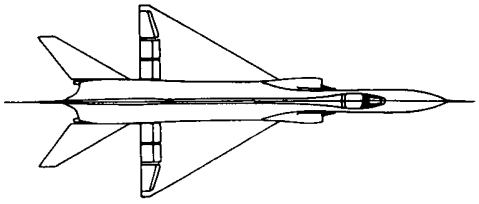
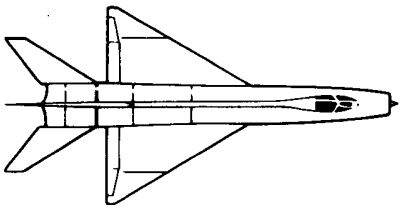
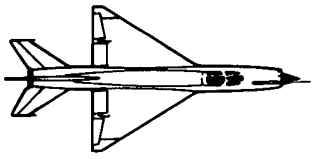
Figure 5
F-8 Finback and F-7 Fishbed Size Comparison

	Operational Radius[a]	Maximum Speed	Guns	Missiles	Radar
F-8-2 Finback B 	800-900 km	Mach 2.2	2 23-mm cannons	4 infrared guided or semiactive radar guided	Search and track
F-8-1 Finback A 	850 km	Mach 2.3	2 30-mm cannons	4 infrared guided	Range only
F-7 Fishbed C 	690 km	Mach 2.0	2 30-mm cannons	2 infrared guided	Range only

[a] The radius given is for a mission flown mostly at high altitudes at subsonic speeds.

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before the mid-1990s. China's F-7 fighter—although a good clear-weather, short-range fighter—in its present configuration cannot carry the large nose radar needed to guide medium-range radar-guided missiles to target.

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Thus, Beijing views the F-8-2 as China's primary long-range, high- and low-altitude fighter interceptor for the next decade.

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Why Is China Not Buying a Foreign Fighter?

Party General Secretary Hu Yaobang publicly stated in August 1982 that China was ready to buy and coproduce French Mirage fighters, but no contract was signed.

We believe that, because an imminent threat is not perceived, and because of national pride and cost, Chinese purchase of a foreign fighter such as the Mirage 2000 is unlikely. A widely publicized Military Commission meeting in May 1985 codified the strategic judgment that China has a "window of security" until the end of this century to revamp its military forces before a major Soviet invasion is even a possibility. Moreover, Beijing's stated goal is self-sufficiency in weapons development and production, and the Chinese are wary, once again, of depending on a foreign country—as they did with the Soviets in the 1950s—for defense modernization. In addition, Beijing holds insufficient foreign exchange to finance the bulk purchase of aircraft and prefers either limited imports or technological cooperation to enhance its indigenous systems.

Table 3
The Soviet Air Threat Along China's Border [a]

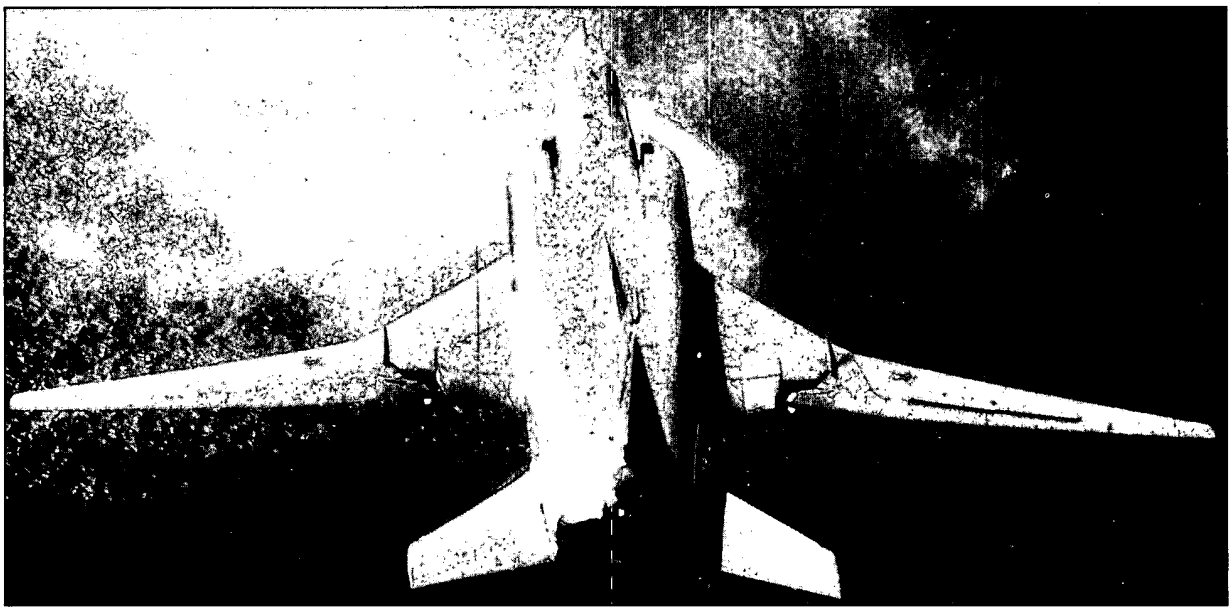
	1986	1995 Projections
Fighters and interceptors		
Fiddler (TU-28P)	50	0
Fishbed (MIG-21)	90	0
Flagon (SU-15)	140	0
Flanker (SU-27)	20	260
Flogger (MIG-23)	390	240
Foxbat (MIG-25)	30	0
Foxhound (MIG-31)	40	150
Fulcrum (MIG-29)	0	240
Bombers and fighter-bombers		
Backfire (TU-22M)	40	60
Badger (TU-16)	50	0
Bear (TU-95)	50	10
Blackjack (TU-160)	0	30
Fencer (SU-24)	240	260
Fishbed (MIG-21)	50	0
Fitter (SU-17)	230	50
Flogger (MIG-23/27)	170	230
Forger	0	20
Frogfoot (SU-25)	10	160
Fulcrum (MIG-29)	0	160
New light bomber	0	10
Attack helicopters		
Havoc (MI-28)	0	60
Hind (MI-24)	350	500
Hokum	0	40

[a] These figures include Soviet Air Force and Air Defense aircraft deployed along China's border, but not Soviet Naval Aviation aircraft for which 1995 projections are not available. In the Pacific Fleet Air Force there are currently 50 fighters, 50 heavy bombers, 190 medium bombers, and 40 fighter-bombers. The projections are based on anticipated production and previous deployment patterns of new systems. All figures are rounded to the nearest 10.

Moreover, the F-8-2 has the potential to operate not only as a fighter-interceptor, but also as a multimission fighter with significant ground attack/strike capability. The proposed US radar has a ground-mapping mode, allowing for imprecise navigation and target recognition—with a third of the resolution available with state-of-the-art US radars—and an air-to-ground ranging mode that will provide range information for weapon launches. With relatively simple modifications to the US fire-control system and the addition of a laser designator for target illumination, the Chinese F-8-2 could, for example, be armed with the French AS.30 TASM missile and ARMAT anti-radiation missile:

- The laser designated AS.30 TASM is a relatively short-range missile—approximately 15 kilometers—used to attack point surface targets, such as bunkers, bridges, and ships.

Figure 6
The F-8-2 Will Give the Chinese Air Force Its First Credible Capability To Interdict the TU-22M Backfire Bomber



TU-22M Backfire bomber.

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- The ARMAT is a medium-range missile—approximately 30 to 50 kilometers—used to destroy defending ground radars to incapacitate surface-to-air missile batteries.

Both systems are exported by France, but we have no evidence of any serious attempt by Beijing to acquire them. Nonetheless, according to US military officers involved in negotiations with the Chinese, Beijing is expressing a strong interest in turning the F-8-2 into a multimission fighter with this kind of sophisticated ground attack capability.

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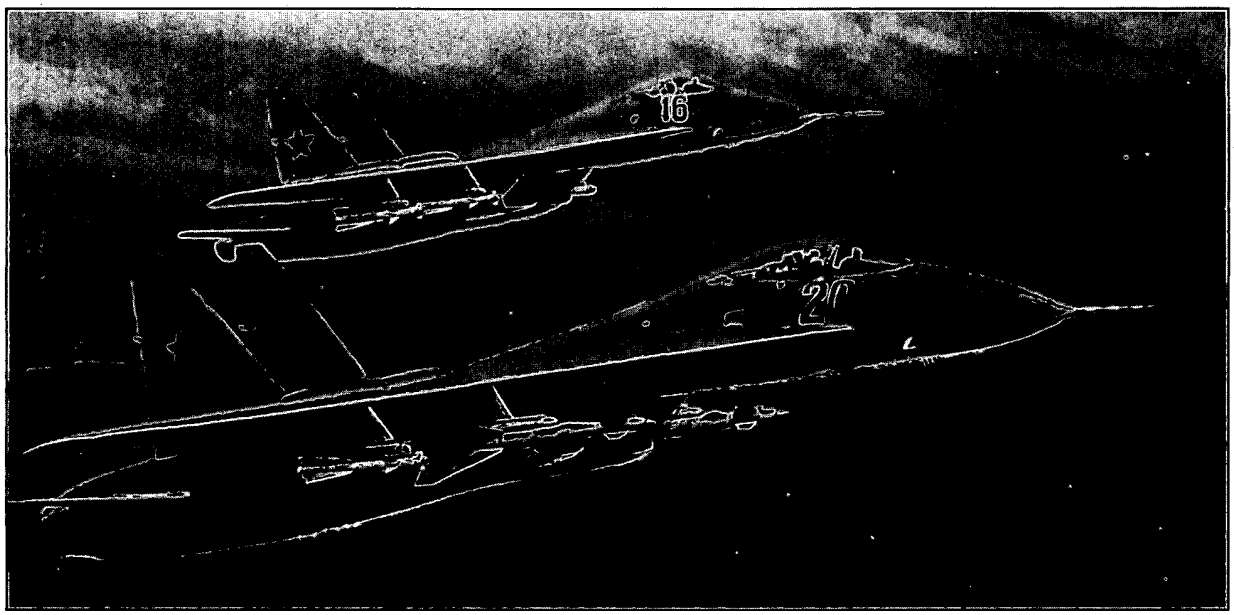
The F-8 and Regional Air Balance

The Sino-Soviet Border

When Beijing begins fielding F-8-2s in the early 1990s, the Chinese Air Force will have its first credible capability to interdict Soviet medium and light bombers attacking China. Soviet TU-16 Badger and TU-22M Backfire medium bombers, as well as SU-24 Fencer light bombers, already are deployed in East Asia. We expect that by the early 1990s the

Figure 7
Soviet SU-27 Flankers, Armed With AA-10 Missiles, Initially Deployed in 1985



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Soviets will also deploy in East Asia TU-160 Blackjack bombers, capable of carrying nuclear-armed long-range cruise missiles.

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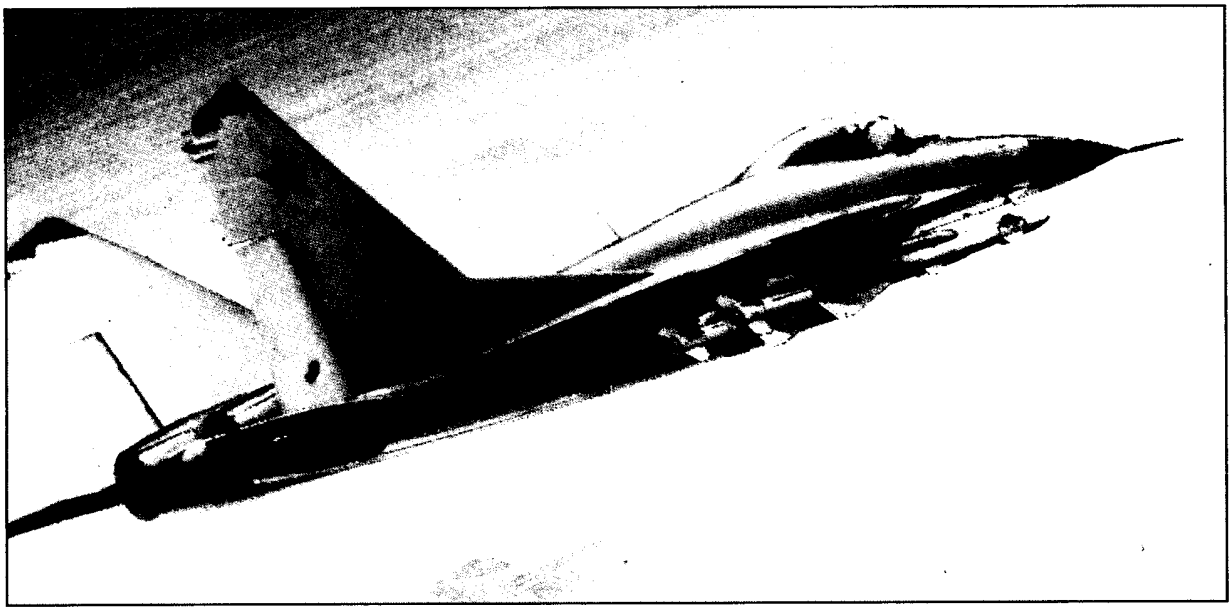
The F-8-2s, however, will not substantially alter the overall air balance because the Soviet Union will maintain its marked qualitative edge in fighter aircraft by deploying more of its new fourth-generation fighters—MIG-31 Foxhound, SU-27 Flanker, and MIG-29 Fulcrum—in East Asia. An F-8-2 equipped with US avionics and a beyond-visual-range missile like the Aspide surpasses the performance capabilities of the Soviet second-generation MIG-21 Fishbed and approaches those of the third-generation MIG-23 Flogger. However, the new F-8-2 will not be a match for the Foxhound—in East Asia since 1983—and the Flanker—initially deployed to East Asia in 1985—or the Fulcrum—expected in East Asia in the 1990s. The Chinese fighter's avionics will not give it the multiple-target or track-while-scan capabilities that the Soviets are developing for their advanced aircraft. With a multiple-target capability, the Soviets would be able to track more than one enemy aircraft at a time. The Flanker and Fulcrum fighters will also be far more maneuverable than the F-8-2. We believe,

Figure 8
The Soviet MIG-29 Fulcrum Is Expected in Far East in the 1990s



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therefore, that Beijing must field large numbers of F-8-2s—as well as modern ground-based air defenses—just to keep pace with the Soviet threat of the 1990s.[4]

The Taiwan Strait Balance

We believe Beijing already can gain command of the air over Taiwan because its Air Force greatly outnumbers Taiwan's. But China would take heavy, probably exorbitant, losses primarily from Taiwan's ground-based air defenses. China has about 5,100 fighter aircraft compared with only some 320 fighter aircraft for Taiwan. F-8-2s will still be highly vulnerable to surface-to-air missiles. But, if equipped with effective antiradiation missiles and TASMs as well as air-to-air missiles, they could greatly reduce the number of Chinese aircraft lost to Taiwan's ground-based air defense systems.[5]

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[5] Another option for reducing Chinese losses over Taiwan would be to equip A-5 ground-attack aircraft with ARMATs and TASMs to erode Taiwan's surface-to-air missile-firing capability.

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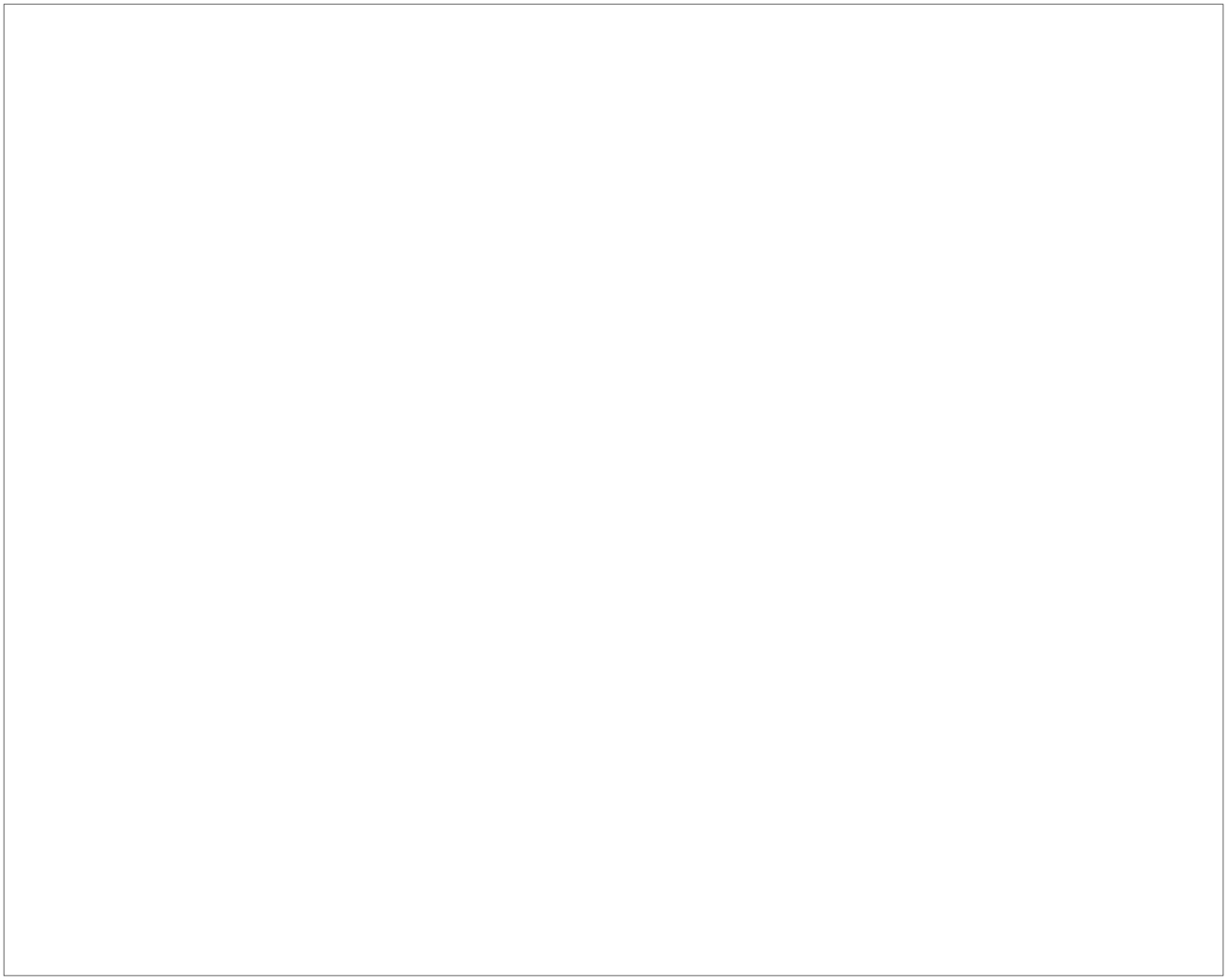

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In aerial combat, today's F-8-1 is not a match for Taiwan's F-5E Tiger II fighter, but the proposed improvements to the F-8-2 would erode the F-5E's qualitative edge. The F-5E's air-to-air combat capability exceeds that of the F-8-1 because Taiwan's fighter has a search-and-track radar and a better air-to-air missile. The F-8-2, however, is likely to be more maneuverable and have beyond-visual-range missiles that allow the F-8-2 to fire before the F-5E acquires the F-8 on its radar. Even if only armed with PL-8 (Israeli Python 3) missiles, the F-8-2 would have an all-aspect attack capability not found on today's F-5E fighter. Better engines—such as the GE-404 [redacted]—on the F-8-2 would also improve China's capabilities in air operations against Taiwan, giving the aircraft a combination of greater payload and longer range. In addition, the longer engine life for the F-8-2 engines will greatly reduce the aircraft maintenance problems China experienced during its 1979 war with Vietnam. [redacted]

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Taiwan's planned development and deployment of its Indigenous Defense Fighter (IDF) will offset many of the advantages Beijing could gain from the F-8-2. Taipei plans to equip the IDF with AIM-7F Sparrow beyond-visual-range missiles and AIM-9L Sidewinder all-aspect infrared-guided missiles, although Washington has not yet approved the plan. This equipment

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would make the IDF more than a match for the F-8-2, with its shorter, radar-limited missile range.

Powered by two engines based on the Garrett TFE731-2L, the IDF will be similar in capability to a US F-20 Tigershark. The fighter's proposed APG-67 radar will give the IDF lookup/lookdown capability, air-to-ground ranging, distinction of targets in ground clutter, and the option to add track-while-scan and surface moving-target track capabilities.

Implications for Vietnam

Fielding of F-8-2s may have its greatest impact along the China-Vietnam border, although airpower has not been a factor in Sino-Vietnamese hostilities. The Soviet Union has not provided Vietnam with any fighters more advanced than the MIG-21 Fishbed, but China's deployment of F-8-2s will substantially strengthen Vietnam's hand in requesting MIG-23 Floggers. the Soviets have denied Hanoi's requests on the grounds that the MIG-21 is at least as capable as any Chinese fighter in service. Vietnam in the mid-1990s might face a force of Chinese F-8-2s that are more advanced than its own fighters and, if these fighters are equipped for strike missions, a Chinese Air Force far more prepared than today's for deep strikes into Vietnam. The shape of the Sino-Vietnamese air balance, therefore, is likely to be determined by the Soviet Union's willingness to provide Hanoi with more modern fighter aircraft and ground-based air defense systems.

A New Entry in China's Arms Export Catalogue

China is aggressively exporting arms to the Third World—with sales of over $9 billion since 1980—and has added the F-8-2 to its list of aircraft for export. At the Farnborough Air Show, China's aircraft industry displayed a model of the F-8-2 and distributed brochures extolling the performance capabilities of the fighter in air combat, battlefield interdiction, and close air support missions. China hopes to find a market for its indigenous F-8-2—not the aircraft with US upgrades—which we estimate may be ready for export as early as late 1987.

Beijing is likely to initially sell the F-8-2 to customers who have previously purchased Chinese aircraft, such as Egypt, Iraq, Pakistan, Bangladesh, Zimbabwe, Tanzania, and Sudan. 25X1 25X1

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Although the F-8-2 may not be a modern fighter, its estimated price of less than $10 million will make it attractive to Third World countries that have come to view China as a reliable and discreet supplier of inexpensive and easily operated arms. 25X1 25X1 25X1

Implications for the United States

Beijing has high expectations for the F-8 modernization program and the role the United States will play. Because this is the first major FMS case, the Chinese are bound to push the limits of the Foreign Military Sales agreement to set precedents for future arms sales. According to a US Defense Department official, the Chinese have tried—in violation of the FMS accord—to persuade the US negotiators to let them select the contractor who will provide the F-8-2 avionics packages. The Chinese are unlikely to be satisfied with the purchase of 55 radar packages and will want Washington to eventually provide production technology. In addition, we expect Beijing to seek the avionics and missiles necessary for an air-to-ground attack capability and active electronic countermeasure equipment to better defend the aircraft. If the Chinese cannot acquire this technology from the United States, they will certainly turn to other Western countries, such as France, Italy, or Israel. 25X1 25X1 25X1

Beijing appears pleased with US efforts to supply the F-8 improvements and probably views them as a signal that the United States is willing—at least to a limited extent—to upgrade China's military capability despite its possible detrimental impact on Taiwan's defenses. In our judgment, though, Beijing is concerned that the anticipated F-8 program will be used in Washington to justify new arms programs for Taiwan. Successful modernization of the F-8 with US assistance probably will lead Taiwan to pressure the

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United States to at least match the technology provided to China. We believe that if Washington decides to further aid F-8-2 development by providing engines or upgrading the avionics packages, improving its air-to-ground capability, Taipei probably will press more vigorously for:

- Better ground-based air defense systems, such as the Patriot.
- The AIM-7F Sparrow beyond-visual-range radar-guided missile for the IDF.
- The AIM-9L Sidewinder all-aspect infrared-guided missile for the IDF and F-5E.
- F-16 or F-20 fighters. 25X1

We believe the successful conclusion of the F-8 avionics sale signals the beginning of long-term ties to Chinese defense industries that are likely to increase Washington's influence with the Chinese military. Today, US-Chinese military ties are limited to occasional senior- and training-level exchanges, but installation of the avionics packages and maintenance training will necessitate the presence of US Defense Department officials and contractors at Chinese defense plants for at least the next 10 years. If the Chinese are pleased with the results of the F-8-2 avionics upgrade, we expect future FMS sales of items such as the Mark 46 torpedo, currently under negotiation with a contract expected next spring. Deng Xiaoping, moreover, signaled Beijing's interest in a wider arms technology relationship when he raised the possibility of US military credits or commercial assistance for weapon purchases with Secretary of Defense Weinberger during his October 1986 trip to China. 25X1