
U.S.-Korea Fighter Coproduction Program

By

Joseph E. Kelley
Director, Security and International Relations Issues,
National Security and International Affairs Division
General Accounting Office

[The following is a reprint of a statement presented in Congressional testimony before the Subcommittee on Investigations of the House Armed Services Committee in Washington, DC, on April 4, 1990.]

I am pleased to be here today to discuss the results of our work on the U.S.-Korean fighter program. In August 1989 the Department of Defense (DOD) and the Republic of Korea decided to change the name of the program from "FX" to the "Korean Fighter Program"—"KFP"—to distinguish it from the U.S.-Japan "FS-X" arrangement. The programs do, in fact, differ in a very important respect: unlike the FS-X program with Japan, this program does not involve the transfer of design or development technology. Rather, this program involves the transfer of manufacturing and assembly know-how.

You asked that we review the negotiating history and contractors' marketing efforts to date on this program and Korea's aerospace industrial experience, goals, and plans. As you know, on December 20, 1989, Korea announced its selection of the F/A-18, but the program has not been completely defined yet. As a result, we were unable to fully analyze certain aspects and make overall conclusions.¹ However, I would like to address four key points. First, although Korea has a military need for these fighters, based on our review of the negotiating history, the Korean's desire for a coproduction program has been driven by their industrial development goals and interests. These goals are reflected in Korea's positions on a number of KFP issues. Second, over time, the program concept—a mix of off-the-shelf and kit purchases with phased-in licensed production—will accommodate Korea's industrial development goals to some extent. But until the program is fully defined and Korea selects the items it wishes to assemble or produce, there is no way to gauge precisely the extent to which its industrial goals might be satisfied by the program or what the U.S.-Korean work shares will actually be in the licensed production phase of the program. Third, DOD has (1) inhibited the success of certain elements of the Korean negotiating position but compromised on others, (2) taken steps to make certain technologies unavailable for Korean licensed production, and (3) along with the Department of Commerce, attempted to limit the additional industrial benefits Korea has expected to derive from the program. Finally, some important aspects of the program remained unclear at the time of our review, and we would like to raise them for further consideration.

BACKGROUND

After late 1986 when Northrop withdrew the F-20 from the competition, two U.S. airframe manufacturers—General Dynamics and McDonnell Douglas—competed for the sale and licensed production of 120 F-16 or F/A-18 aircraft.² Before Korea selected the F/A-18 for the KFP, a

¹ The Air Force and the Navy did industrial base factors analyses and technology transfer risk assessments on the program.

² Before the F/A-18 was selected, two U.S. engine manufacturers were competing separately for the sale. Once Korea selected the F/A-18, General Electric automatically won the engine competition.

number of official meetings and communications had transpired, and DOD presented a draft memorandum of understanding (MOU) to the Korean government in February 1988. However, because formal negotiations did not occur on that draft, by mid-1989 DOD no longer considered the draft valid. In the Summer of 1989, the Secretaries of Defense and Commerce met with the Korean Minister of National Defense to discuss KFP issues. As a result, the two governments agreed that Korea would purchase 12 aircraft off the shelf and 36 in kits and would produce 72 under commercial license. Soon after Korea selected the F/A-18, DOD drafted a new MOU, presenting it to Korea in early February 1990. Preliminary working level discussions have already been held to prepare for formal negotiations.

The U.S. contractors involved in the competition for the KFP have made a number of presentations to the Korean government and industry. During the competition, the contractors reached tentative understandings with the Korean entities on (1) candidate items for Korean licensed production and (2) other industrial benefits, subject to U.S. government approval. Once Korea selected the F/A-18, however, the Korean government and U.S. contractors agreed to wait until the government-to-government MOU was signed before concluding the commercial program arrangements. Meanwhile, Korean industry has been determining which of the candidate aircraft and engine parts they want and can afford to produce under license.

THE FIGHTER PROGRAM IS IMPORTANT TO KOREA'S AEROSPACE INDUSTRIAL DEVELOPMENT GOALS

The KFP is intended to meet Korea's military modernization requirements, but it also plays an important role in Korea's aerospace industrial development goals. According to DOD, the intent of the program was to replace Korea's aging fleets of F-4s and F-5s. It will be an important part of Korea's overall Force Improvement Program, as there is a growing need to counter the threat from North Korea, including MiG-29 aircraft. The shape of this program is also founded to a great extent on Korea's desire to develop and expand its aerospace industrial capabilities.

According to information we obtained on Korean planning, the fighter program—previously designated FX—is part of a larger, longer term program involving the potential procurement of 600 or more fighters. For Korean planning purposes, FX is the first of three phases. The second phase—FXX—was conceived as a follow-on codevelopment effort. The third phase—FXXX—was planned to be a Korean indigenous fighter. The first phase, or FX, is expected to be completed by the late 1990s. We are not certain how firm these plans are or whether Korea can or will achieve these goals. Most observers we met with considered Korea's goals to be unrealistic, but they believed that Korea could become a significant producer of aircraft parts and components in the world market.

Korea's Aircraft Industry Experience to Date: Three key Korean companies—Korean Air Lines (KAL), Samsung Aerospace, and Daewoo—are repairing, overhauling, assembling, and manufacturing some parts on a variety of mostly U.S. military and commercial planes, helicopters, and engines. For example, KAL co-assembled the F-5 fighter and the MD-500 helicopter, and machines some F-16 parts for Fokker of the Netherlands. Samsung has performed repair, overhaul, and some parts production on a number of U.S. aircraft engines. In addition, Samsung produced some minor parts for the F/A-18 in 1989 under a subcontract with McDonnell Douglas. Daewoo produces some F-16 airframe parts for General Dynamics and won a subcontract from Lockheed on P-7A aircraft wings. However, according to U.S. government officials, these companies have limited experience compared to the level of manufacture and production line management contemplated under the KFP. To prepare for the program, Samsung, the designated prime contractor on the fighter, has invested heavily in new facilities.

Korea's Aerospace Industry Development Committee and the KFP. In May 1985, the Korean government established an Aerospace Industry Development Committee, chaired

by the Deputy Prime Minister, with members from the Ministries of National Defense, Trade and Industry, Finance, and Science and Technology, as well as the Senior Secretary to the President for Economic Affairs. This committee was established to promote and guide the development of Korea's aerospace industry. The committee has set requirements in the Korean negotiating positions to date on the program. For example, the committee established the negotiating position that the program be a direct commercial licensed production arrangement negotiated between the Koreans and U.S. contractors, as opposed to a Foreign Military Sales (FMS) coproduction program. According to information we obtained, this was intended to maximize the technology transfers and the Korean industry's control over the program. The committee also apparently had an important role in the final evaluation of the two competing U.S. aircraft and in making recommendations to the Korean Blue House (equivalent to the Office of the President and his staff). DOD and U.S. contractor officials agreed that the Korean Blue House makes the final decision on aircraft selections.

Korean Industrial Goals Highlighted in KFP Discussions to Date. We have pointed out in prior reports and testimonies that licensed production or coproduction can cost a purchasing country more than buying an item off the shelf from the United States. This is partly because of the added costs of building the necessary infrastructures; licensing, royalty, and technical assistance fees; and the limited quantities produced, which do not permit achieving economies of scale.

The negotiating history shows that the Korean Ministry of National Defense has been concerned that Korea produce sufficient quantities of aircraft under license to reduce the economic inefficiency of its manufacturing capability. Throughout the program's history, Korea has attempted to maximize the quantity of aircraft it could produce under license and minimize the quantity of aircraft it would purchase directly from the United States off the shelf and in kit form. Until the summer of 1989, Korea insisted on purchasing only 3 aircraft off the shelf and 20 aircraft in kits from the United States and producing 97 aircraft under license in Korea.

Korean program officials also insisted that they be allowed to require the U.S. contractors to "buy back" parts from Korean producers for U.S. Air Force or U.S. Navy aircraft. This is usually called "directed buybacks." Again, the objective was to make the Korean production lines less inefficient. As I will discuss later, DOD is against directed buybacks but agreed not to place a restrictive provision in the MOU.

Special Offset Requirements. Because of the management of the program and its importance in Korea's overall aerospace industrial development plans, the Korean government imposed special offset guidelines for the fighter competition. The term "offsets" is applied to trade arrangements made as conditions of foreign military sales. Essentially, these arrangements are intended to reduce the impact of foreign weapon purchases on the buyer's balance of payments, or to provide the buyer with other advantages. Direct offsets involve some form of licensed production, coproduction, or subcontracting in the country buying the weapon system. Indirect offsets, on the other hand, involve arrangements in areas not directly related to the purchased system. For example, indirect offsets can take the form of subcontracting, purchasing, or marketing civilian or other defense products or services, investing in local industry, and promoting tourism for the purchasing country.

During the competition, Korea's written policy was to require a minimum of 50 percent offsets for major purchases of foreign weapons and systems. Since about 1987, though, Korea had unofficially required only 30 percent offsets for purchases from American defense contractors. For the KFP, separate guidelines were issued, raising the offset requirement to a minimum of 60 percent. In addition, Korean offset guidelines issued to the U.S. contractors stated that the licensed production share of the program—for which Korea pays a fee—would not be credited to the offset commitment. According to the guidelines, the bulk of the commercial offsets—beyond

the direct offsets obtained through licensed production—would preferably be in the form of aerospace industrial development projects, as opposed to investment in hotels, for example.

In contrast to the Korean guidelines, the United States considers licensed production an offset in itself. If licensed production had been included as an offset in the KFP arrangement, as of July 1989 the competing U.S. airframe contractors would have been offering more than the required 60 percent.³ As I will discuss later, because of DOD and Commerce intervention, these offsets were revised before Korea selected the F/A-18.

U.S. AGENCIES' COORDINATION AND POSITIONS IN KFP DISCUSSIONS TO DATE

The KFP concept has been evolving since about 1984 and has undergone a number of changes. Until May 1989, DOD had not coordinated or consulted with Commerce on the program. However, since then, Commerce has played a more active role in KFP issues. Since early 1987, the United States and Korea have held numerous official discussions, exchanged written communications on a number of program issues, and held preliminary discussions on the MOU. Through these exchanges and discussions, certain U.S. positions have been formulated—in some aspects DOD has resisted certain Korean negotiating positions, while in others it has compromised. Because the current draft MOU is classified, we will address it in a separate, classified briefing.

Changes in the KFP Concept. Under the original KFP concept, 120 aircraft were to be produced under commercial license, with Northrop's F-20 and General Dynamics' F-16 in competition for the sale. After Northrop dropped out of the competition in late 1986, McDonnell Douglas entered with the F/A-18 for serious consideration. At that point, DOD increased its involvement in the arrangement, first by restricting the export licenses to FMS sales only. During early 1987, DOD insisted on an FMS coproduction program, while the Korean's insisted on straight commercial licensed production, thus creating a stalemate. In mid-1987, as the result of a DOD-directed compromise, both sides agreed to a mix of FMS purchases and phased-in commercial licensed production. DOD submitted a draft MOU to Korea in February 1988. However, it was not until after the July 1989 U.S.-Korea Security Consultative Meeting that the two sides agreed to the number of aircraft and kits to be bought through FMS channels.

Coordination With the Department of Commerce. The Fiscal year 1989 defense authorization legislation required DOD to consult with the Secretary of Commerce on MOUs with potential impact on the U.S. defense industrial base. The legislation was approved September 29, 1988. Between October 1988 and February 1989, three U.S.-Korean meetings on KFP occurred prior to consultation with Commerce. In November 1988, DOD officials and the contractors presented F-16 and F/A-18 pricing data to Korean officials. During December 1988, DOD officials met in Washington and discussed program issues with Korea's Second Assistant Minister for National Defense. In February 1989, the Defense Security Assistance Agency, the U.S. Air Force, the U.S. Navy, and the two U.S. airframe contractors involved in the competition made additional presentations in Korea.

In the final analysis, however, DOD has coordinated with Commerce more in the KFP discussions to date than it had in the U.S.-Japan FS-X program. As we mentioned in our Spring 1989 testimony on the FS-X program,⁴ DOD did not coordinate with Commerce when negotiating the program. In that case, DOD provided a briefing to Commerce in late October 1988 near the conclusion of the bilateral negotiations, in response to the newly effected legislative requirement.

³ The U.S. airframe contractors had submitted signed offset memorandums of agreement to the Korean Ministry of National Defense.

⁴ *U.S.-Japan FS-X Codevelopment Program* (GAO/T-NSIAD-89-31, May 11, 1989).

DOD briefed Commerce officials on the KFP in May 1989. At the 21st U.S.-Korea Security Consultative Meeting in July 1989, the Secretary of Commerce discussed the KFP with the Korean Minister of National Defense. Commerce further participated in subsequent meetings on KFP issues. DOD also coordinated the 1990 draft MOU with Commerce, as well as State, and has included Commerce on the KFP negotiating team. Commerce, in turn, staffed the initial draft MOU for review both within Commerce and with the Departments of State, Energy, and Labor; the Office of the U.S. Trade Representative; the President's Office of Science and Technology Policy; and others. Further, DOD and Commerce have signed an agreement on a key KFP negotiating position for the United States.

U.S. Positions Formulated to Date. As I mentioned earlier, the MOU has not been fully negotiated, and many specific arrangements need to be finalized. However, certain U.S. positions have solidified and been communicated to the Korean government.

- **Items Withheld From and Released for Licensing to Korea.** In February 1988, DOD provided the Korean government a tentative list of items on both aircraft that could not be produced in Korea and must be purchased through FMS channels. This was called the "FMS-Must List." The list included the most sensitive military avionics on the two aircraft, such as the radar, electronic warfare equipment, and intelligence and other software. The engines had not yet been officially addressed on the list we examined during our review. Nevertheless, DOD officials told us that the engine core where combustion occurs—commonly called the "hot section"—and other sensitive items would not be released for licensed production. However, we were also told that Korean firms could competitively bid for subcontracts on non-sensitive portions of the equipment on the FMS-Must List.

This list changed over time, and DOD created an expanded list to accompany the new draft MOU as an annex. The annex now addresses the key engine components. Although it is not viewed as all inclusive, the list contains both items to be withheld from licensed production and those which may be produced under license in Korea. According to DOD officials involved in the program, the items listed in the annex are not negotiable, and the release of items not covered in the annex will be decided on a case-by-case basis.

Both the early FMS-Must List and the expanded annex to the MOU were established largely to protect national security interests and to control production quantities. As we pointed out in a previous report,⁵ withholding components from foreign production certainly does help DOD track the number of end items produced but does not really control quantities of parts produced overseas—or for that matter third-country sales of parts. We believe that withholding components is a positive step but not a substitute for active program oversight and management.

- **Aircraft to Be Purchased versus Produced Under License.** One area in which DOD inhibited the success of the Korean negotiating position was the mix of aircraft to be purchased and produced under license. In mid-1987, when the compromise was reached on the program method, DOD insisted on a program mix of 48 aircraft purchased from the United States (off the shelf and in kits) and 72 produced under commercial license in Korea. To a certain extent, this negotiating position frustrated the Korean objective of enhancing the economic viability of its aircraft production lines and retaining total program control. This is particularly true if Korea is unable to obtain substantial buybacks or subcontracts for Korean-made components. Nevertheless, Korean industry could perform some manufacturing work as a subcontractor on the first 48 aircraft, even if the planes were purchased through FMS from the United States. Thus, the requirement that the

⁵ *Military Coproduction: U.S. Management of Programs Worldwide* (GAO/NSIAD-89-117, Mar 1989).

first 48 planes be purchased from the United States does not really preclude some Korean work share in those aircraft.

- Directed Buybacks of Korean-made Parts. In discussions and correspondence, DOD has consistently resisted the Korean requirement for "directed buybacks." DOD initially included a clause prohibiting directed buybacks in the February 1988 version of the government-to-government MOU. Later, DOD instead agreed to place this restriction on the U.S. contractors' commercial munitions licenses. DOD has not been able to secure formal Korean government agreement on the prohibition against directed buybacks. I would like to add, though, that regardless of where it is placed, this restriction does not preclude Korean or other foreign contractors from competitively bidding on and winning U.S. subcontracts on the aircraft.

- Offsets and the KFP. DOD and Commerce have intervened in the commercially agreed-upon offsets arrangement I mentioned earlier. At the July 1989 Security Consultative Meeting in Washington, the Secretaries of Defense and Commerce addressed the offsets issue with the Korean Minister of National Defense. Subsequently, DOD told the Minister of National Defense and the two U.S. prime airframe contractors that it could not support a sale involving excessive offsets. The Minister of National Defense agreed to limit the offset associated with the KFP to 30 percent but did not agree to include licensed production in the 30-percent offset. The airframe contractors revised their offset arrangements with Korea because of U.S. government intervention. I would like to point out that the U.S. government's intervention in this case is unprecedented. Traditionally, DOD has not involved itself in commercial offset arrangements. Further the U.S. government has no mechanism to monitor or enforce the 30-percent offset cap because the offset agreement is between the U.S. contractor and the Korean government.

ASPECTS OF THE PROGRAM THAT REMAIN UNCLEAR

In our analysis three key elements of the KFP remain unclear at the time of our review. First, DOD, in consultation with Commerce has done a thorough review of items and technologies to be withheld from licensed production, but it is unclear to us how DOD can ensure that the restrictions will be fully implemented through the commercial licensing process. State and Commerce are the licensing authorities. These agencies do not forward all license applications to DOD for review. Based on our prior work, in cases where DOD is consulted, it does not have the final authority on the disposition of the licenses. Without some commitments from State and Commerce that all KFP-related licenses will be forwarded to DOD and that its advice will be incorporated in the licenses, it is unclear to us how the restrictions will be fully implemented through the process.

Second, DOD and U.S. Navy officials have recently begun structuring a program management and oversight plan for the KFP. In our 1989 report on management of coproduction programs, we recommended that DOD periodically verify quantities of items produced under these programs and their disposition in the producing country. According to information we have on the DOD plan for the KFP, the U.S. Navy will have personnel in Korea throughout the life of the program, with the principal responsibility of providing technical assistance and support to the Korean Ministry of National Defense, Air Force, and industry. The costs of these personnel will be assumed by the Korean government under an FMS case. As currently planned, the production validation function would be performed as a by-product by these personnel. We recognize the sensitivities involved in this matter, but to preserve the objectivity and independence in production validation, DOD may wish to consider separating this function, once production is fully underway, and funding it from the administrative fees it collects from FMS cases generally. In this way, the personnel verifying production quantities would not be funded directly out of a Korean FMS case.

Finally, because the U.S. contractors' proposed offset projects are not yet defined, and because of the way offset projects may get credited by the Korean government, the technology transfer and economic effects of the offsets cannot be determined. Depending on the type of offset

project, Korea may apply multipliers to the dollar value of the project when reaching the credit value. For example, if Korea assigned a multiplier of two to a \$50 million offset project, the U.S. contractor would receive an offset credit of \$100 million toward the performance of its offset commitment. In addition, the offsets are to be implemented over a 10-year period. As a result, the effects of the offsets will be unclear for some time to come.

We did our work from June 1989 through March 1990 and obtained information on the negotiating history and the arrangements contemplated for the KFP in Washington, DC, and St. Louis, MO, from the Departments of Defense and Commerce, the U.S. Air Force, the U.S. Navy, General Dynamics, McDonnell Douglas, and General Electric. We also obtained information on Korea's aerospace industrial and future fighter aircraft goals and planning. However, we did not visit Korea because of the timing and sensitivity of Korea's aircraft selection.