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# THESIS

U. S. FMS AND ROK ECONOMIC ACQUISITION  
OF WEAPON SYSTEMS

by

Seung Joo Lee

June 1987

Thesis Advisor:

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Since the Korean war, the military balance on the peninsula has continually favored North Korea. The North continues to pose an imminent danger to the peace and stability of the South. North Korea's recent swing toward the Soviet Union and the transfer of new technology further increases the threat. The importance of the peninsula to the East-Asia regional security has been emphasized. In FY 86, the U. S. Congress did not appropriate FMS funds for the Republic of Korea. This has resulted in increased defense expenditures that force the Republic of Korea to find a more efficient means of acquisition. It is clear that FMS pricing, contract and financing are critical areas to ROK's efficient acquisition of arms. Instead of a high-level political solution to the problem, negotiation and price analysis

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U.S. FMS AND ROK ECONOMIC ACQUISITION

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## ABSTRACT

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## I. INTRODUCTION

During his inaugural address, President Reagan picked up on the theme set forth in the platform when he stated:

“To those neighbors and allies who share our freedom, we will strengthen our historic ties and assure them of our support and firm commitment. We will match loyalty with loyalty. We will strive for mutually beneficial relations. We will not use our friendship to impose on their sovereignty, for our sovereignty is not for sale.” [Ref. 1: p.1-51]

After 30 years since the armistice in 1953 South and North Korea are competing for survival and legitimacy - militarily, diplomatically and politically. [Ref. 2: p.16] Too often in the past, the U.S. military commitment to Korea has been viewed only as a local Korean problem. [Ref. 3: p.56] However, today, the Korean peninsula is perceived as a buffer zone for the defense of U.S. core/security interests in Japan and the western Pacific region, primarily because of Korea’s geo-strategic position vis a vis Japan and U.S. bases in the western Pacific. [Ref. 4: p.224] Also, from the U.S. global strategic point of view, Korea remains an integral element of the global strategy as an important point where Soviet and U.S. interests directly clash. [Ref. 3: p.56]

There have been several major components that have provided security for the Republic of Korea and have deterred a renewal of hostilities: (1) the relative strength of ROK forces measured against those of the North; (2) the strength of U.S. forces stationed in Korea or available for action there; (3) the supplementary role of Japan; (4) the weight and direction of Soviet and Chinese influence over the North and (5) the U.N. peacekeeping machinery. [Ref. 5: p.113]

In view of those components, the U.S. security commitment has been implemented in three ways: the Mutual Defense Treaty, the presence of U.S. ground troops and extensive American security assistance. [Ref. 6: p.141]

Over the last 30 years, U.S. security assistance to Korea has not only played an important deterrence role, but contributed largely to the improvement of its defense capability and overall economy.

Meanwhile, North Korea remains one of the most repressive, militaristic and xenophobic societies on earth. Further, North Korea continues to enjoy considerable

advantages in the military competition with the South. The North Korean forces are well equipped and have a substantial advantages in several categories of offensive capability: tactics, exercises, weapons, units, etc. [Ref. 6: p.4]

With Pyongyang's tilt toward Moscow since the Soviet Union shot down the Republic of Korea's airlines on September 1, 1983, the Soviet Union has provided North Korea with MIG-23's. MIG-27's and SU-22's also seem to be likely candidates as bomber supplements to the North. All three systems are technological improvements over what currently exist in the North Korean inventory. Such introductions of new technology into the North have threatened the Peninsula's stability since 1945. [Ref. 7: p.1]

With respect to those threats, the arms race will continue on the peninsula. Naturally, the South should find a way to maintain its stability. At this point, U.S. weapon systems may still be proper due to the high level of its technology and the South's dependence for weapons systems on the U.S..

However, because of the complexity and tremendous cost of these systems, significant budgetary and managerial problems will ensue.

#### **A. PROBLEM STATEMENT**

In FY87, foreign military sales (FMS) credit was not appropriated to the Republic of Korea. In view of Korea's spending 6 percent of GNP or 35 percent of national budget on defense, stopping this loan will result in the contraction of investment as well as the increase of defense burden in the short term. At this point, it is necessary for the South to find a more efficient method of acquisition, given the current condition. [Ref. 8: p.4]

#### **B. METHODOLOGY**

To better understand U.S. FMS and its impact on the Republic of Korea, the big picture with respect to its history, trends, authority, legislation will be shown. To demonstrate the complexity of the FMS pricing model, the introduction of an F-16 model will be designed. It assumes that U.S. FMS pricing, contract and financing are critical to ROK's efficiency. The most efficient issues in those areas will be discussed. This thesis will examine FMS trends in the future which may come from the historical data and focus on the more efficient ways to execute FMS at the initial phase of procurement, given the current condition.

### **C. SOURCES**

Source documents can be divided into several categories:

1. Books, theses, and reports;
2. Department of Defense and U.S. Armed Services regulations, manuals and directions;
3. Congressional hearings, reports, and policy statement of past and present administrations;
4. Periodicals and newspapers;
5. DLSIE data base information;
6. Information from Korean liaison officers and Korean Army department.

### **D. LIMITATIONS AND ASSUMPTIONS**

In a research project of this type, certain data will be unavailable. Certain information specifically associated with the South is not available. Specific information regarding numbers and types of weapon systems in the inventories of both countries, and military weaknesses will be limited. Because of its complexity and diversity, U.S. FMS pricing methodology is difficult to access and understand. In addition, FMS price data would not be public, therefore, the comparison of price data between nations is not available. Lastly, no other areas except the initial phase of FMS procurement will be discussed here. Other areas, such as delivery and maintenance, are important, but need to be addressed in further research.

### **E. RESEARCH QUESTION**

The principal research questions are as follows:

1. What is the difference between FMS credit sales and FMS cash sales?
2. What are the trends and the impact of FMS on the Republic of Korea since 1945?
3. What are the future problems of FMS for the Republic of Korea?
4. What is U.S. FMS? How is it implemented? What is the U.S. pricing policy and methodology? How are executed FMS agreement and financing?
5. How can the initial phase of FMS procurement be made more effective and efficient, given the current condition?

### **F. ORGANIZATION**

The ROK is a major recipient of U.S. security assistance. Thus, as a backdrop to this research, it is necessary to develop a basic understanding of the political and



economic forces influencing U.S. decisions on the weapon systems to be sold through FMS. Likewise, it is important to understand the economic, and military context of the Republic of Korea which necessitates the purchase of these weapon systems. The earlier chapters will focus on the introduction of FMS and ROK's budgetary problems in acquisition. Later, this thesis will discuss U.S. pricing policy and ways to make it more efficient.

Chapter II introduces the definition, purpose, history, authority and procedure of U.S. FMS. Next, it will discuss in detail the relationship between U.S. FMS and the Republic of Korea.

Chapter III presents the problems which accompany ROK security and its economic constraints. In the first place, it shows the military balance on the Peninsula and why the ROK continues to require the advanced weapons systems. Thereafter, it discusses defense expenditures and its impact on national economics, weapon acquisitions and its relation to the defense budget. Then, constraints or problems will follow.

Chapter IV presents U.S. FMS pricing policy, methodology, the F-16 pricing model as an example. It also shows how to make FMS agreement and financing. These will help to find more efficient ways in acquisition.

Chapter V talks about the improvements in an area of FMS pricing, contract: price analysis and negotiation.

Chapter VI presents conclusions and recommendations. It emphasizes significant differences between FMS credit and FMS and also offers feasible efficient alternatives in acquisition. Finally, it addresses the implications of influencing national and defense resource management. It recommends more research for logistics improvement, source selection, and project management.

## II. BACKGROUND

### A. WHAT IS FMS?

#### 1. Definition

FMS stands for foreign military sales, which are government to government sales of defense articles or services. Through the FMS program, the U.S. Department of Defense sells military equipment and services to foreign governments and international organizations. DOD may order and buy (procure) the equipment from private firms, manufacture it in government facilities, draw it from available stocks, or in certain circumstances from U.S. military units. It is contrasted to commercial sales. [Ref. 9: p.1,2]

Defense articles are commodities such as weapons systems, munitions, materials, supplies, or goods used for the purpose of providing military assistance, not including merchant vessels. [Ref. 10: p.461]

Defense services include any service, test, inspection, repair, training, publication, technical or other assistance or defense information used for the purposes of making military sales. Training includes either formal or informal instruction of foreign students in the U.S. or abroad by officers or employees of the U.S., contract technicians, or contractors. It also includes correspondence courses, technical, educational, or informational publications and media of all types, training aids, orientation, training exercises, and military advice to foreign military units and forces. [Ref. 11: p.18]

If the source of supply is new procurement, the U.S. government agency or military department assigned cognizance for this "case" is authorized to enter into a subsequent contractual agreement with industry in order to provide the item or service initially requested. At that time, the purchasing government pays all cost that may be associated with a sale. Therefore, these security assistance activities do not require congressional budget authorizations or appropriations. There is a signed agreement (normally documented on a DD Form 1513--Letter of Offer and Acceptance) between the U.S. government and a foreign government. Each DD Form 1513 is commonly referred to as a "case" and is assigned a case identifier for accounting purposes. [Ref. 1: p.2-24,2-25] Currently, FMS is conducted under the authority of the Arms Export Control Act of 1976, as amended.

## 2. Purpose

The AECA defines for which the purposes the U.S. may sell or lease defense items -"to friendly countries solely for internal security, for legitimate self defense, to permit the recipient country to participate in regional or collective arrangements or measures consistent with the Charter of the United Nations, or otherwise to permit the recipient country to participate in collective measures requested by the United Nations for the purpose of maintaining or restoring international peace and security, or for the purpose of enabling foreign military forces in less developed friendly countries to construct public works and engage in other activities helpful to the economic and social development of such friendly countries." [Ref. 12: p.233,234]

## 3. History and Legislative Basis

American historical experience demonstrates several different dimensions of the arms transfer phenomenon: from major dependence on imported arms to the problems of being the world's largest arms exporter.

In the twentieth century the American role has generally been that of an arms exporter. It would not be an exaggeration to say that some of the most important decisions determining U.S. involvement in foreign commitments over the 65 years have been directly related to the transfer of arms and munitions to foreign governments, and arms transfer policy thus played a large role in American foreign policy long before the debates in the mid-1970s.

With the onset of World War I the U.S. rapidly emerged as the leading participant in the international trade in munitions. During the period of its neutrality-that is, from August 1914 to March 1917-the U.S. exported approximately \$2.2 billion in war supplies to Europe. The enormity of the American presence on the international munitions market is suggested by the fact that as early as 1920 the U.S. accounted for more than 52% of global arms exports. Throughout the interwar period the U.S. remained one of a handful of major arms suppliers, generally ranking only behind France and Great Britain.

It was not until World War II and its aftermath that the U.S. assumed its current role as the world's major provider of defense articles and services. At the beginning of World War II, as was the case in the early years of World War I, arms transfers were one of the major instruments of U.S. foreign policy. The first signal of the direction of U.S. foreign policy after the outbreak of war in Europe was the revision, in November of 1939, of the Neutrality Act Which guided its arms transfer

policy. The revised legislation ended the legal prohibition of the sale of arms to belligerents, and allowed the "cash and carry" principle which was a means of limiting American commitment to the Allied powers during the opening years of World War II, for in effect it enabled the British to buy American arms.

The first great step after the German invasion of France in May 1940 was the famous September 1940 destroyers-for-bases deal with Great Britain. This was followed, in March 1941, by the Lend Lease Program, through which the U.S. became the arms supplier of the Allied forces. The total amount of \$48.5 billion of arms (as well as food and other war materials) were transferred to the Allies between 1941 and 1945 under the Lend Lease Program. Once again, the U.S. became the principal actor in the international shipment of arms. At the end of World War II Congress intervened, causing a phasing out of the Lend Lease Act on a bilateral basis with all countries involved. [Ref. 13: pp.16-23]

The threat of communism in Greece, and the real possibility of the Russians forcibly seizing the Dardanelles, combined with the fact that a weary British government could not provide any further assistance, led to the Truman Doctrine and the passage of the National Security Act of 1947. Of note is the historical importance of this doctrine, as it still guides much of the assistance and sales programs today. President Truman in his address to Congress stated: "I believe that it must be the foreign policy of the United States to support "free people" (who are resisting attempted subjugation by armed minorities or by outside pressures). The free peoples of the world look to us for support in maintaining their freedom. If we falter in our leadership, we may endanger the peace of the world, and we shall surely endanger the welfare of our own nation." [Ref. 14: 1965] The passage of the act is recognized as the basis for the Foreign Assistance Program, the parent of the Foreign Military Sales Program. With the inception of the North Atlantic Treaty Organization (NATO), the passage of the Mutual Defense Assistance Act of 1949 authorized grant military aid for countries considered vital to the national security. In addition, and again of note, was the permission of sales of equipment to other friendly governments. [Ref. &eval: 1975] It was the first time that Foreign Military Sales became a reality even through the volume was negligible, since most of the countries could not financially afford the purchase of expensive military arms. [Ref. 16: 1976]

The Mutual Security Act of 1954 established the authority of the State Department to control export licenses for arms, ammunition and implements of war.



Nevertheless, the concept of Foreign Military Sales as a distinct entity began to surface by the end of the 1950's.

The Foreign Assistance Act (FAA) of 1961, during the days of President Kennedy, consolidated economic aid and military assistance and sales under a single law. Secretary of Defense Robert S. McNamara created the office of International Logistics Negotiations to promote the sale of military equipment to foreign countries. The main objectives that he outlined were:

- Promote the defense strength of the allies consistent with the U.S.'s foreign objectives;
- Promote the concept of cooperative logistics and standardization with the allies;
- Offset the unfavorable balance of payments resulting from essential U.S. military development abroad.

The primary congressional legislation concerning the sale of U.S. arms to foreign countries is the act of 1968 known as the Foreign Military Sales Act. It clarified the reimbursable basis for arms sales and the policy of FMS as follows:

- Declare the ultimate goal of the U.S. to be a world free of the dangers and burdens of armaments;
- Affirm the increasing cost and complexity of defense equipment and recognize that there continues a need for international defense cooperation, to maintain peace and security;
- Establish that the U.S. will facilitate the common defense by entering into international arrangements with friendly countries on projects of cooperative exchange of data, research, development, production, procurement and logistic support;
- Authorize sales to friendly countries to equip their forces with due regard to the impact on social and economic development and on arms races;
- Declare that all such sales be approved only when they are consistent with the foreign policy interests of the U.S.. [Ref. 11: 1977]

Congressional scrutiny of foreign assistance continued through the early 1970's. It appears from the Foreign Military Sales Act of 1971 that the Congress had a grave concern over the role of foreign military assistance, and a desire to retain control over the funds and policy objectives involved in FMS. In the authorizing legislation for FY 1974, Congress advised the Executive Branch to return arms transfers to commercial sales channels and reduce FMS to the maximum extent (the Foreign Assistance Act 1974). Congress could veto the sales if both Houses voted to do so within twenty days (later increased to 30 days).

The International Security Assistance and Arms Export Control Act of 1976, known as the Humphrey-Morgan Act, was passed into law on June 30, 1976. The law emphasized the will of Congress to bring American arms export activities to the attention of the public. Some of the major issues that are involved in the Act state that:

- The title amended from "the Foreign Military Sales Act " to "International Security Assistance and Arms Export Control Act of 1976.";
- Export licences for all military sales over \$25 million must be made under the FMS program(except for sales to NATO countries);
- An extension of congressional veto over proposed FMS sales to cover all orders over \$7 million for major weapon systems, and over \$25 million for any other defense articles or sources. The veto must be voted within 30 calendar days (section 211);
- The cost and interest to be charged to the foreign country will include administrative services, plant and production equipment cost, and a proportionate amount of any nonrecurring cost of research and development;
- The DOD has in the past stationed Military Assistance Advisory Groups (MAAGS) in various countries around the world to provide advice and assistance to local governments in the purchasing and operation of American arms. Congress ruled that these MAAGS must be phased out by 30 September 1977, unless specific Congressional authorization has been voted in a country by country basis (Section 104).

The Act includes a general limitation section that emphasizes the following issues: a) human rights; b) prohibition of assistance to countries that provide sanctuary to international terrorists; c) prohibition against discrimination; d) prohibition of assistance to ineligible countries; e) prohibition of nuclear transfer. Figure 2.1 addresses the various acts discussed above in the context of their relationships to one another. [Ref. 11: 1976]

With the end of the Vietnam conflict and a growing fear of world instability, particularly in the Middle East and Africa, a new emphasis emerged. The focus was on arms control.

On 19 May 1977, President Carter issued a new Executive policy on the U.S. role in the international transfer of arms. President Carter's stance, in sharp contrast to those of the Nixon and Ford Administrations, was the first initiative of its kind coming from the Executive Branch. It was specifically directed at substantially reducing the U.S. role in international arms transfers. There were several specific exemptions, notably NATO, Japan, Australia and New Zealand. The major provisions of President Carter's program were as follows:



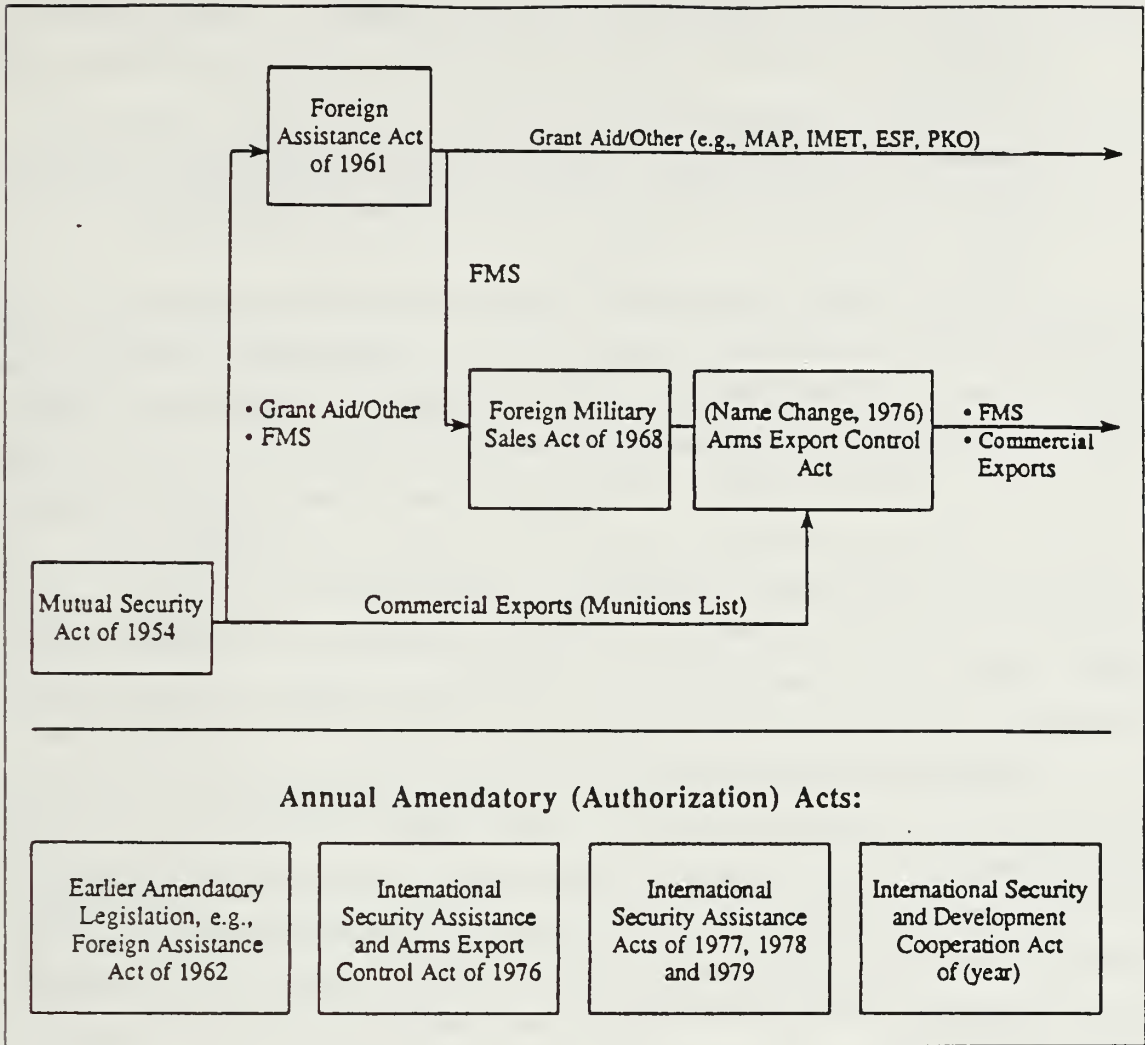


Figure 2.1 Security Assistance Authorization Acts Since 1954.<sup>1</sup>

- Reduce to FY 77 totals, the FY 78 Military Assistance Program (MAP), and FMS commitments;
- The U.S. will not be the first country to introduce weapons of increased sophistication into a region, nor will it permit the sale of U.S. weapons systems abroad until they are fully deployed with U.S. Forces;
- Development and significant modification of advanced weapon systems solely for export will not be permitted;
- Prohibit coproduction agreements of "significant" weapons in countries not specifically exempt from the Carter Policy;

<sup>1</sup>Defense Institute of Security Assistance Management, *The Management of Security Assistance*, 7th,ed., p.3-2, Wright-Patterson AFB, Ohio, November 1986.

- The U.S. “may stipulate” that weapon systems it is selling can not be retransferred under any circumstances by the purchasing nation to a third country;
- U.S. embassies and military representatives abroad will not be permitted to promote arms sales, and corporate representatives must obtain State Department authorization for any production of arms sales abroad.

[Ref. 17: p.18,19]

President Reagan has pursued a different approach to conventional arms transfers than did his predecessor. On July 8, 1981, he signed a directive that promoted arms sales as an integral element of U.S. foreign policy and defense strategy. [Ref. 18: p.62] The Reagan administration has modified five of the six points of the Carter policy. President Reagan removed the dollar restriction on arms transfers, eliminated the ban on development of export-only systems, removed this restriction on the introduction of advanced weaponry into a region as well as the requirement for a system to be in the U.S. inventory, issued instructions to U.S. embassies to provide limited assistance to commercial vendors marketing their systems, and ended the ban on co-production agreements. [Ref. 19: p.3]

However, the essential elements of the sixth control established by Carter have been retained. The International Traffic in Arms Regulation (ITAR) requires advance authorization from the State Department before industry presents marketing proposals to foreign nations for significant military equipment in excess of \$14 million, or before entering into manufacturing licenses, or technical service agreements. NATO nations, Japan, Australia, and New Zealand are exempt from this requirement. [Ref. 20: 47703,47704]

Under the Reagan Administration, the fundamental criteria of arms transfer decisions represents the foundation of security assistance policy as follows:

- Regional stability and conflict;
- U.S. Forces readiness;
- Impending military threats;
- Effective utilization by a recipient country;
- Human rights as provided by the FAA of 1961, Section 502B, as amended;
- Economic capacity and capabilities of the recipient nation.

A keystone of the Reagan policy is that the U.S. cannot defend Western security interests alone. Thus, it will give urgent heed to the security requirements of friends and allies not as an alternative to a U.S. commitment or capability, but as a

complement thereto. Henceforth, the U.S. assesses the transfer of arms in light of the contribution such transfer would make to the U.S. global or regional security. The first priority of transfers is to the major alliance partners, to those with which U.S. enjoys long association of cooperative and mutually beneficial relationships and to those nations which will permit access to support or basing facilities in the interest of mutual defense.

Lastly, because of diversity of U.S. interests and the security needs of the allies and friends, the assessment of needs is pragmatically but strategically derived, and tailored to the specific circumstance of each instance. However, the arms transfer policy will maintain inherently flexible to respond quickly to changing conditions and shifting Soviet strategies. [Ref. 1: p.1-59,1-60]

#### **4. Legislation**

With respect to the current U.S. FMS , one authorization act is active: the Arms Control Act (AECA), as amended. The AECA came into being under a different title, i.e., the Foreign Military Sales Act of 1968 (FMSA). Before 1968, the basic authority for foreign military sales was the FAA. The FMSA served to address the Foreign Military Sales Program together under a new and separate act. The earlier FMSA, through an amending action brought on by the International Security Assistance and Arms Export Control Act of 1976, is now known as the AECA. This 1976 Act also caused Sec.414 (which provided authority for commercial licensing through the international Traffic in Arms Regulations) of the Mutual Security Act of 1954 to be superceded, and continued this authority in a new Sec.38 (Control of Arms Exports and Imports--through commercial licensing, etc.) to AECA. The AECA, in addition to containing several restrictions on the way in which FMS and Commercial Sales are conducted, also contains the actual dollar authorization (in terms of an aggregate ceiling) for the FMS financing program.

#### **5. Authority and Responsibility**

In general, the legislative and administrative authority for FMS is provided by the Arms Export Control Act of 1976 (AECA). FMS cash sales are addressed in these legislations, not from a funding standpoint, but from a reporting, control and oversight perspective. [Ref. 21: p.3-1 - 3-3]

##### ***a. President***

As the chief executive, the President is responsible for all of the activities of the Executive Branch. The President has numerous assistants, cabinet members, and

other subordinate officials to oversee the conduct of the U.S. security assistance program (see Figure 2.2).

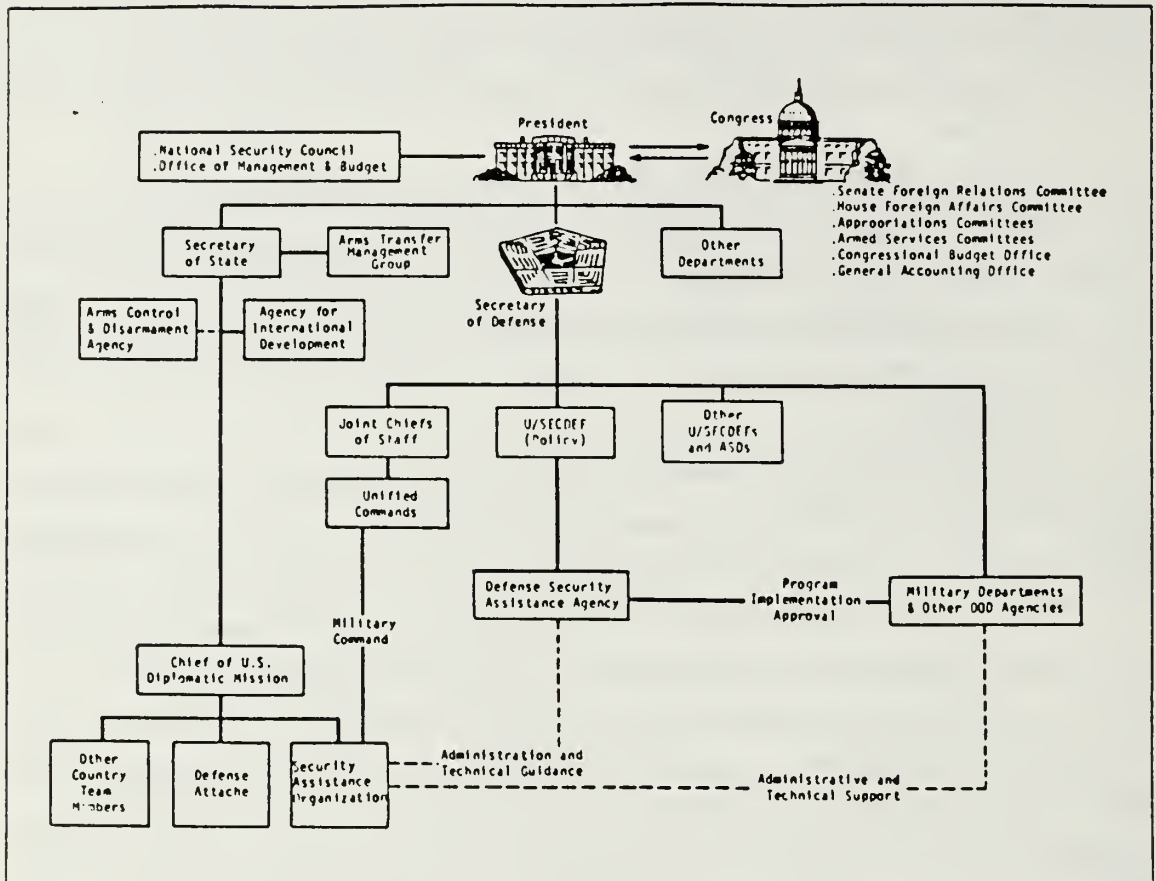


Figure 2.2 U.S. Government Organization for Security Assistance.<sup>2</sup>

The Arms Export Control Act provides the President the authority a) to sell defense articles, defense services, and design and construction services to eligible foreign countries and international organizations, b) to procure such articles and services for cash sales, c) to finance procurements by foreign countries, d) to guarantee lenders against the risks of nonpayment, e) to control the import and export of defense articles and services and f) to lease defense articles. [Ref. 9: p.8]

**b. Congress**

The Congress, as provided by Article I, Section I, of the U.S. Constitution, is vested with all legislative power. In terms of FMS, congressional power and influence are exerted in several ways:

<sup>2</sup>Ibid., p.5-2.



- Development, considerations, and action on legislation to establish or amend security assistance authorization acts;
- Authorization and appropriation;
- Hearings and investigation into special areas of interest, to include instructions to the General Accounting Office (GAO), the Congressional Budget Office (CBO), and Congressional Research Service (CRS) to accomplish special reviews;
- Ratification of treaties which may have security assistance implications.

Under the Arms Export Control Act of 1976, the President is required to notify Congress of major arms sales. The "thresholds" above which Congress must be given prior notification of a sale-(found in Section 36 B) are:

- Any letter of offer to sell "any defense articles or services under this act " for \$50 million or more;
- Any design and construction services for \$20million or more;
- Any "major defense equipment" for \$14 million or more.

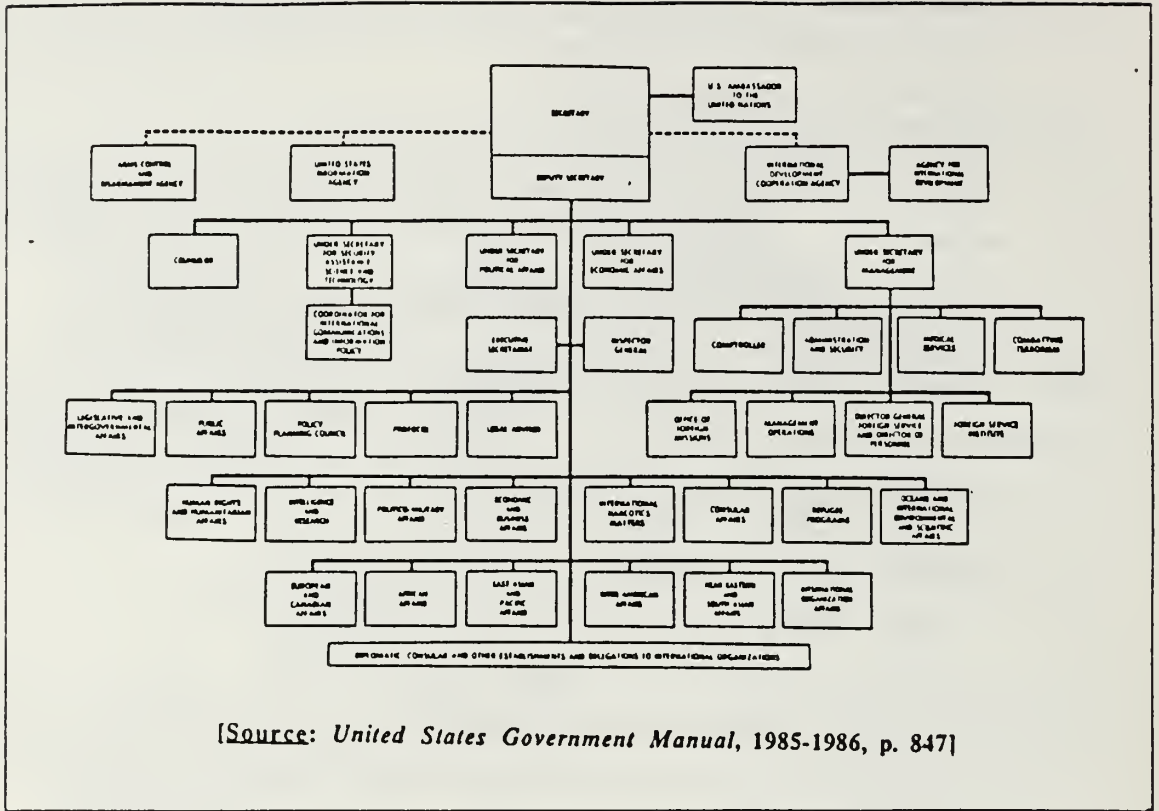
Under the same Act as amended, Congress was given the power to block such sales by passing a joint resolution of disapproval with 30 days of notification of the sales (15 days for NATO, Japan, Australia, New Zealand) [Ref. 22: pp.14-15]

### *c. State Department*

Under the authority of the President, the Secretary of State is responsible for the continuous supervision and general direction of foreign military sales, determining whether there shall be a security assistance program, or a sale or export, for a country and the value thereof and insuring such programs are effectively integrated both at home and abroad, and that the foreign policy of the U.S. is best served thereby (see Figure 2.3).

The Under Secretary for Security Assistance, Science, and Technology is the principal advisor and focal point for security assistance matters within the Department of State. The Under Secretary serves as Chairman of Arms Transfer Management Group (ATMG), whose purpose is to advise the Assistant Secretary of State in matters relating to implementation of the Administration's arms transfer policy; major arms transfer issues, and the Security Assistance planning, programming, management and budgetary processes.

The Bureau of Politico-Military Affairs assists the Secretary in carrying out his responsibility for supervision of the Military Assistance and Sales Program(MASP), and licenses the export of military equipment. It has two offices specifically concerned



[Source: United States Government Manual, 1985-1986, p. 847]

Figure 2.3 State Department.<sup>3</sup>

with security assistance:

- The Office of Munitions Control (OMC);
- The Office of Security Assistance and Sales(SAS).

[Ref. 1: pp.5-8,5-12]

#### d. Department of Treasury

The Treasury Department becomes involved in security assistance in its role as the "financial agent" for the U.S. government, and in the area of foreign trade, participates in the financial negotiations between the U.S. and foreign countries. It exercises broad control over export military and commercial programs, assuring that they are compatible with U.S trade and security policies. It also reviews trade agreements for credit risk evaluation, assuring the best utilization of U.S government backing to credit institutions. [Ref. 23: 1976]

<sup>3</sup>Ibid., p.5-6.



*e. Department of Commerce*

The Department of Commerce becomes involved with the U.S. security assistance program in several ways. One is through its interface with the Department of State and Defense with respect to civil items with potential for military application. Another area of involvement is through the Maritime Administration which has a responsibility to determine if foreign countries, through their freight forwarder agents, are properly utilizing U.S. flag shipping for U.S. funded security assistance programs. [Ref. 1: p.5-18]

*f. Department of Defense*

The Department of Defense is the principal actor involved in FMS. The department serves as the main coordinator for all the activities of the other departments concerning FMS. Figure 2.4 shows DOD organization for security assistance. Under the Section 623 of the FAA and Section 42 of the AECA, the Secretary of Defense has primary responsibility for:

- The determination of military end-item requirements;
- The procurement of military equipment in a manner which permits integration with service programs;
- The supervision of end-item use by recipient countries;
- The supervision of the training of foreign military and related civilian personnel;
- The movement and delivery of military end-items;
- The establishment of priorities in the procurement, delivery, and allocation of military equipment;
- Within the DOD, the performance of any other functions with respect to the furnishing of military assistance, education, training, sales, and guarantees.

Within the DOD, there are major offices involved in military assistance and/or the sale of military items:

- The Under Secretary of Defense for Policy;
- Assistant Secretary of Defense for International Security Affairs(ASD/ISA);
- Assistant Secretary of Defense (comptroller);
- Joint Chief of Staff(JCS), Unified Commands, and overseas activities;
- Defense Security Assistance Agency (DSAA);
- Security Assistance Accounting Center (SAAC);
- The military departments. [Ref. 1: p.5-19,5-20]

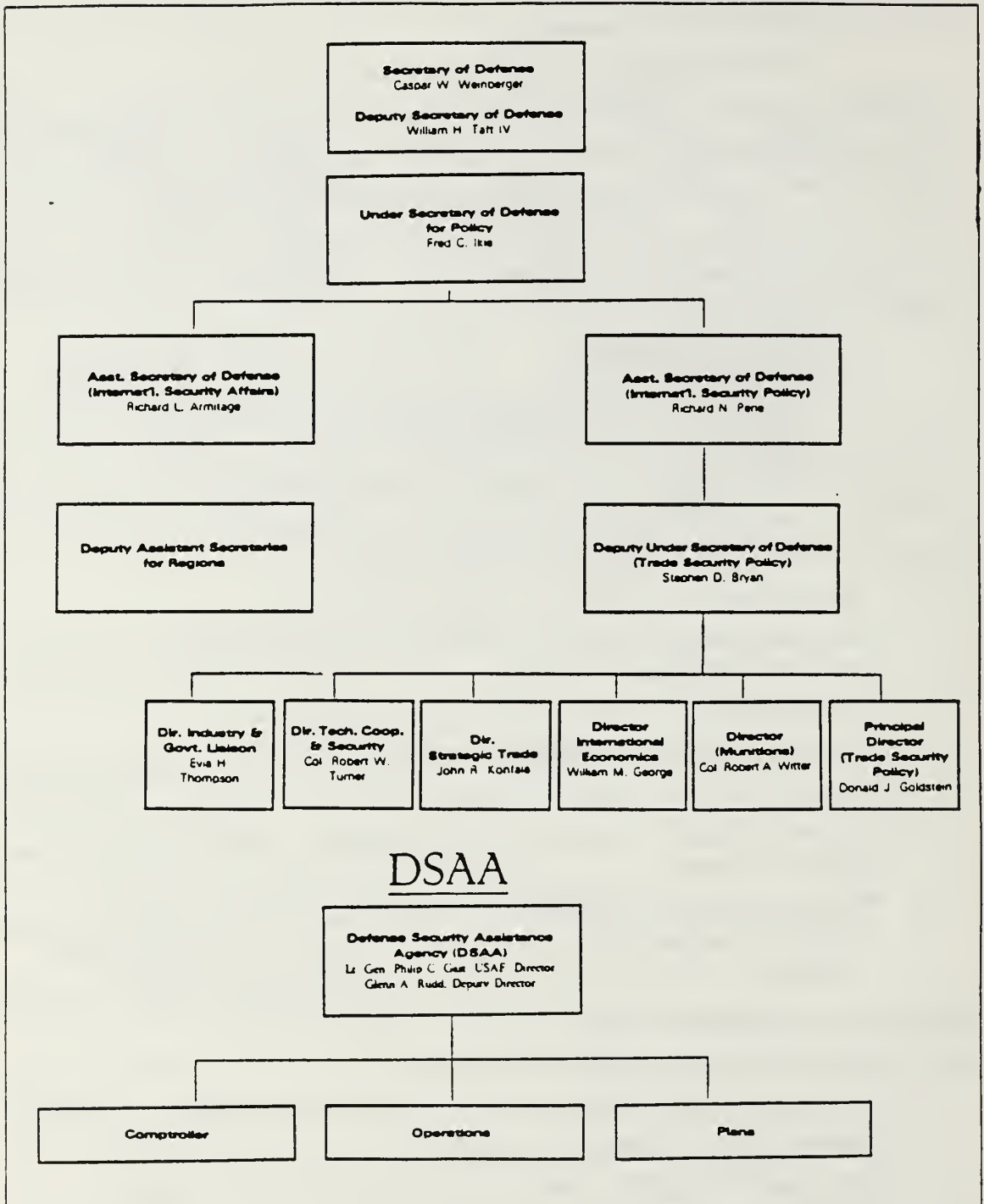


Figure 2.4 Department of Defense.<sup>4</sup>

<sup>4</sup>Michael Collins Dunn, *Defense & Foreign Affairs*, p.27, The Perth Corporation, Washington, D.C., 1986.

*g. The Military Departments*

The Secretaries of the military departments serve as advisors to the Secretary of Defense on all matters of security assistance impacting on, or related to, their Department and shall act for the Secretary of Defense where responsibility for actions is delegated.

In carrying out their responsibilities, the Secretaries:

- Provide the Secretary of Defense recommendations considered appropriate and necessary to ensure the successful conduct of security assistance, including its interface with and support of military department policies, objectives, plans, and programs;
- Provide data, upon request, pertaining to price, source, availability and leadtime for use in developing and reviewing security assistance programs, including FMS cases;
- Provide to elements of the Office of the Secretary of Defense, JCS, Unified Commands, and MAAGS, as appropriate, technical information as to weapons systems, tactics and doctrine, training, and pertinent logistic support;
- Conduct training, and acquire and deliver defense articles and services included in approved programs;
- Coordinate and establish delivery schedules and necessary international procedures for follow-up, expediting, and related actions during implementation of approved programs;
- Provide such other technical assistance and facilities to elements of the office of the Secretary of Defense as necessary to promote efficiency and economy in security assistance matters;
- Within policies and criteria established by the ASD(ISA), and under direction of the Director, DSAA, make sales of defense articles and services to eligible countries and international organizations;
- Integrate acquisition for security assistance with military service acquisition programs in accordance with policy guidance provided by Under Secretary of Defense for Research and Engineering (USDR&E);
- Maintain appropriate records and furnish prescribed records within the scope of their responsibilities;
- Obtain from Unified Commands and SAOs such data as may be needed to carry out assigned responsibilities;
- With respect to the area or areas assigned, provide administrative support needed to carry out security assistance functions, subject to the direction and policy guidance of the ASD(ISA);
- In accordance with approved tables of distribution and other authorizations, directives, and provide qualified military personnel to carry out security assistance assignments;

- Assist the ASD(ISA) and the Director, DSAA, as requested, in government-to-government or interdepartmental discussions involving security assistance policies, plans and programs;
- Assist the ASD(ISA) and the Director, DSAA, as requested, in government-to-government negotiations involving security assistance and the ASD(MRA&L), or designee, in government-to-government negotiations involving international logistics arrangements. [Ref. 1: pp.5-32,5-35]

## 6. Procedure

Military sales can take years to consummate. Even for relatively simple and inexpensive weapons systems, countries can spend months selecting the item, determining the amount of follow-on assistance to purchase, arranging financing, obtaining U.S. government approval, and awaiting production and delivery. The following U.S. government procedures are listed in the sequence in which they would typically be applied. But the order and duration of the early steps in this process vary widely. Some of these actions (such as a Defense Requirement Survey, Planning and Review Data, or a Letter of Intent) will not be taken for all sales. Some other DOD administrative procedures (such as equipment requisition, processing of bills and payments, and insurance coverage) have been excluded from this discussion. Details on both the included and the excluded procedures are described in the Security Assistance Management Manual (DOD 5105. 38-M) which is a basic source for this report. [Ref. 9: p.17]

### *a. Forward Planning*

Even before specific requests are made by a purchasing country, the U.S. may be involved in forward planning in order to help determine the needs of the buying country and the budget and procurement issues relating to the U.S. There are three separate "planning tracks", described as the "country track", "budget track", and "procurement track": the country track would involve the regional departments of the State and Defense Departments, the Operation branch of DSAA, the Commanders of the Unified Commands of the Armed Forces responsible for the area involved, and the Security Assistance Office (SAO) in the affected country. The "budget track" involves DSAA's Plans branch, the Office of Management and Budget, and at State, the Under Secretary of State for Security Assistance, Science and Technology (State/T) and Political-Military Affairs (State/PM). The "procurement track" includes State PM, the individual services, DSAA Operations and Plans, the Joint Chiefs of Staff, and the National Disclosure Policy Committee.



The actual planning is carried out by two types of groups the "Country Team" or Security Assistance Office for the country, and the "Washington Team", which may be a consultative or survey team dispatched for a particular reason or associated with a Joint Military Commission. All of the various agencies and players interact with each other in planning.

A key planning instrument is the Annual Integrated Assessment for Security Assistance (AIASA), prepared by the Country Team. Other planning documents include Consolidated Data Reports (CDRs), containing the AIASA information in abbreviated form for use in the Congressional Presentation Document (CPD), produced as part of the budget process each year and outlining in general detail what will be required for a given country in the form of security assistance. For selected countries, a Security Assistance Defense Analysis Paper may be prepared annually. [Ref. 22: p.7]

***b. Eligibility***

Any country desiring to buy or lease defense articles or services -whether FMS or commercial sales- must first meet the eligibility requirements detailed under the U.S. Arms Export Control Act (AECA).

The ACEA(section 3) states that no defense articles or services may be sold or leased by the U.S. government to any country or international organization unless:

- the President finds that the furnishing of defense articles and defense services to such country or international organization will strengthen the security of the U.S. and promote world peace;
- the country or organization has agreed not transfer the item without the President's consent;
- the country or organization has agreed to maintain the security of the item;
- the country or organization is otherwise eligible, i.e., no other restrictions make it ineligible.

Each year, in the Congressional Presentation Document for security assistance programs, the President submits a list of all countries that have been found to be eligible for arms sales or leases under criterion above. [Ref. 9: p.13]

***c. Request***

Based upon the nature of the request, and the military department that has cognizance over the defense articles or services, the process for negotiating and implementing a FMS case can vary widely. There are, however, some general

guidelines to be followed. The first step is to determine the U.S. approved channels of submission for the Letter of Request (LOR) for planning and review data (P&R), price and availability data (P&A), and for an offer which is the DD Form 1513 Letter of Offer and Acceptance (LOA). [Ref. 22: p.9]

Assuming that a country is eligible and other considerations are met, the "approved channels of submission" of a Letter of Request (LOR) vary according to whether the foreign country is interested in "Significant Military Equipment" (SME). SME refers to those types of equipment which are labelled as Significant Military Equipment in the U.S. Munition List, which is published as part of the International Traffic in Arms Regulations (ITAR). The route or channels of submission are shown in Figures 2.5 and 2.6.

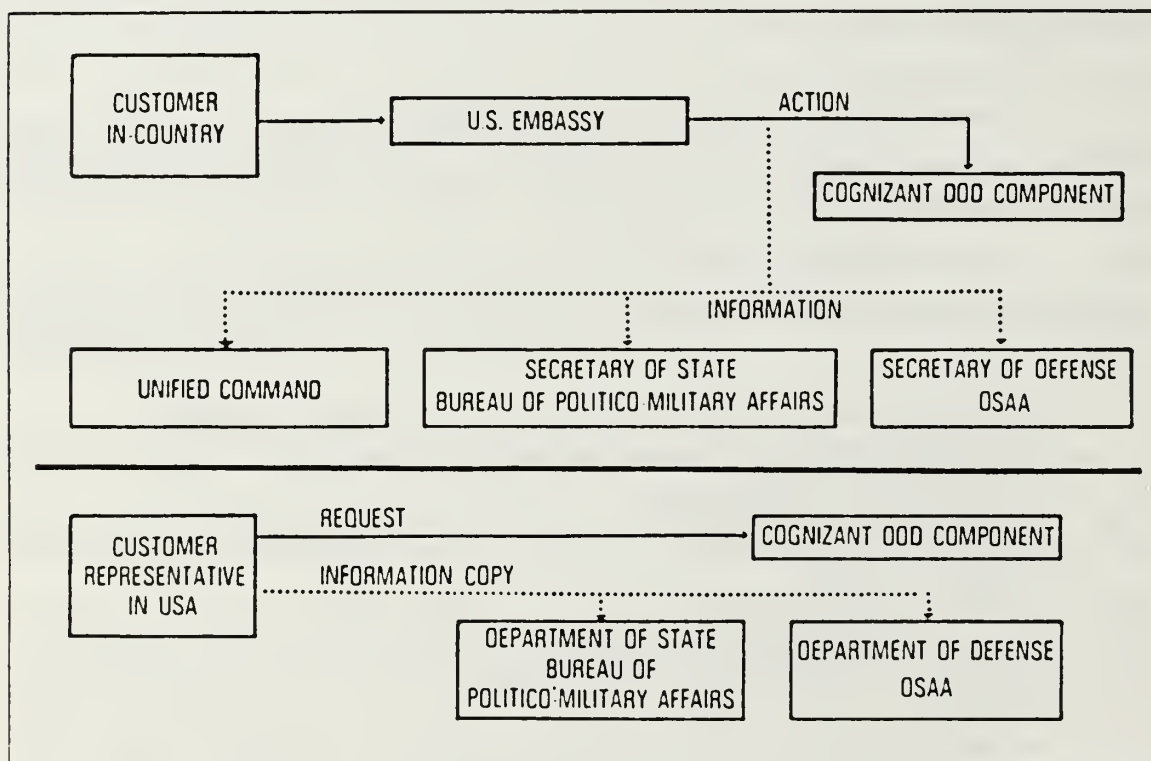


Figure 2.5 Channels of Request--Significant Military Equipment.<sup>5</sup>

After the initial request is received, there are several possible approaches. The buyer may request either preliminary informational data known as Planning and Review (P&R) data, or more specific and detailed Price and Availability (P&A) data

<sup>5</sup>Defense Institute of Security Assistance, *op. cit.*, p.8-3.



which offers precise estimates of the costs involved and the speed of delivery available, or may directly request the preparation of a Letter of Offer and Acceptance(LOA). [Ref. 22: pp.11-12]

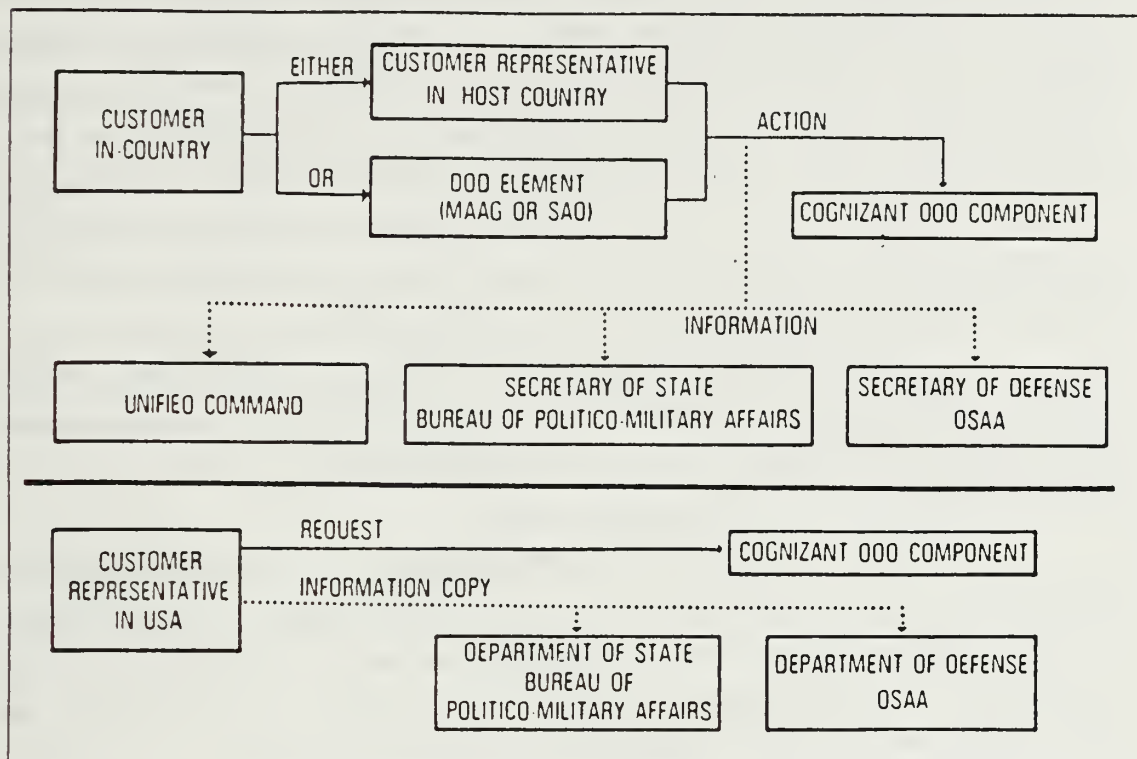


Figure 2.6 Channels of Request--All Other Foreign Military Sales.<sup>6</sup>

(1) *Planning and Review Data.* When a country is at early stage of considering a defense purchase, it may request Planning and Review (P&R) Data. A request for P&R data must be placed through the same channels as a request for a FMS. P&R data generally include: The item description, quantity, and cost; ancillary support equipment; accessorial charges such as shipping costs; charges for training and publications; estimated availability of the item; key assumptions in developing the data; and timing factors relating to price and production schedules. It is basically the same information that is provided as P&A data but, to save time and resources, the information is not made sufficiently accurate to use in preparing budgets or LOA. DOD components that develop this data are instructed to provide data that is accurate enough for planning of purchasing within 45 days of receiving a request.

<sup>6</sup>Ibid., p.8-4.

(2) *Price and Availability Data.* Information on the price and availability of U.S. defense equipment or services is provided with, or may be provided well before an LOA. These data must be requested through the same channels as a request for purchase. If the U.S. government plans not to sell the articles to the requesting country, it will not provide the P&A data. In this way, and sometimes in earlier discussions between U.S. and foreign officials, some sales are turned off before they are formally requested. Few requests to purchase U.S. defense equipment are refused after a country has requested and received P&A data. However, provision of the data does not commit the U.S. government to sell the items involved, and the government defers the decision to issue a LOA until the foreign country requests such an offer.

Section 28 AECA requires the President to provide Congress a list each quarter of all P&A estimates that the U.S. government provided to foreign countries or international organizations regarding major defense equipment worth \$7 million or more, defense articles worth \$25 million or more.

(3) *Letter of Offer and Acceptance(LOA).* The Military Department responsible for a sale begins preparing a Letter of Offer within a few days of receiving a request. After about 2 months, it submits an unsigned LOA to DSAA for review and approval. DSAA generally completes its review in the next 20 days, simultaneously with the advance 20-day congressional review period.

At the same time that Congress is notified under section 36(b) of the proposed sale, the assigned Military Department furnishes an unsigned LOA to the purchaser. At least 5 days before the statutory congressional review period has been completed, the Military Department submits a signed LOA to DSAA. State and Defense give the LOA a final review and approval and, if Congress has not acted to block the sale within the allotted period, the DSAA comptroller countersigns the LOA. The Military Department then sends the signed LOA to the purchaser. The purchaser is normally allowed 60 days or less to accept the offer.

Forms other than an LOA are sometimes used to consummate a foreign military sale. Examples of other documents are: Memoranda of Understanding (MOU) for Co-production, Cooperative Research and Development Agreements, and Engineering Assistance Agreements. DOD requires the subsequent completion of a DD 1513 if another document is used initially. Also, the review procedure and congressional notification process are the same regardless of the document initially used. [Ref. 9: p.20,21,31]

#### *d. Congressional Notification*

After DSAA/OPS has approved the offer, State Department Review is also involved. In the State Department, the regional bureau desk and PM Affairs carry out the review and then authorize the DSAA to provide Congress with the "informal" 20-day advance notification to Congress, if the sale comes above the thresholds specified by Section 36(B) - in commercial sales, Section 36(C) - of the Arms Export Control Act. After the 20-day period is over, DSAA submits the formal 36(B) notification to Congress as required.

Congress has required a wide range of reporting on arms sales: annual and periodic reports on overall transfers, as well as prior notification of with Congressional opportunity to block, major sales of equipment or services. Congress' authority to block arms sales evolved through the years, with the exact internal procedures modified as recently as a law signed by President Reagan on February 12, 1986. Under the Arms Export Control Act, the President was required to notify Congress of major arms sales. In 1976, under the International Security Assistance and Arms Export Control Act of that year, Congress was given the power to block such sales provided it passed a concurrent resolution of disapproval within 30 days of notification of the sale (15 days for NATO, Australia, New Zealand, and Japan). Under the Arms Export Control Act (AECA) as amended up to presstime, the "thresholds" above which Congress must be given prior notification of a sale - found in section 36(B)(1) - are:

- Any letter of offer to sell "any defense articles or services under this act" for \$50-million or more;
- Any design and construction services for \$20 million or more;
- Or any "major defense equipment" for \$14 million or more.

Additionally, President Reagan signed into law the latest amendment, changing "concurrent resolution" to "joint resolution" throughout, and thus restoring the expedited rules for both Houses. [Ref. 22: pp.12-15]

#### *e. Acceptance*

If the offer is acceptable, the purchaser must complete and sign the DD 1513 and forward three (or more as stated on the LOA) signed copies to the military department and three signed copies to Security Assistance Accounting Center (SAAC) with any required initial payment before the expiration date listed on the offer. Payment must be in U.S. dollars and may be transmitted by check or wire transfer. After an offer is signed/accepted, DSAA must be notified by message of the acceptance within five working days.

All cases not received within ten days of the expiration date are automatically cancelled. If a purchaser knows that an expiration date cannot be met, a request for extension should be made to the cognizant DOD component to keep the "Offer" open. Policy considerations or the time sensitivity of contractor provided price quotations on which the offer is based may preclude the time extension of the expiration date may be granted.

Upon receipt of the properly signed DD 1513 and the cash deposit, DSAA enters the case in the DSAA automated data file in accepted status and the case is then ready for implementation. [Ref. 1: p.9-16]

*f. Implementation*

Once the LOA is signed and sealed, only delivery remains. SAAC issues the obligational authority (OA) to the cognizant DOD component as evidence that proper acceptance of the LOA has been received.

The procurement and logical aspects of delivery are as complex as other stages of the process but need not be described in excessive detail here. Procurement procedures depend on the item but are handled in the same way as regular U.S. government procurement, with program directors and systems managers as needed dealing with the U.S. Military Assistance Advisory Group (MAAG) in the buying country and overseeing the progress of the deal.

The basic procurement varies according to the case. Items may be procured from new production or taken from U.S. government stocks, and the complete system then assembled. FMS needs may be consolidated with U.S. government procurement requirements or placed on a separate contract whichever is more efficient.

In 1981, legislation authorized the creation of the Special Defense Acquisition Fund (SDAF) as a revolving fund separate from other accounts under DOD control to finance the acquisition of defense articles in anticipation of their sale through FMS. This was done to make it possible to fill urgent requirements more quickly, smooth out production rates and reduce procurement time. The SDAF is under the direction of the Director of the Defense Security Assistance Agency (DSAA). Usually SDAF items are actually sold prior to the actual delivery from production.

Various types of case directives are prepared to spell out all the financial and logistic considerations, these go beyond the DD 1513 specifications. Reviews of the program occur at various times. When all is finally delivered, billed and paid, SAAC issues a "Final Statement" and the FMS case is closed. [Ref. 22: p.13]



## 7. Trends

The nature of arms trade in the late twentieth century may be characterized by five salient developments: the rapidly increasing number of competitors for sales and the emergence of a wide choice of weapons for recipients; the growing number of suppliers that have entered the market for largely economic reasons; the continuing international debt crisis, particularly among Third World nations; the growing necessity for suppliers to provide offsets to recipients as a condition of sale; and, of particular concern for the United States as a competitor in the new arms sales market, the growing reluctance of the Congress to confront complex issues of security assistance in the Middle East, with the likelihood that this significant share of the market will become dominated by economically motivated competitors.

The structure of the international arms market has undergone significant readjustment as the Soviet Union and the U.S., which were responsible for over 80 percent of deliveries at the close of the 1960's, presently account for less than 55 percent. Although the Soviet portion of the market has remained relatively constant at about 33 percent and the other Warsaw Pact nations at about 8 percent, U.S. market share drastically declined from about 60 percent in 1969 to 22 percent by 1984. [Ref. 24: pp.1-2]

The annual value of the production of major weapons in the Third World has risen fairly constantly from 1950 to 1984. In 1950 production was valued at about \$2.3 million, or roughly equivalent to the cost in the mid-1980s of one main battle tank. In 1984 this value was about 500 times higher. The total value for the first two decades (1950-69) approximately equals the value for any single year in the 1980s. The total value during the past five years (1980-84) under study is about 25 times as high as the value for the first 15 years of the time series (1950-64). Despite this growth, arms production in the Third World is limited at 1.5-2 percent of the global production of major weapons in the early 1980s. [Ref. 25: p.7]

Arms transfers have been a central instrument in promoting U.S. postwar foreign and national security policy objectives. These transfers have been in the form of grant assistance, military assistance funded through the U.S. armed forces budget appropriations, and arms sales. Since 1974 the FMS program and the financing tools that support it have for the most part replaced the grant programs of military assistance that rebuilt the shattered armies of U.S. allies in the North Atlantic Treaty Organization (NATO) during the two decades following World War II and later



provided massive amounts of military equipment, training, and support services for the Republic of Vietnam and other U.S. allies directly involved in the Vietnam War.

The rise of sales, a relatively recent phenomenon, coincided with pressures within the U.S. government during the mid-1960s to find a less monetarily costly aid instrument and to find relief from the adverse impact billions of dollars of grant military assistance was having on the U.S. trade balance. Foreign military sales provide such relief. In FY 1959, FMS deliveries accounted for less than 10 percent of all U.S. military assistance deliveries worldwide. By 1974, more than half of all deliveries of military equipment, supplies, services, and training to the world were provided under the FMS program. Since then, FMS has dominated U.S. security assistance activities. [Ref. 24: p.14]

Another significant trend has been the qualitative rise which has accompanied the quantitative expansion of arms. Whereas many of the weapons transferred in earlier periods were second-generation or obsolete, today they are often the most advanced and sophisticated in the inventories, or new production runs, of the supplier states.

In the 1950s and 1960s, most arms that were transferred went to developed countries, usually NATO and Warsaw Pact allies of the suppliers, or to countries with which there were special military links, as in the case of Vietnam. Today most arms are going to developing countries, including areas of real or potential instability. The largest expansion of arms exports has been to the Middle East/Persian Gulf where Iran, Saudi Arabia and Israel have been the major recipients. Transfers to Africa, Latin America and elsewhere, although comparatively small in absolute terms, nevertheless represent substantial quantitative and qualitative increases in flows into these areas. [Ref. 13: pp.2-3]

Lastly, in the mid-1980s commercial arms sales began to rival the long-dominant security assistance program. Licensed export appropriations approached the value of FMS agreements, commercial arms exports were conservatively reported at more than 30 percent of FMS deliveries, and the number of contract personnel implementing commercial arms exports abroad was about double the security assistance personnel contingent overseas. If these trends continue, commercial arms exports will overtake the FMS program as the main channel of U.S. arms transfers in the 1990s. [Ref. 24: p.204]

## B. U.S. FMS AND ROK

### 1. History

Historically, official diplomatic relations between the U.S. and Korea were first established in 1882. However, in real terms, relations between the U.S. and an independent Korean state began not with the signing of the Schufeldt Treaty on 22 May 1882, but with the landing in Korea of the first U.S military contingent on 8 September 1945. [Ref. 3: p.2]

#### *a. Period I: Occupation, and U.S. disengagement (1945-50)*

The U.S. security interest in Korea has evolved from an American "Japanocentric" strategy which has sought to maintain an effective and credible deterrent force to certain Sino-Soviet expansion. However, during the postwar period, according to U.S. strategic doctrine, Korea was not considered very important. The equivocality about Korea's strategic importance affected not only the U.S. military presence, but also its assistance programs. Most seriously affected was U.S. military aid. In addition to the inherent problems of higher aid priorities and limited funding resources, this aid was plagued by low estimates of Korea's strategic value and by continued concern about a possible South Korean attack northward. Accordingly, despite official endorsement of Korean independence, the U.S. restricted its military objectives throughout this period to the creation of a minimal, internal security force. The U.S. provided the ROK army only light weapons that could not be used for offensive purposes. It restricted the Korean Coast Guard to a few small PT boats. And it limited the Air Force, which was not created until October 1949, to a few light planes and propeller-driven aircraft. Moreover, because of the low priority assigned Korea by the Joint Chief of Staff, execution of the military-aid program approved under the Mutual Defense Assistance Act was hindered by the requirement that deliveries await new contracts, rather than draw upon existing military stocks. Table 1 shows defense expenditure of the Republic of Korea during 1949-1955.

As a result, the Republic of Korea Army, which numbered less than 100,000 men by mid-1950, was armed with weapons for a force only half that size. It had no tanks, no medium or artillery, no large mortars, and not even a single combat aircraft. Despite congressional approval of nearly \$11 million of military aid in March 1950, no additional direct military assistance reached Seoul until after the Korean War began. [Ref. 3: p.35]

TABLE 1  
ROK DEFENSE EXPENDITURES, 1949-1955

(In million won: Approximately 274 won = US\$ 1)

Year	Defense Expenditure	Total Budget	Counter-part Fund (US Aid)
1949	23.95	91.11	0.22
1950	132.43	242.96	13.15
1951	329.84	617.86	—
1952	946.28	2,150.76	306.95
1953	3,260.54	6,068.31	795.89
1954	5,991.81	14,239.16	4,470.43
1955	10,637.88	28,143.94	15,053.63

*b. Period II: Hot War, and U.S. Reinvovement (1950-1968)*

During the Korean War, U.S. security policy toward Korea reversed dramatically, both creating an awareness of the strategic importance of Korea to U.S. containment objectives and by instilling a general brothers-in-arms sentiment. As a result of the North Korean invasion, the ROK became not only a central point of the U.S. forward defense zone but also a trusted and a valued ally. In the decade and a half thereafter, the U.S. assumed a dominant role in Korean military, economic, and political development in a relationship characterized as much by its closeness as by its fundamental asymmetry. Major arms transfers to the ROK increased dramatically over the previous period.

As Table 2 indicates, this represented more than 27 percent of all U.S. military aid given to East Asia and the Pacific during this period, and over 30 percent in the period before Vietnam started to absorb increasing amounts of U.S. assistance. In the process of assuming such a large responsibility, the U.S. played a major role in describing the size, configuration, and weaponry of the ROK military forces. It also dictated the contents of the deterrence strategy. [Ref. 3: pp.36-39] These transfers included F-5 fighters and F-86 Sabre fighter-bombers, 203mm howitzers, and advanced missiles such as the Nike Hercules, Honest John, and Hawk. Including Military Assistance Program (MAP) funding and credit assistance, U.S. military aid to Korea between 1950 and 1968 totaled some \$2.5 billion.

TABLE 2  
U.S. MILITARY ASSISTANCE TO THE ROK, 1949-1968.<sup>7</sup>

<i>Fiscal Year</i>	<i>Total Military Assistance to Korea (millions of dollars)</i>	<i>Total Military Assistance to East Asia (millions of dollars)</i>	<i>Percent to Korea</i>
1949-1952	11.7	160.7	7.2
1953-1957	527.8	2,403.7	21.9
1958	331.1	627.8	52.7
1959	190.5	606.7	31.4
1960	190.2	501.6	37.9
1961	192.2	495.4	38.8
1962	136.9	523.3	26.2
1963	182.5	651.8	28.0
1964	124.3	563.7	22.1
1965	173.1*	648.9	26.7
1966	153.1*	535.6	28.6
1967	149.8*	673.0	22.3
1968	197.4*	1,026.9	19.2
Total 1953-1961	1,431.8	4,635.2	30.9
Total 1949-1968	2,560.6	9,419.1	27.2

*Source.* SIPRI, *The Arms Trade with the Third World* (London, Paul Elek Limited, 1971), pp. 146-147.

\*Excludes military assistance funding related to South Korean forces in Vietnam.

*c. Period III: Detente, Interdependence, and U.S. Retrenchment  
(1969 - present)*

This period is very important in describing the relationship of U.S. FMS and ROK. The role of U.S. military assistance changed significantly during this period. While the ROK began in 1971 to purchase defense equipment under FMS programs, grant aid for operations and maintenance ended in 1974, and that for investment stopped two years later.

Since 1968, arms sales began, while military grants were decreased. Now, the declining use of military assistance to an increasing reliance on arms sales became the new trend of U.S. policy. [Ref. 3: p.49]

There were several reasons for such policy of arms transaction of the U.S.. First, the Nixon doctrine called for a shared responsibility of defense against communist forces with regard to the arms transaction to the ROK. Second, the domestic factor also played a key role in including such a policy. The Vietnam War,

<sup>7</sup>Gerald L. Curtis and Sung-joo Han, *The U.S.-South Korean Alliance*, p.40, Lexington Books, Lexington, Massachusetts, 1983.



the economic difficulties, deficit of balance in payments due particularly to oil from abroad and other reasons strained U.S. defense expenditures. With these problems, the U.S. reduced its force stationed in the ROK by one-third in 1971. Third, the growth of ROK GNP was 7 percent in 1972, and an incredible 15.2 percent in 1976. With enormous domestic economic development, the ROK earned large sums of foreign currency to support arms purchases. Fourth, North Korean provocation was intensified due to its strategic attempt to unify Korea by "Communisation" in the Korean Peninsula. Such provocation, and later President Carter's announcement of U.S. ground troop withdrawals from Korea created an enormous sense of insecurity in the ROK. This in turn created demands for arms purchases.

TABLE 3  
MAP AND FMS TO THE ROK, 1968-1977.<sup>8</sup>

(Dollars in thousands)

Year	MAP	Educ. & Training	Excess Def. Art.	FMS Agr.	FMS Del.	Commercial Exports
1968	357,270	6,599	51,377	1,504	1,428	588
1969	425,222	7,244	124,964	3,093	716	1,907
1970	313,071	4,965	34,813	—	1,934	1,033
1971	434,804	5,359	137,115	393	408	2,037
1972	285,727	4,519	226,113	8,765	371	685
1973	296,742	2,032	32,142	1,589	2,378	187
1974	92,008	1,527	19,505	100,392	13,318	1,090
1975	79,185	1,291	7,976	216,010	57,452	3,550
1976	59,817	2,058	1,153	634,625	161,260	19,909
1977	1,185	1,395	—	653,987	184,818	62,500

Source: Data taken from *Foreign Military Sales and Military Assistance Facts*, December, 1977, published by Data Management Division, Comptroller, Defense Security Assistance Agency.

The policy shift from military assistance to military sales to the ROK came quickly and was quite large in terms of the volume of arms transactions. As can be seen from Table 3, the military assistance was reduced from about \$296 million in 1973 to merely \$92 million in 1974. It provided \$15 million in loans to purchase arms for

<sup>8</sup>Tae-Hwan Kwak, *U.S.-Korean Relations 1882-1982*, p.309, Kyungnam University Press, Seoul, Korea, 1982.



the ROK. It was steadily increased in the following years. Military loans reached \$59 million in 1975.

More significantly, the FMS agreements were drastically increased. For example, the FMS agreements to the ROK were a merely 295,000 dollars in 1967. It was increased up to \$1.5 million in 1968. The military sales agreements between the U.S. and the ROK mounted to \$100 million in 1974. It reached more than \$653 million in 1977. [Ref. 4: p.310]

Between FY 1978 and FY 1979, ROK FMS purchases rose to \$390 million, ranking the ROK behind only Saudi Arabia, Israel, and Egypt as an FMS customer. In addition, direct military sales to Korea outside FMS were significantly boosted. Weapons involved in all these transactions included: TOW, Sidewinder, and Sparrow missiles; F-4 and F-5 fighters; C-130 transports; armored personnel carriers and sophisticated radar communication equipment. In 1978, the U.S. established a Defense Field Office (DFO) to manage this huge volume of security assistance, monitor the delivery of equipment, and assist in its integration into the Korean armed forces. [Ref. 3: p.52]

## **2. Impact on ROK**

### ***a. Establishment, Development of ROK forces***

In January 1945, the U.S. fostered the establishment of a national military force (the National Constabulary) and provided it both arms and training. Thereafter, the U.S. encouraged the development of the Constabulary into more of a full-fledged army (the National Defense Force) and transferred to it a range of older weapons. [Ref. 3: p.33]

However, throughout the war, U.S. priorities remained with the supply of its own troops. Weapons provided to Korea were relative to its military needs and capabilities. By 1954, ROK army manpower strength reached its peak of 650,000 men. It expanded into twenty full-combat divisions and ten reserve divisions. These divisions were totally equipped by U.S. arms. [Ref. 4: p.306]

After the War, the U.S. began to devote extensive time and resources in order to improve ROK security posture. Military aid to the ROK was necessary not only to enable its military to meet possible aggressions from the North, but also to make the U.S. commitment meaningful in accordance with its Mutual Defense Treaty. Further, the U.S. played a major role in prescribing the size, configuration, and the weaponry of ROK military forces. Also, in this early period, each year several hundred

U.S. military advisors known as the Korean Military Advisory Group (KMAG) participated in training the ROK army. [Ref. 26: p.20]

By 1968, The ROK's forces numbered roughly 620,000. The army alone totaled some 550,000, and consisted of nineteen front-line infantry divisions, two armed brigades, and forty artillery battalions in addition to four other tank battalions, held in reserve; the navy totaled 17,000, the marine corps 30,000, and the air force 23,000, the latter including 195 combat aircraft. With this capability, the ROK felt strong enough to commit two infantry divisions to the defense of South Vietnam, where they demonstrated effective fighting capabilities. [Ref. 3: p.39] During the Vietnam conflict, even though arms were supplied from 1965 as a quid pro quo for the deployment and use of ROK troops in Vietnam, the U.S. promised to help the ROK to modernize its military capability. [Ref. 4: p.308]

In 1976, the ROK launched its five-year Force Improvement Plan (FIP). With an initial fund of \$7.6 billion, the FIP attempted to establish various projects such as the purchase of more modern fighters and TOW anti-tank missiles, upgrading defense and tank forces, domestic production of some artillery and small arms, and enhanced logistics and war reserve munitions. After its completion, the ROK commenced another plan to end in 1986. Under this modernization plan for 1982-86, Korea plans to continue to coproduce F-5 Tiger II fighters, to purchase F-16 aircraft and TOW missiles, and to modify its HAWK SAM missiles. [Ref. 4: p.315]

#### *b. Weapon Systems*

Two major improvement periods for anti-armor occurred. The first one was in 1976 when the Hughes 500M/D Armed Helicopter and the ground mounted TOW ATM were introduced. The second one was in 1978 when A-10 aircraft were acquired.

In the area of air defense, its improvements were noted during the following periods:

- 1965 - Nike-Hercules SAM and Hawk SAM;
- 1975 - AIM 96 sidewinder AAM and Vulcan 20mm AAG;
- 1976 - additional Nike-Hercules;
- 1977 - MIM 23B HAWK SAM;
- 1979 - Missile Minder.

In the category of armor, in 1971, the U.S. transferred M-60 tanks from the 7th Division and sold the M48A2c tanks. In 1976, more M-48 tanks were sold to the

ROK and \$35.6 million was made available to convert M-48 tanks to M-48A3/A5 tanks. Additional M-48A3 tanks were sold in 1978.

In artillery, the first improvement was Honest John SSM in 1958 and the second was 105mm howitzer and 155mm howitzer in 1965. The third was 203mm howitzer in 1966. The next was 203mm howitzer and N107 howitzer in 1971. The fifth was the transfer of Honest Johns in 1977 and the last was in 1978 when M-109A2 SP howitzers were transferred.

Meanwhile, improvement in aircraft are as follows:

- 1955-1960 F-86F/D Sabre;
- 1965, 1968 F-5A/B;
- 1969, 1971 F-4E/D;
- 1972 F-5E;
- 1975 F-4E, F-5E Tiger2;
- 1977 F-4E;
- 1978 A-10A;
- 1979 F-4E, F-5E/F;
- 1981 F-16.

In the category of naval improvements, seven periods were noted. They are:

- 1963 - "Fletcher" class destroyer, "Rudderow" class frigate, "Auk" class escort vessel, minesweepers;
- 1968 - The transfer of additional destroyers;
- 1971 - The loan of U.S. destroyers;
- 1974 - The transfer of SSM and launchers to Equip PSMM ships;
- 1975 - The transfer of destroyers and Harpoon SSM;
- 1976 - The transfer of missile boats and the agreement for others to be built under ROK licenses;
- 1978 - The transfer of missile boats. [Ref. 27: pp.10-15]

### *c. Introduction of Modern Military Capabilities*

Though the Republic of Korea received major weapons from the U.S. between 1956 and 1960, the only modern equipment transferred to the Peninsula was F-86 Sabre fighter-bombers. Missile systems had been in the Korea before the 1960's. However, it is significant to note that the South finally received its own missile systems in 1961. The ROK navy was first provided modern warships in 1963. Of the above mentioned equipment and arms transferred, only the missile systems were still being utilized by the U.S. own armed forces. [Ref. 28: pp.250-251]

During the period of and immediately following the Vietnam War, there was a significant influx of new technology to the South. In some cases, it was simply a case of replacing an obsolete system with a more current one. In other cases, the importation of high technology aircraft (F-4D) led to a mini-arms race. The goals established for the Republic of Korea's FIP were based on an out-dated evaluation of North Korean capabilities held at the end of the 1960s. [Ref. 29: p.175]

In more details, new major technology that was introduced either in coproduction agreements or in the introduction of military equipment are as follows:

- 1958 Honest John SSM;
- 1965-1968 F-5 Freedom Fighters;
- 1971 F-4 Phantoms, M-60 tanks, M107 howitzers;
- 1972 Hughes AGM-65 Missiles;
- 1974 Standard ship to load missile;
- 1975 F-5 Tiger 2 aircrafts, Harpoon SSM, Vulcan 20mm AAG, Coproduction of a solid fuel rocket motor plant;
- 1976 TOW and Lance missiles, Coproduction of Hughes 500/MD Armed Helicopters;
- 1977 Laser bomb kits, MIM 23 B HAWK SAM;
- 1978 A-10A fighters, M-109A2 SP howitzers;
- 1979 AN/TSQ-73 Missile Minder, Coproduction of F-5E/F aircrafts ;
- 1981 F-16 aircraft. [Ref. 27: pp.13-14]

#### *d. Military Expenditure and Arms Race*

The ROK military budget was relatively modest until 1975, with a 4% to 5% rate of annual expenditure increases. Extrapolating from the 1960's and 1970's. and based on that rate, the 1975 and 1976 ROK budgets would have been roughly \$500 million. However, in 1975 a sudden budget shift occurred in reaction to the American withdrawal from Vietnam. In that year, the ROK defense budget rose to over \$1.5 billion. This exponential trend has continued since the mid-1970's with the ROK defense budget exceeding \$2 billion in 1977, \$3 billion in 1979, and \$4.4 billion in 1981.

When one side obtained a specific system that was perceived as tipping the military balance, pressure was placed on that side's supplier to provide an equalizer or better system. The general pattern of ROK and North Korean military growth indicates that in the late 1970's and early 1980's both were locked into an exponential



arms race. Both Koreas were quite clearly aware of the situation, but few efforts have been made to break the cyclical logic of matching military escalations. [Ref. 4: pp.268-270]

*e. Influence on Internal Events*

The Stockholm International Peace Research Institute suggested three broadly defined motivations for arms transaction policies of a state. One of the motivations is an attempt to control political and military events by supplying arms. Second, transaction of arms can be motivated frequently for purely economic profits. Third, some states attempt to restrict arms flow or at least be very selective in transferring weapons to others. [Ref. 4: p.283]

During 1950-1968, along with U.S. acceptance of responsibility for South Korea's economical reconstruction came U.S. intervention in the ROK's domestic political processes. This intervention was both most frequent and most extensive in the area of economic policymaking.

U.S. intervention in ROK policy processes was not confined, however, to the economic sphere. The U.S. frequently intruded into more strictly political areas as well. The U.S. played an obviously central role, for example, in the decision of President Rhee to accept the armistice arrangement ending the Korean War in 1953. It played a similar, if less-known, role in the resignation of Rhee in 1960 and the establishment of a civilian government three years later.

Over the course of the mid-1970s, a number of developments in Korea, the imposition of martial law in 1972 and the promulgation of the Yushin Constitution, tied in a unique way U.S. weariness with its costly involvement in large and its moral concern with the state of human rights in Korea. The U.S. Congress included in its fiscal 1975 aid package an amendment requiring that the last \$20 million of that year's \$165 million authorization for the ROK be withheld until the South improved the human rights situation in that country. This \$20 million was not ever approved.

*f. Economic Development*

U.S. military assistance had significant economic implications. Under the U.S. protection and with U.S. support, the ROK was able to devote the lion's share of its efforts to economic development. Because of U.S. assistance, for example, as late as 1965 roughly 61 percent of ROK's \$112 million defense budget was covered by U.S. Military Budget Support derived from economic assistance; the ROK itself provided only \$41.5 million, or 1.5 percent of the ROK's GNP, from its own resources. In



addition, the U.S. provided some \$173 million in security assistance for a total \$243 million. This represented roughly 85 percent of total U.S. and Korean spending of the Republic of Korea's defense. This freed scarce resources for development objectives. It also meshed well with the ROK's own strategy of focusing resources on economic development. Throughout this period, the Republic of Korea government consciously restricted the defense budget to 4 percent or less of the GNP, while depending on the U.S. to equip and fund heavily the Republic of Korea forces. [Ref. 3: p.41]

*g. Weapon Dependence*

The ROK has fundamentally relied on U.S. security assistance for its weapons acquisition, the bulk of it obtained through grant assistance. Not until 1975 did the ROK begin to obtain weapons in any quantity other than through grant assistance from the U.S.. The Vietnam era represented the peak period of U.S. deliveries of weapon systems and services to the ROK. Through the period of U.S. direct military involvement in the conflict, deliveries of weapons, equipment, and services provided to the ROK through U.S. grant assistance programs were exceedingly large. Since 1978, the delivery of weapons, equipment, and services to South Korea from the U.S. has steadily declined.

A weapon category breakdown of the period FY 1950 to FY 1963 indicates that only a small proportion of security assistance provided the ROK by the U.S. was combat equipment. In fact, 44 percent of all military deliveries were support equipment. Support services constituted 17 percent of all deliveries. Combat aircraft, combat ships, combat vehicles, weapons, and missiles constituted only 10 percent of all deliveries for the period.

Since FY 1963, there has been a significant shift in Korean acquisition patterns of U.S. military items. In particular, combat equipment became the largest category of items received, amounting to 35 percent for the period. Concomitantly support services increased to 24 percent, while support equipment deliveries declined to 19 percent.

Data on U.S. arms transfers to the ROK, as recorded by the DOD, identify major patterns of Korean acquisition of military equipment. For example, only in FY 1968 did the value of combat ship acquisitions equal \$35 million. After FY 1972, support ship and combat ship acquisitions from the U.S. became insignificant. On two occasions, Korean orders of combat aircraft have been quite substantial.

The primary sources of weapons since 1970 has been the U.S.. Brazil sold the ROK two types of trainers in 1983. France sold the South the MM-38 Exocet, and Italy sold the South the FIAT 6614 APC. Apart from those three purchases, all identified Korean purchases of major weapon systems since have been from the U.S..

Since the early 1970s, the ROK has developed a significant military production capability. A significant portion of this capability has been obtained through license and assembly agreements with the U.S.. However, in 1976, the ROK obtained a licenses agreement with Italy to produce the type 6614 armored personnel carrier. Other Korean military production capabilities range from a major modernization and upgrade of the M48A5 main tank to an effort at indigenous design and production of a submarine. [Ref. 24: pp.142-144]

#### *h. Military Balance*

During the immediate postwar period, when the South was not considered very important according to U.S. strategic doctrine, North Korea was the only developing country to receive arms supplies from the Soviet Union. The Soviets continued to supplied substantial quantities of arms during the Korean war. After the Korean Armistice in 1953, the Soviet Union continued to support the North but showed restraint in regard to further military aid due to its policy of avoidance.

The imbalance between the South and North was one of the major causes of the Korean War. American military supplies to the ROK rose substantially through the second half of the 1950's following the Mutual Defense Treaty of 1953. The ROK received some very capable weapons systems such as the F-86 D/F, missiles, and various naval ships including destroyers. In the first half of the 1960's, the arms flow saw a discernable slowdown reflecting in part the reduction in Soviet supplies to the North. American military aid was increasingly limited to the replacement and maintenance of the existing equipment. By 1964, the North did not have a military advantage over the South and did not pursue one during this period.

By 1971, however, the North had built a formidable military machine. Manpower levels in all services as well as number of main battle tanks and artillery pieces increased significantly. Of particular significance were transfers of MIG-21 aircraft and T-54/55 tanks. Large numbers of missiles were also received. The Soviets seemed to be seriously aiding the North in developing a formidable, possibly offensive oriented military force.

Meanwhile, by 1965, the U.S. was embroiled in Indochina and began to increase and adjust its security assistance accordingly. The U.S. continued to increase its assistance to the ROK. By 1971, the U.S. provided the ROK with F-5A and F-4E/D aircrafts, M-60 and M48A2C tanks, M113 Armored Personnel Carriers, and M 107 howitzers. During this time, North Korea shifted the military balance in its favor. This military buildup was a definite threat to the ROK. From 1972 to 1980, North Korea force levels increased dramatically in virtually all areas. The most significant transfers involved submarines, T-55 and T-62 tanks. However, it is obvious that the North was relying heavily on its indigenous arms manufacturing capability to provide most of its armaments. The decrease in arms shipments by Chinese and Soviet Union indicates that the North did not enjoy their full support for its unification goal.

During the same period, there was no clear pattern of U.S. arms transfers to the ROK. There were short periods of increasing and decreasing levels of security assistance. However, many technically advanced weapons were provided to the ROK, mostly as sales. The South started to enjoy slightly the small qualitative edge.

Since 1984, the North Korean swing toward the Soviet Union has brought major changes such as the Soviet supply of MIG-23 fighters and several kinds of missiles. Even though the ROK was supplied F-16 aircraft during the similar time, the transfer of new Soviet technology increases the threat to the South and will widen the quantitative imbalance.

### 3. Trends

There are three apparent trends in the ROK's FMS acquisition. One of the significant changes is the transition from MAP to FMS cash procurement. Up to the early 1970's, the ROK had been supplied its military equipment mostly by the U.S. MAP programs. After the "Nixon Doctrine", this program was deemphasized. The other method, the FMS credit program, had been available until FY 86. Now, the ROK has only one option, which is FMS cash procurement, to obtain its required sophisticated weapon systems.

Since the 1950's, the arms race on the peninsula has continued. South and North Korea do not want to maintain inferior weapon systems in relation to one another. The U.S. has been considered the major supplier of ROK's military equipments because the U.S. is a reliable and capable supplier of ROK's sophisticated weapon systems or new technology. However, U.S. price have drastically increased.



Due to its increased defense expenditures, the South has sought other ways: U.S. direct sales and self-production. Since the early 1970's, the ROK government has supported its defense industry. Currently, most of ROK's conventional weapon systems are procured through in-country sources. The ratio of U.S. direct procurement to FMS has also continuously increased.

#### 4. FMS Without Credit

Sales have not generally been considered to be foreign assistance. The term assistance is usually used to refer to U.S. government funding on a grant basis or loan basis, and to earlier Military Assistance Programs (MAP) and Military Assistance Service Funded Programs that supplied equipment and services on a grant basis. Basically, the financing program is available to governments whose economic situation or near-term security requirements make cash sale inappropriate or impossible. On the other hand, FMS cash sales are the reverse. [Ref. 9: p.2]

Under FMS cash sales, eligible foreign governments may buy military equipment, training and services from the U.S. government under terms negotiated contractually. All expenses incident to the sale are paid by the purchaser. FMS sales to allies such as NATO are motivated by security interests and domestic economic concerns. Cash sales to other friendly or non-allied countries are usually a political decision based on pursuit of foreign policy objectives. [Ref. 30: p.81]

Also, items and services, including training, may be provided from DOD stocks or from new procurement. If the source of supply is new procurement, on the basis of having a DD Form 1513 which has been accepted assigned cognizance for this case is authorized to enter into a subsequent contractual arrangement with industry in order to provide the item or service initially requested. Foreign purchaser payments shall be received in advance of the time any payments are due by the U.S.G. to the commercial contractor, etc..

Figure 2.7 presents a block diagram showing the "flow of funds for FMS." In this sense, it serves its primary purpose of providing the "big picture" relating to funds flow. Based on the U.S. government demands which are (1) the initial deposit requirement and (2) the recurring payment requirements, the purchaser must respond by providing the funds requested. In doing this, the purchaser has two general sources of financing: cash and U.S. government credit. From the perspective of the U.S. government, cash financing by the purchaser means the absence of U.S. government credit. Purchaser "cash" financing may include: funds appropriated through the

purchaser's parliamentary or legislative process; funds borrowed, or received in the form of a grant, from third countries; or funds borrowed from U.S. government. [Ref. 1: p.16-2]

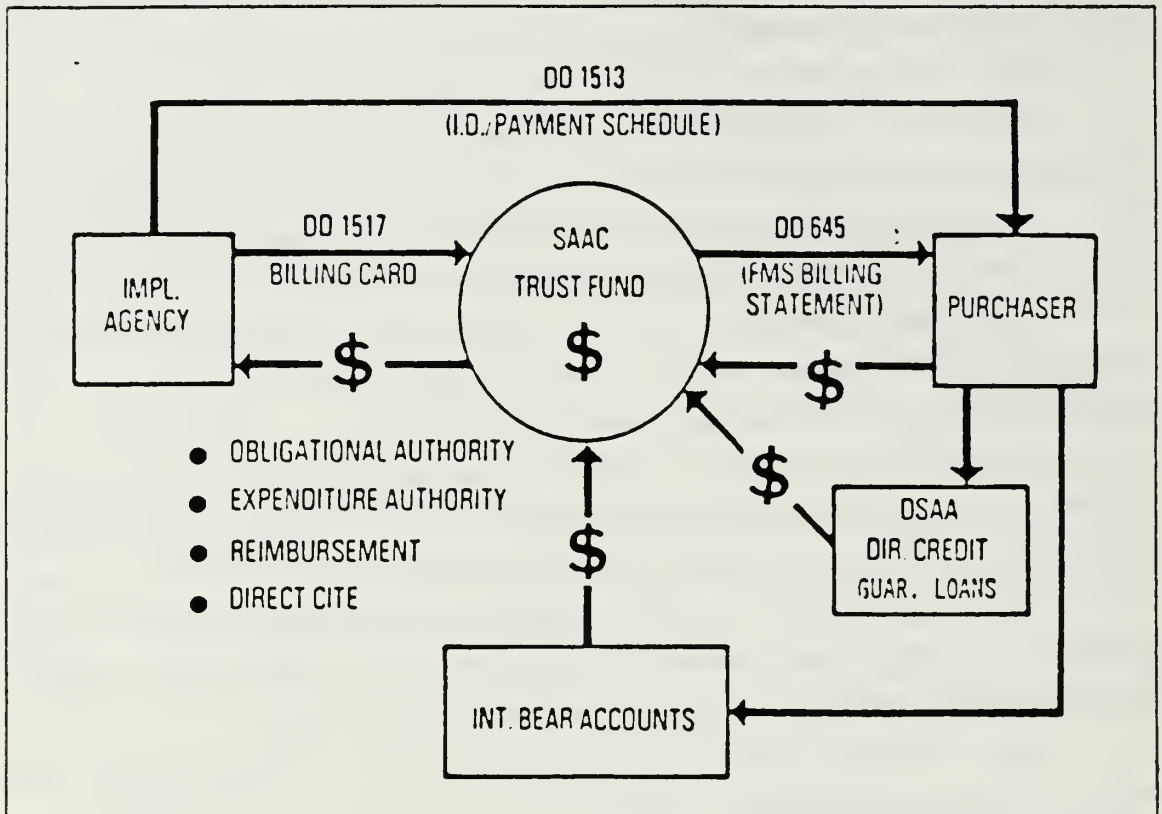


Figure 2.7 Flow of Funds.<sup>9</sup>

Defense articles purchased with FMS credit funds and which are shipped by ocean vessel are to be transported in vessels of U.S. registry. [Ref. 1: p.20-10] However, under FMS cash sales, the purchasing government shall be responsible for the transportation and delivery of its own material. In application of this policy, each foreign government utilizes its own contract or in-house agency to manage transportation and delivery from origin to the final in-country designation. Nevertheless, purchasing governments must abide by U.S. laws, regulations and policies. Also, it is recognized that some items are sent from origin to the freight forwarder on a prepaid basis (parcel post) and others may be sent with the Defense Transportation Systems (DTS) or a government bill of lading (GBL). [Ref. 1: p.20-2]

<sup>9</sup>Defense Institute of Security Assistance Management, *op. cit.*, p.15-2.



### III. ROK SECURITY AND ITS ECONOMIC PROBLEM

#### A. MILITARY BALANCE ON PENINSULA

The border between South and North Korea is one of the most dangerous in the world, with a high potential for all-out conflict and the ever-present danger of military incidents. [Ref. 5: p.109]

A root cause of the North-South confrontation in Korea is the sense of insecurity existing on both sides and the military buildup along the DMZ where about 1.2 million regular troops are poised toward each other. If the U.S. forces are excluded from the comparison, the military balance is definitely in favor of North Korea.

North Korea began its military buildup early in the 1960's. Since then Pyongyang has been investing large portions of its budget towards military purposes. The South started its military modernization program in the 1970's and these later efforts have been severely constrained by the priority of U.S. global strategy and Congressional politics. Consequently, there exists a serious military imbalance between the two sides. Exacerbating this picture is the contrast between the North's offense-oriented and the South's defense-oriented military doctrines and force structures. The U.S. military presence compensates for this gap. [Ref. 2: pp.16-17]

Meanwhile, North Korea continues to pose an imminent danger to the peace and stability of the South, as evidenced by a number of recent events. The most prominent in recent years was the bombing directed at President Chun in Rangoon, Burma on October 9, 1983. Although President Chun escaped harm, 16 high-level ROK officials were killed. [Ref. 31: p.40] Evidence found amid the ruins pointed at North Korea: two North Korean claymore antipersonnel mines were discovered, one of which was unexploded ; several armed North Koreans were captured in the area of the bombing during the following two days, and North Korean ships calling at Rangoon were suspected of having brought the terrorists to Burma. [Ref. 32: p.88]

Border clashes along the DMZ are a common occurrence. In 1983, North Koreans attempted to infiltrate ROK territory on June 19, August 5, August 13, and December 3, which resulted in the death of at least ten North Koreans and the capture of two. [Ref. 33: p.148] In September 1983, a small bomb blast at the U.S. Cultural Center in Taegu was believed to be the work of North Korean infiltrators. [Ref. 32: p.88]

Seoul, the capital of the Republic of Korea, is located less than 30 miles from the DMZ along the western coast. The latest government figures estimate the population of the South as 41.2 million and the population of Seoul as 10 million as of mid-1985. The focus of the transportation system is Seoul and principal routes radiate from the capital linking other major cities throughout the nation, including Incheon, Taegu, Pusan and Kwangju. Accordingly, the closeness of Seoul to the North is one of the great threats.

The diplomatic and military pendulum of North Korea has been swinging toward the Soviet Union since early 1984. This recent swing has produced unexpectedly big changes in North Korean-Soviet relations and strengthened the North Korean military posture.

The major changes that the North Korean swing toward Moscow have brought include: a Soviet supply of 50 MIG-23 combat aircraft and SA-7 GOA anti-air missiles; Joint North Korean-Soviet naval exercises; visits to North Korean ports by warships of the Soviet Pacific Fleet; the opening of Najin and Nampo ports of North Korea to Soviet naval vessels; North Korea granting the right to overfly North Korean airspace to Soviet aircraft; etc. These changes are expected to have very serious impacts on the security of the Korean Peninsula, on the regional security of Northeast Asia, and also probably on the USA-USSR rivalry in the region. [Ref. 34: p.1]

### **1. Military Forces**

In the early 1970s, although the North scaled back its infiltration and sabotage against the South, it began a major long-term conventional military buildup. The extent of this buildup did not become evident to the outside world until the late 1970's. North Korea now has the fifth largest army in the world. The disparity between the North and South Korean forces, which resulted from this military expansion, led the U.S. government to cancel planned withdrawals of U.S. ground combat forces from the ROK in mid-1979.

The current comparative military balance continues to favor the North. The North has about 850,000 armed personnel, compared to about 600,000 in the South. This large military establishment presents a very real and significant threat to the South (see Table 4). [Ref. 35: p.4]

The North has perhaps the world's second largest commando force (after the Soviet Union) designed for insertion behind the lines in wartime. It is estimated at some 100,000 men and is organized into a number of light infantry brigades,

TABLE 4  
COMPARISON OF SOUTH AND NORTH KOREA'S MILITARY  
STRENGTH

Service	North	South
Army	750,000	540,000
Navy	38,000	29,000
Air Force	55,000	33,000
Marine Corps	-	20,000
total	835,000	622,000

Source: Defense & Foreign Affairs Handbook, 1986.

reconnaissance units, elite training units, and the DMZ border guard forces. It is definitely an "offensive" force, though untested in battle. These special forces can be deployed rapidly by ships, A-2 transports or through underground tunnels to penetrate deeply into the South. They can destroy or confuse command and communication networks; they can also carry out terrorist acts as some of them attempted the raid at the Blue House in 1968. [Ref. 36: p.10]

In addition to their size, the challenge posed by North Korean forces is compounded by factors of time and distance. The bulk of the North Korean forces are deployed well forward along the DMZ and, recently, North Korea has begun to move even more of its rear echelon troops to hardened bunkers much closer to the DMZ. Given the proximity of Seoul to the DMZ (some 25 miles), ROK and U.S. forces are presented with an extremely difficult indication and warning problem. Consequently, a high state of readiness is required at all times. The U.S. government continues to believe that the U.S. troop presence in the South remains an important deterrent against North Korean aggression. [Ref. 35: p.4]

The North Korean soldier's daily routine is from 05:00 to 22:00. Training, however, is conducted not only during the day but also-in fact extensively so-at night. Despite having taken part in night exercises there is no break in the soldiers' routines until noon or later the following day. Physical and mental conditioning are stressed; these are intended to enable the soldier to withstand battle fatigue. Likewise, the North emphasizes unconventional warfare training and utilization of night combat to

overcome the armed forces of the South. [Ref. 36: p.14] North Korea exercises have also revealed impressive sophistication in terms of joint and combined forces operation. [Ref. 35: p.4]

North Korea's continued, though intermittent, infiltration and sabotage actions against the South in recent years include construction of several military tunnels deep under the DMZ. This tunneling effort continues.

Quantitatively, the South's military forces have continued to be inferior to the North's. The South, however, can focus its military efforts on defensive capabilities designed to exploit favorable terrain and strong points. The South is unable to trade distance for stronger defensive positions; it must defend all the major corridors of attack very close to the DMZ, which requires it to spread its defense forces. It also has superior aircraft with better trained manpower and the higher potential manpower. Moreover, the South is backed by American deterrent forces, particularly air and naval forces that are far superior to comparable North Korean elements.

## **2. Weapon Systems**

As discussed earlier, North Korea had begun a military buildup early in the 1960's whereas the South started its military modernization program only in the 1970's. The U.S. was so preoccupied with the Vietnam War during the early 1970's that it could hardly pay attention to Korea. Pyongyang's military buildup accelerated just when the first series of North-South dialogues was underway in 1972-73. Yet only in January 1979 did this fact come to light. Once this was known, President Carter had no choice but to suspend his plan for a phased withdrawal of U.S. ground troops. Currently, North Korean forces are well equipped and have a substantial advantage (at least two to one) in several key categories of offensive weapons: tanks, long-range artillery, and armored personnel carriers.

In detail, as Richard L. Armitage, deputy U.S. Assistant Secretary of Defense, testified before Congress, Pyongyang still has the advantage over Seoul in all capabilities as follows: two to one in maneuver battalions, two to one in artillery, three to one in tanks, two to one in fighter aircraft, and three to one in naval combatants. Clearly, Pyongyang's forces are far larger than necessary for the defense of the North.(see Table 5)

In terms of armor, North Korea has 3,425 tanks, whereas the South has only 1,240 tanks. North Korean armor including tanks and artillery is domestically produced. The North is also far stronger in the number of armored divisions and



TABLE 5  
COMPARISON OF SOUTH AND NORTH KOREA'S WEAPON  
SYSTEMS

Service	Category	North	South
Army	Tanks	2,800	1,457
	APC	1,140	956
	Artillery	4,000	2,213
	Mortar	11,000	5,300
Navy	Submarine	24	-
	Combat Vessel	384	102
	Landing Ship	99	22
Air Force	Combat Aircraft	740	450

Source: Defense & Foreign Affairs Handbook, 1986.

mechanized and motor divisions which are equipped to be most effective in carrying out fast and mobile attack to breach the forward defense line between the DMZ and Seoul.

The artillery in particular is superior not only in its number but also in its range and suppression. The North is still increasing the capability and number of its artillery units with heavier and longer range pieces.

In addition to the Army, Pyongyang's Navy and Air Forces also are superior to Seoul's at least in quantity. Pyongyang has 527 combat vessels, Seoul only 153; the North has 21 submarines and missile equipped patrol boats but the South has only a few U.S. made World War II vintage destroyers. As for aircraft, North Korea has 800 combat aircraft but the ROK has only 451. If 50 MIG-23s are added, which were delivered to the North in 1985 along with other equipment, the quantitative balance will be slightly more tilted in favor of North Korea. [Ref. 2: pp.16-18]

The sophisticated weapons delivered to North Korea in 1985 such as Scud ground to ground missiles, AA-7 air to air missiles, and SA-7 anti-aircraft missiles will increase the threat to ROK defense forces. This quantitative military imbalance will be widened further if the Soviet Union continues to supply more military equipment to



North Korea. This wide imbalance will more than offset the small qualitative edge that the ROK enjoys in the areas of aircraft and avionics.

### 3. Defense Industry

Since the 1960's, the North has had clear advantages in the scale of its defense industry. It has the capacity to equip its ground and naval forces with all but the most sophisticated equipment and can produce massive numbers of tanks, APCs, mobile artillery, and smaller ground force weapons, as well as sufficient ammunition. Its submarine and gunboat output is increasing. It also has invested heavily in hardening and placing underground both military and industrial facilities. [Ref. 5: p.120] A big push came in the early 1970s. Production of more sophisticated weapon systems started, including tanks and larger ships. Reportedly, in 1976 a few MIG-19 aircraft were assembled. This seemed to signal the beginning of the production of very sophisticated modern Soviet weapon systems. In fact, however, the importance of arms production seems not to have increased after the mid-1970s. There are fewer projects and major advances in technology have been limited to shipbuilding. [Ref. 25: p.261] Although North Korea does assemble some indigenously designed weapons they are primarily of the conventional ground weaponry type. It is not apparent that the North has any design capability of its own.

The South, despite its stronger industrial base, had devoted far less of its GNP to developing an indigenous industry, and only recently has that industry expanded. [Ref. 5: p.120] At the present time, the ROK defense industry can meet the most of the requirements of its ground forces, it also produces indigenous tanks and missiles; it engages in co-production of 500 MD helicopters and F-5E/F's; it produces manned armored vehicles. Under the second modernization plan for 1982-1986, Korea plans to continue to co-produce F-5 Tiger II Fighters and to modify its Hawk SAM missiles. Meanwhile, the munitions sector in Korea is suffering most acutely from excess capacity. Major weaknesses in naval material such as engines, naval armaments and components (fire control systems) continue to be imported. Recently, the South's arms export activities, which are dependent upon U.S. technological assistance and license agreements, tend to be tightly controlled and restricted. The South is attempting to, independently develop and produce Korea-type weapons and military equipment, not only for its combat effectiveness but to avoid military dependence and exports control. [Ref. 37: p.231]

Meanwhile, the recent delivery of MIG-23s and on-going transfers of new technology will likely improve the North's defense industry, and simultaneously impact the military balance on the Peninsula and the Far-East region in the future.

## **B. REQUIREMENT FOR ADVANCED WEAPONS**

There are four major goals which the South's FMS purchases are directed at fulfilling: force modernization, self-sufficiency, the growth of advanced technology and security. The goal of ROK force modernization has been very clearly demonstrated by the implementation of the Force Improvement Program (FIP). The FIP emphasized increasing modern fighter aircraft and anti-tank capability; improving the tank force, air defense and logistics . . . Details of the FIP are classified; however, it is known that the ROK's Force Improvement Plans (FIP) have been used to upgrade the quality and capability of its armaments and to improve the managerial and technical competence of its military personnel.

Self-sufficiency in weapons production, as previously discussed, is a major objective of the FIP. The second FIP emphasizes the development of the indigenous arms industry in order to stem the outflow of money from the country. Currently, more than 2 percent of the ROK defense budget is spent in the U.S.. The South attempts to locally produce all unsophisticated military items. Where the technical expertise is not present or where production runs of expensive items would be too short to justify setting up production facilities, co-production has been sought. Co-production efforts help to keep money in the ROK economy and enhance Korea's effort to achieve its goal of self-sufficiency in weapons production.

The goal of obtaining advanced technology is related to the desire for self-sufficiency. The South recognizes that it will be unable to produce highly sophisticated weapon systems without an inflow of Western technology. The demand for sophisticated weaponry is growing, and South Korea has joined those nations who are purchasing the most advanced weapon systems available. However, beyond simply purchasing these systems, and in order to educate the technical and production base, co-production has become an important method of transferring technology and technical capability. The level of technology transfer is an absolutely essential determinant for dictating the rate and complexity of Korean technological advancement in the aircraft industry. Further, the more extensive the transfer of advanced technology the more valuable the spillover effect will be to ROK industry.

Clearly, obtaining advanced technology is crucial to the ROK if they are to develop the capability for producing sophisticated weaponry. This capability will allow the South to achieve the goal of self-sufficiency as well as strengthening the ROK economy by reducing the monetary outflow from purchasing weapons abroad and by increasing the monetary inflow through arms sales to Third World nations. Dr. Neuman of Columbia University summarizes that today's advanced technology is tomorrow's intermediate-level weapon system, and through a network of licenses, offsets and joint ventures, today's buyer is often tomorrow's producer.

Finally, the arms that the ROK purchases must fulfill a defense need, for national security is the most important goal. Therefore, it must be a very primary motivation behind the ROK's purchases of weapon systems. [Ref. 38: pp.39-41]

The North's recent tilt toward the Soviet Union is expected to have very serious impacts on the security of the Korea Peninsula, on the regional security of Northeast Asia and also probably on the USA-USSR rivalry in the region. Since 1984, the Soviet Union is providing North Korea with improved technology in forward deployed offensive systems with increased deliveries. The Soviet Union has also upgraded its own power projection capability in the region, making it second to Europe in military importance. An example of the upgrade in technology being provided by the Soviet Union to North Korea are 50 MIG 23s, T-72 tanks and SA-7 GOA anti-air missiles. The MIG 27 and SU 22 seem to be likely candidates as bomber supplements to the North bomber force. Military upgrades of the MIG 23 category impact directly on the capabilities that support existing North Korean strategy and tactics. The MIG 23 is a significant improvement over the MIG 21. The MIG 21 is essentially 1950 technology while the MIG 23 is 1970 technology. The MIG 23 has greater range and speed, more advanced avionics, a larger capacity for advanced munitions. It also probably signals further Soviet modernization of North Korea forces. The North Korean offensive force modernization permits the North greater capability in its joint effort with the Soviet Union in outflanking the South. Part of the solution may rest on adjusting ROK military strategy and tactics to reflect the effect the new technology has or will have in the region. [Ref. 39: p.1,4,5]

### **C. ECONOMIC PROBLEMS**

The Republic of Korea comprises the southern half of the peninsula and encompasses 34,247 square miles, an area about the size of Indiana, of mostly rugged and mountainous terrain. The capital of the Republic of Korea, Seoul, is located less than 30 miles from the DMZ along the western coast. [Ref. 40: p.1]



The east coast and central interior regions are the most mountainous, and good harbors exist only along the western and southern coasts. Only about 15 percent of the land is plains, which are generally small in area and isolated from each other. The majority of the population is located in these lowlands, especially in the northwest around Seoul and Incheon and in the plains of the southern part of the country. In 1983, the population of the South was approximately 40 million with an annual growth rate of 1.6 percent. [Ref. 41: p.1,3]

ROK exports and imports are greatly influenced by available natural resources, which present an ongoing challenge to the South Koreans. The division of North and South left the ROK resources poor. The ROK has limited reserves of tungsten, coal, iron ore, limestone, kaolinite, and graphite, but no oil. [Ref. 41: p.5] This has made the South very dependent upon imported energy and has caused difficulties in maintaining a balance between energy demand and supply during the nation's rapid economic development and industrialization. [Ref. 42: p.7]

Despite economic reforms and laudable economic growth, the balance of payments remains a major concern. ROK foreign exchange debt continues to grow: in 1983 the ROK balance of payments was valued at -\$1.607 billion. To reduce the balance of payments deficit, the ROK government has implemented several policies including price stabilization, increasing savings, improving the ROK's competition in international markets and limiting investment in domestic projects. Gross foreign borrowings for 1985 are targeted at \$5.8 billion, down from \$6 billion in 1984. Foreign debt outstanding is expected to reach \$45 billion by the end of 1985. [Ref. 43: pp.6-7]

### **1. Military Expenditure**

Until the mid-1970's North Korean defense expenditures clearly out-distanced those of the South. Between 1961 and 1974, North Korea spent \$1 billion more than the ROK. Between 1966 and 1967 alone, North Korea had increased its defense budget by a factor of approximately 3x, or 200 percent. Its military outlay stood at over 30% of the national budget from 1967 to 1971.

Announced military budgets continued to increase an average of 15% percent per year until 1972, when they declined sharply as part of Kim Il Sung's short-lived effort to bring some semblance of detente to the Korean peninsula. Since this 1972 reduction, the North's defense budget increased at a slower rate than the South's (from \$532 million in 1972 to \$1.37 billion in 1980 and \$1.47 billion in 1981). According to North Korean announcement, 1,910 million dollars of its FY83 budget went to the

TABLE 6  
ROK DEFENSE EXPENDITURES BY APPROPRIATIONS

(ROK current million wons, percentage)

	<i>Military Personnel</i>	<i>Maintenance</i>	<i>R&amp;D</i>	<i>Investment</i>	<i>Total</i>
1961	12,743 (76.8)	2,948 (17.8)	—	896 (5.4)	16,587
1962	16,774 (81.9)	2,867 (14.0)	—	831 (4.1)	20,472
1963	16,792 (82.0)	2,762 (13.5)	—	924 (4.5)	20,478
1964	20,795 (83.4)	3,191 (12.8)	—	940 (3.8)	24,926
1965	24,643 (82.5)	3,923 (13.1)	—	1,306 (4.4)	29,874
1966	31,953 (78.8)	7,001 (17.3)	—	1,588 (3.9)	40,542
1967	35,559 (71.8)	10,377 (21.0)	—	3,569 (7.3)	49,504
1968	44,914 (69.4)	13,302 (20.6)	—	6,472 (10.0)	64,708
1969	55,780 (66.1)	17,457 (20.7)	—	11,146 (13.2)	84,383
1970	69,073 (67.5)	22,968 (22.4)	—	10,295 (10.1)	102,336
1971	81,825 (60.7)	38,217 (28.4)	341 (0.2)	14,365 (10.7)	134,748
1972	96,987 (55.9)	55,500 (32.0)	2,054 (1.1)	19,097 (11.0)	173,638
1973	108,131 (58.9)	60,391 (32.9)	2,137 (1.1)	12,971 (7.1)	183,630
1974	144,107 (48.6)	123,153 (41.4)	8,234 (2.8)	21,348 (7.2)	296,842
1975	208,720 (47.2)	141,169 (31.9)	12,726 (2.9)	79,854 (18.0)	442,439
1976	298,920 (42.5)	170,975 (24.3)	36,035 (5.1)	197,818 (28.1)	703,748
1977	393,301 (41.4)	234,943 (24.7)	36,224 (3.8)	285,165 (30.0)	949,624
1978	483,557 (37.5)	336,539 (26.1)	30,878 (2.4)	438,379 (34.0)	1,289,353
1979	591,828 (38.8)	451,776 (29.6)	45,389 (3.1)	436,868 (28.6)	1,525,861
1980	792,401 (35.1)	751,607 (33.2)	70,751 (3.1)	642,624 (28.5)	2,257,383
1981	n.a.	n.a.	n.a.	n.a.	2,689,919
1982	n.a.	n.a.	n.a.	n.a.	3,205,534



military. However, conservative estimates were a defense expenditure of \$3.5 billion (31 percent of total budget), or 23.8 percent of the GNP for that year.

Evaluating the exact amount of North Korean military spending is difficult at best, in part because there is little consensus on suitable exchange rates. Many analysts assume that the DPRK hides significant defense-related expenditures-such as military weapons production, militia and para-military pay, and logistical supply expenses-under the other nondefense budget headings. United States and ROK government analysts argue that the North is really spending between 15 and 25 percent of its GNP per year on its military development program, versus the 14 to 17 percent of budget reported by the DPRK. Thus, the 1979 North Korean military budget was somewhere between \$1.26 billion and more than two billion. Although exact statistics remain a matter of conjecture, DPRK defense spending has increased at a brisk pace.

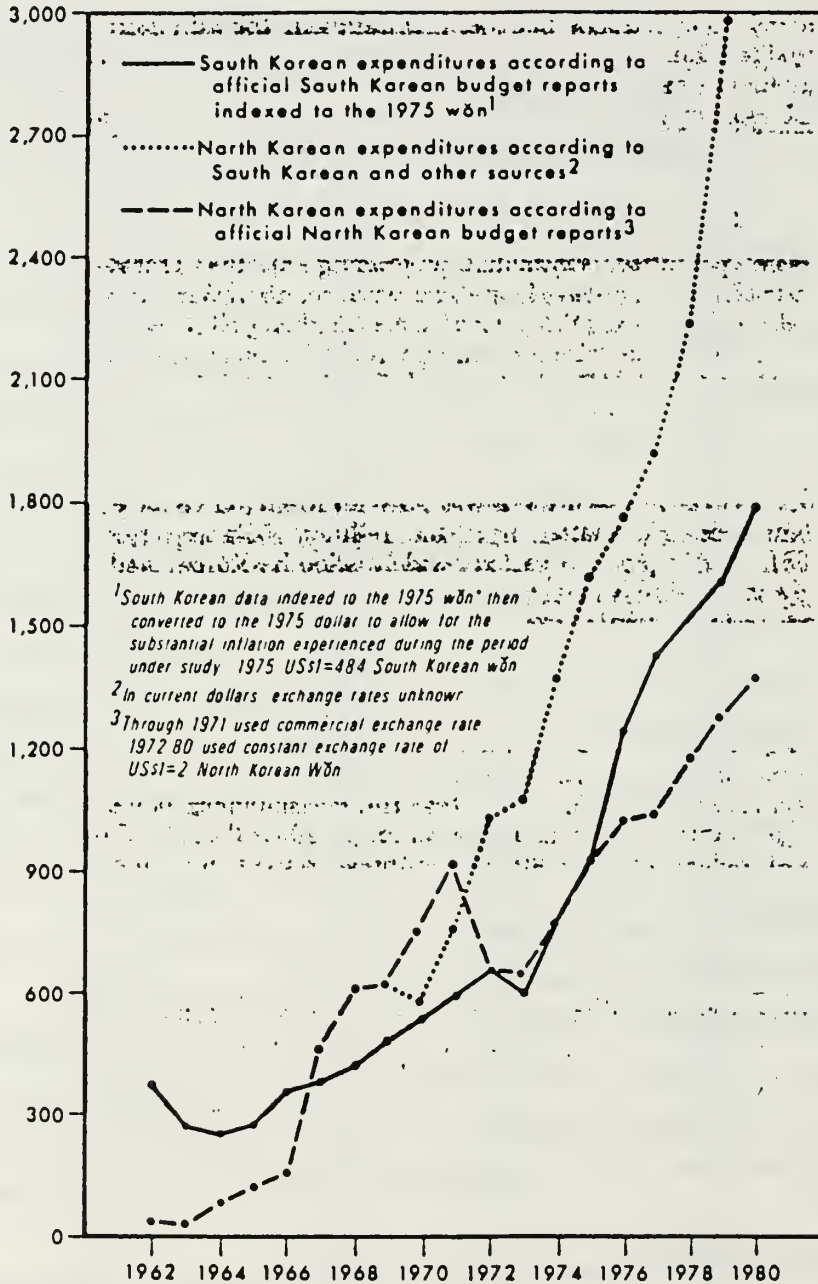
In comparison, the military budget of the South was relatively modest until 1975, with a 4% to 5% rate of annual expenditure increases. During the 1972-1976 ROK expenditures for the research and development of weapon systems began a gradual steady growth as is depicted in above Table 6. Extrapolating from the 1960's and 1970's, and based on that rate, the 1975 and 1976 ROK budgets would have been roughly \$460 and \$500 million. This, however, was not the case. In 1975, a sudden budget shift occurred in reaction to the American withdrawal from Vietnam. In that year, the ROK defense budget rose to over \$800 million, and the 1976 budget jumped to approximately \$1.5 billion. This exponential trend has continued since the mid-1970's with the ROK defense budget exceeding \$2 billion in 1977, \$3 billion in 1979, and \$4.4 billion in 1981. The general pattern of North and South Korean military growth indicates that both nations in the late 1970's and early 1980's were locked into an exponential arms race (see Table 7). [Ref. 4: pp.268-269]

In order to provide funding for an increase in capital investment, ROK President Chun, in July 1983, issued an executive order requiring the Korean armed forces to reduce the operating expenditure in the nation's defense budget. [Ref. 44: p.3] The objective of this order was to take initial steps toward improving defense resource management.

While the ROK economy has made excellent progress, defense spending is reaching 6% of GNP or approximately one third of the government budget. This figure is considered high by free-world standards (see Table 8). Despite this high level of spending, the imbalance of military power between South and North remains toward

TABLE 7  
 DEFENSE EXPENDITURES BY THE SOUTH AND NORTH KOREA.<sup>10</sup>

Approximate equivalents in millions of United States dollars



<sup>10</sup>Department of the U.S. Army, *South Korea: A Country Study*, p.216, GPO, 1982.

the North. As a means of obtaining greater defense capabilities to balance military power, the ROK government has taken steps to obtain efficiency in its use of defense funding. [Ref. 45: pp.56-63]

TABLE 8  
RELATIVE BURDEN OF MILITARY EXPENDITURES

Country	Type	1976	1978	1980	1982
S. Korea	A	74	95	96	110
	B	5.7	6.2	6.5	6.8
Israel	A	1,714	1,330	1,560	1,412
	B	32.7	23.7	29	25
Egypt	A	100	74	59	50
	B	22	13.8	10.2	8
Philippines	A	20	14	14	18
	B	3	1.9	1.8	2.3
Thiland	A	13	24	28	29
	B	2.8	3.6	4	3.9
Turkey	A	78	67	51	66
	B	13.7	5	4.1	5.1
Portugal	A	74	75	84	84
	B	4	3.5	3.6	3.6
Pakistan	A	17	16	16	20
	B	6	5.2	4.9	5.8

A. Military expenditures per capita (US \$)

B. Military expenditures per capita/GNP per capita (%)

## 2. Defense Industry

The ROK embarked in 1972 upon an ambitious plan to improve the quality of industrial technology and pave the way for an economic transition from labor-intensive light industry to skill- and technology-intensive industry. The announcement of planned U.S. troop withdrawals under the Nixon and Carter administrations coincided with a two-phase acceleration of heavy industry investments under the President Park to provide foundations for rapid development of defense industries. Therefore, since 1972, the ROK has developed a significant military production capability.

The haste with which heavy industries were developed was replicated in the defense sector. Defense industries pose a particular problem for the Korean economy in that they are even more heavily subsidized by the government than are their civilian

counterparts, but do not directly produce significant positive growth. Heavy subsidization is a cost that industrial governments have traditionally borne as the necessary cost of maintaining independence in defense planning. In Korea, however, this burden was not only excessive relative to the normal efficiency of such production, but was out of proportion to the contribution of the defense firms to security. Production of small munitions and ammunition, the bulk of Korean defense production to date, far exceeds domestic demand and has only limited export potential. It is an area of production in which there are no spin-offs for the civilian sector and for technical advancement, with the exception of the training of semi-skilled workers in routine operations. More advanced defense production projects, such as the F-5 program, do produce spin-offs, but their costs are much higher.

A major area of inefficiency can be found in the machinery sector, a sector of considerable significance to Korea's long-term defense modernization objectives. By early 1980, this sector, which had received over \$1.4 billion in investment resources since the mid-1970s, was suffering from serious overcapacity. In heavy electrical equipment, the leading producer was operating at below 50 percent capacity, and marine diesel engines capacity utilization was below 30 percent. President Chun's efforts to revive the importance of market forces and restore competitiveness in industrial development will also require independent entrepreneurs. Nevertheless, as industrial modernization proceeds, shortages in inputs-skilled labor, energy, funding-will also become more, rather than less, significant for continued economic progress. [Ref. 46: pp.112-117]

#### **D. SUMMARY**

The motives of the ROK for commencing independent arms production can be analyzed in terms of the threats the country faces from North Korea, its vulnerability to manipulation by the U.S., the insecurity of its alliance with the U.S., the nationalistic urge towards autonomy, and the wish to use military production as a means of promoting economic development: initially through the creation of infrastructure and human resources skilled in the ways of modern industrial production, and subsequently through the substitution of domestic production for imports and the promotion of arms exports. Although these imperatives are strong, the ROK still imports finished weapon systems and is more dependent than ever on imports of high-technology components for its more complex military products. To the extent that indigenous military production has created linkages with other sectors of the ROK



economy and that components imported from one supplier are not easily substitutable, the ROK has increased its vulnerability to its major supplier. [Ref. 25: p.215]

As commented earlier, insuring the national security is the primary motivation behind the ROK's purchases of weapon systems. Although the U.S. policy encourages the sale of intermediate-type systems in part, the advanced weapons have become the systems preferred by the South.

The costs of the advanced weapon systems, however, have increased tremendously. For example, the 1984 unit cost of an F-20 aircraft was estimated to be \$14.5 million, while the estimated unit cost of the F-16A was \$16 million and of the F-16C was \$17.9 million. [Ref. 47: P.71] These high acquisition costs have resulted in the significant budgetary problems for the South. The South's first Force Implement Plan (FIP) called for the expenditure of \$5 billion by 1981, to include \$3.5 billion in foreign acquisition costs. The South asked the U.S. for a modernization plan loan of about \$1.5 billion stretched out over a five year period. The Koreans used a roughly equivalent amount of its own funds for FMS cash purchases. However, it needed the \$1.5 billion financing in order to procure sufficient arms and equipment to meet its modernization goals without adversely affecting its own economic progress. Much of the money for the industrial development came from the 1976 18% defense tax.

In FY87, the U.S. government stopped the FMS credits to the South. Currently, the ROK is spending more than 2 percent of its defense budget in the U.S.. Therefore, ROK's budgetary burden will increase significantly. Simultaneously, the supply of its funding will be an increasingly difficult problem. Naturally, it is critical that the South pursues efficient FMS cash acquisitions, considering that the annual military expenditure of \$4.6 billion (FY85) represent 33.6% of the total national budget and 6% of GNP.

Therefore, in next chapters, it will be necessary to talk about U.S. FMS in more details in terms of pricing, contract and financing, then approach to the ROK's feasible solutions for economic acquisition of weapons, given such condition of U.S. FMS.

## IV. U.S. FMS PRICING, CONTRACT AND FINANCING

### A. PRICING

The discussion of this chapter will be focused on the U.S. FMS pricing, contract and financing. These areas, whose details are not familiar to the foreign country, nevertheless, play key roles in the efficiency of the purchaser's procurement. The discussion will start with the pricing. After reviewing current pricing policies and methods, it will show, as an example, an F-16 Aircraft Managerial Pricing Model. Major Robert H. Matthews, USAF, developed this model to be used in conjunction with the micro computer.

Pursuant to pricing, contracting will be addressed in relation to its life cycle from request to closure. Financing is the process of the fund flows against the transaction. It will discuss the principles and terms of sale, and then the process of cash management which contains the advance estimate, payment schedule, trust fund, billing and payment. Each section will discuss problems which may affect the purchaser's efficiency.

#### 1. Pricing Policy

##### a. *Congressional Guidance*

The statutory language pertaining to FMS cost recovery has changed a number of times over the years. Authority to sell defense articles and services stems from section 408(e) of the Mutual Defense Assistance Act of 1949, which provided for such sales "without cost to the U.S." and specifically required the recovery of "full cost, actual or estimated" of defense articles and services. Section 408(e) was amended in 1950 to delete "full cost, actual or estimated" and substitute the language "fair value, but not less than the value thereof" as further defined in the act. This act specified "not less than the value" for sales from stock and defense articles, and "full amount" for contractors. With enactment of the International Security Assistance and Arms Export Control Act of 1976, the Congress clarified and strengthened cost recovery requirements of FMS as a matter of law. Although the AECA does not attempt to further define the value associated with the various elements that comprise the FMS transaction, it recognizes that various standard pricing methodologies are required to recoup the full cost of providing various articles. The AECA also addressed the

common costs associated with the administration, research and development, production, and the movement of FMS material, and states that appropriate charges will be imposed to recoup these costs. The cost recovery requirements of the AECA are summarized as follows:

- In the case of a defense article intended to be replaced at the time a sales agreement is entered into, recovery will be the established cost of replacement of such article, including the contract or production costs less any depreciation in the value of such article;
- In the case of a defense article not intended to be replaced at the time a sales agreement is entered into, recovery will be not less than the actual value thereof;
- In the case of a defense service, recovery will be the full cost to the U.S. government of furnishing such service, unless the service is training, in which case less than the full cost may be charged under certain conditions;
- In the case of procurement for cash sales of defense articles or defense service, the full amount of contract will be charged to assure the U.S. against any loss on the contract.

All of the above shall include appropriate charges for:

- Administrative services, calculated on an average percentage basis to recover the full estimated costs of administration of sales made under the AECA to all purchasers of such articles and services;
- A proportionate amount of any nonrecurring costs of research, development and production of major defense equipment;
- The recovery of ordinary inventory losses associated with the sale of defense articles that are being stored at the expense of the purchaser of such articles.

The President and the Secretary of Defense are authorized to waive reimbursement of certain costs under conditions specified by the AECA and other acts of public law. [Ref. 48: pp.1-3]

#### *b. DOD Policies*

As the administrator of the FMS program, DOD has the responsibility for pricing defense articles sold. Accordingly, DOD has established basic policy guidance in the form of DOD directives and instruction.

Department of Defense Instruction 2140.1 "Pricing of Sales of Defense Articles and Defense Services to Foreign Countries and International Organizations," was issued January 29, 1970. The instruction was revised on June 17, 1975. and was revised a second time on March 9, 1977. The instruction was issued pursuant to authority contained in the AECA, with the stated purpose of providing policies for

uniform DOD application of pricing and cost criteria in connection with sales under FMS. Until the publication of 7290.3-M, the pricing of defense articles and services was accomplished in accordance with DODI 2140.1. The instruction interpreted the pricing policy portions of the AECA and also provided procedural guidance. DOD operated under the instruction during a ten year period of phenomenal growth in the FMS program which saw sales increase from less than \$1 billion in 1970 to over \$15 billion in 1980. Therefore, practically all the current ongoing FMS programs were established under the guidance of this instruction. [Ref. 48: pp.3-4]

In June 1981, the office of the Assistant Secretary of Defense (Comptroller) issued DOD 7290.3-M, the Foreign Military Sales Financial Management Manual. It covers a number of topics including Budget Authority, Accounting, Cash management, Budget Execution, Pricing, and Billing and Reimbursement. The manual supersedes and consolidates various DOD directives and memoranda which have been issued over a number of years, and is intended to be the sole guidance for FMS financial management. The manual is an improvement over DODI 2140.1. [Ref. 48: p.9]

These pricing policies are provided for price estimating, and for the recoupment of all identifiable DOD direct and common costs associated with each sale. A Price and Availability (P&A) estimate is developed for every potential foreign customer request for defense material. In general, material offered for sale through an FMS case is priced following the same cost principles used in pricing defense articles of DOD use, with the addition of added surcharges to ensure:

- recovery of all costs incurred by DOD components;
- a reasonable contribution to costs incurred in RDT&E and establishing the production facilities for the article;
- an administrative charge for the preparation of the DOD logistic system.

[Ref. 49: p.7-3]

This estimated price is the basis for the preparation of the DD 1513, which, when executed, becomes the basic contract between the U.S. government and the foreign government. In order to comply with the AECA, which stipulates that DOD will recover full costs, the estimates are adjusted after delivery so the Purchaser can be billed for all costs incurred. [Ref. 50: p.III,C-7] The DD Form 1513 makes it clear that the costs cited are only estimates and that the Purchaser is obligated to pay the total cost of the items. Although the USG states that it will "use its best efforts to advise the Purchaser...of any identifiable cost increase... in excess of 10 percent," the



Purchaser is obliged to pay the costs whether or not the USG advises of the increase in a timely manner. [Ref. 51: p.2]

Detailed guidance in DOD Instruction 2140.1 and DOD manual 7290.3-M provides the methodology to compute the appropriate surcharge for the additional costs.

Although surcharges are specifically determined, accounted for and reported within DOD, negotiations with foreign governments for an FMS case are accomplished without breaking out these specific charges. All charges are to be included in a single price in all presentations made a foreign government. [Ref. 52: p.3]

## 2. Pricing Method

### a. *Categories of Price*

The elements of a FMS price can be combined into two major categories: Base Price and Authorized Surcharge. The base price generally refers to the cost of the item or service, i.e., contract price, inventory price, replacement price, etc. The authorized surcharge, on the other hand, relates to the basis application of a charge (often on a percentage or pro-rata basis) that is dependent to some degree on the value of a base price(s) or other pricing combinations. [Ref. 24: p.15-7]

### b. *Price Estimates*

The price estimating process is the responsibility of the Major Subordinate Command (MSC) that has management responsibility for the item or items that the customer wants to buy. The price entered on the DD Form 1513 for each case line is one total price for all the items in that case line and is called a single selling price. The single selling price consists of the base price for the item(s) plus all USG costs such as add-on charges for nonrecurring research, development, test and evaluation; nonrecurring production costs; recurring production costs and asset use charges. The base price for material sold to foreign countries is established on the basis of whether the item is from procurement or stock, and if from stock, whether the item is to be replaced in inventory (see Figure 4.1). The replacement determination is based on whether the sale will create a need for an inventory replacement and whether the replacement decision will be reflected in the Department of Defense program budgeting system within 12 months of its drop from inventory.

(1) *Price Estimating Procedure.* As an example, in the Army, the International Logistic (IL) Directorate takes the administrative lead in processing the DD Form 1513 during the development phase. The determination of the availability of

the item(s) and the preparation of the price estimate is done by item managers. The price estimates for items included in that case but that are not managed by the MSC

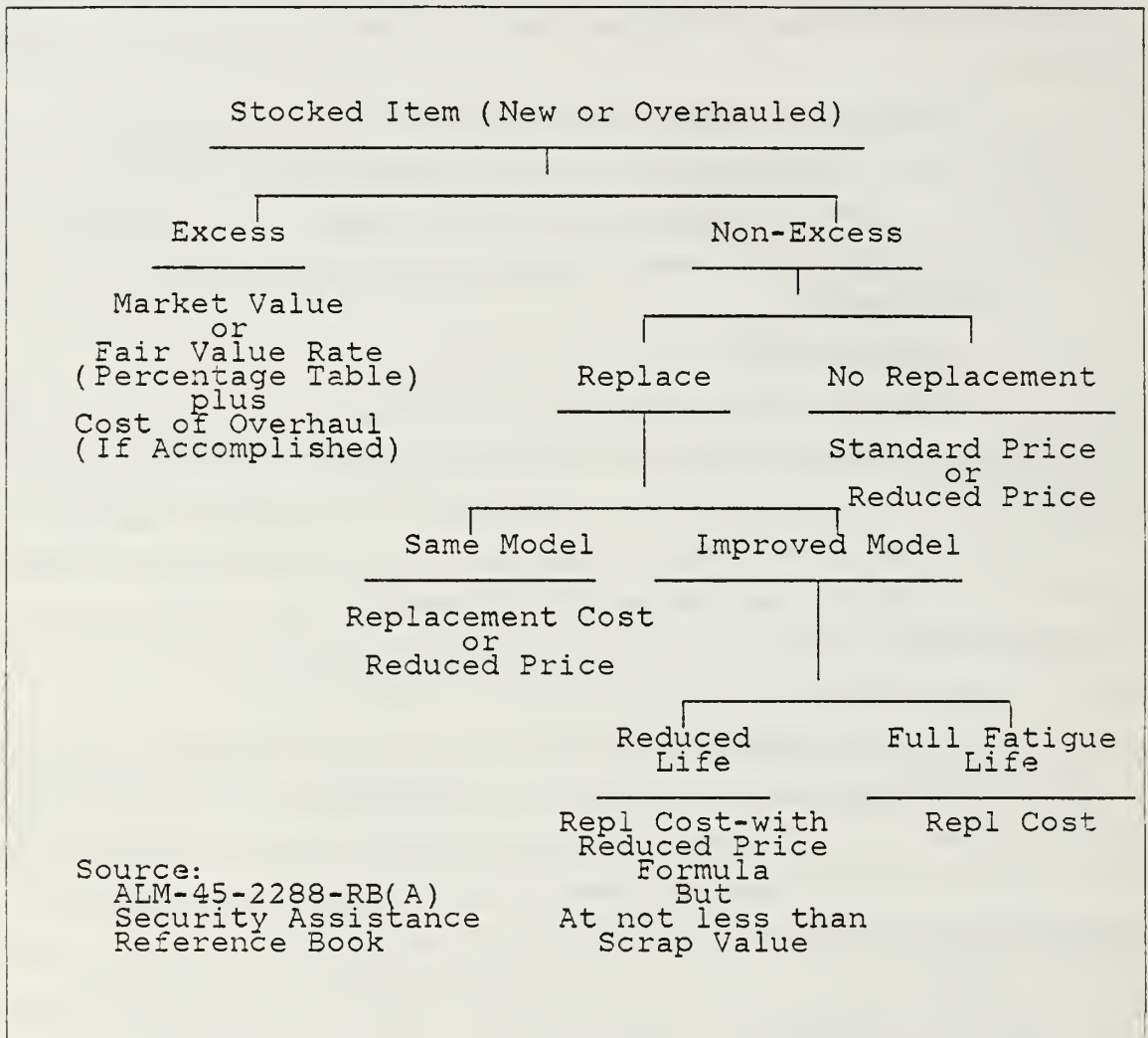


Figure 4.1 Test for Base Price.<sup>11</sup>

preparing the LOA are provided for inclusion by the other responsible commands. Once the required information is gathered, the IL Directorate prepares the case. Before the case is sent to U.S. Army Security Assistance Center (USASAC), the Comptroller Directorate validates the price estimates.

<sup>11</sup>Uldis Rex Poskus, *Single Pricing for Major Items in FMS*, Logistics Study Report, U.S. Army Material Systems Analysis Activity, Fort Lee, Virginia, 1984.

Several different methods are used to arrive at a price estimate. Where the production of the item is on going, the price is usually that of the items being produced; where not, if the item has been produced/purchased recently, that price as it is or inflated, using indices, is used. The prices obtained in this manner will be the most accurate. Where this is not possible and the use of a replacement price is mandated, historic prices are inflated using indices. If a replacement price is not mandated, the standard price is used. The Defense Acquisition Regulation (DAR) does not allow producers to be contracted for bidding price quotes unless it is the form of a Request For Quotation (RFQ) or a Request For Proposal (RFP). This does not prohibit contacting the contractors for quotes that are non-binding on them, i.e., "solicitations for informational or planning purposes."

b) (2) *Standard Price.* Standard prices include the current market or procurement cost of the item at the time the price is established, or re-established. As a rule, standard prices for items currently procured are revised once a year, and when significant changes occur.

In case of U.S. Army, there is no single price available to IL directorates at the subordinate commands to be used as a base price for FMS cases. The values assigned to Army items or equipment and called "standard" prices are primarily designed to provide a simple and uniform method for inventory valuation, accounting, and funds transfer within DOD. These prices are current as of the last representative buy.

The "standard" price as published and associated with the Army Master Data File (AMDF) for secondary items and the Supply Bulletin (SB) 700-20 or 710-1-1 for major items, focuses on historical purchases cost, not replacement cost or current market value. Where AMDF, SB 700-20 or SB 710-1-1 are the only available price sources, they are used with caution. The applicable historic cost indices are used to bring the costs to the present value where replacement pricing is appropriate. The National Stock Number Master Data Record (NSNMDR) in the Commodity Command Standard System (CCSS) provides secondary item prices for economic order quantities and the date of the last such purchase. The NSNMDR is more current than the AMDF which it feeds. [Ref. 53: pp.20-24]

3) c. *Method*

a) (1) *Defense Stock Items.* Pricing of defense items from stock inventories are handled in accordance with DOD 7290.3-M, Section 702. Standard prices govern when nonexcess material is to be sold, and no inventory replacement is required.

For the sale of principal or major items a test is required to determine if a requirement for inventory replacement is created as a result of the sale. When an article is supplied from inventory with replacement required, the FMS selling price will be the best estimate available at the time of drop from inventory. When no replacement is required, the price will be based on the most recent actual procurement cost of the "series" and "model" being sold, and will consider any modifications or improvements, as well as desirability or utility due to age or condition.

b) (2) *New Procurement Items.* Pricing of defense articles from procurement will be in accordance with DOD 7290.3-M, Section 703 and will include full DOD contract costs and authorized surcharges.

In general, defense articles are priced on the same basis as the cost principles used in pricing defense contracts for items for DOD use. However, recognition is given to reasonable and allocable contractor costs which are justified in connection with a particular sale. The cost of deviations from U.S. system configuration and special technical data desired by an foreign government is included as a charge to the foreign government, in addition to the average unit standard price or other normal U.S. charges. The purchaser is obligated to pay all costs incurred by the U.S. government as well as any damages or costs that may accrue from the purchaser's cancellation of the contract.

c) (3) *Direct Charges.*

(i) (a) *Program Management Costs*

Costs which are incurred solely in support of a single FMS program should be charged directly to the FMS cases. A single FMS program is an FMS case or multiple FMS case, written to satisfy a country request for a major force improvement or major management assistance from the DOD. Chargeable program management costs include TDY, expenditure of the equivalent of one or more man-year of effort solely in support of a single FMS program, and supplies or materials.

(ii) (b) *Government-Provided Engineering Service Costs*

Government-furnished engineering services may be specifically requested by the foreign government. However, if services are provided as a necessary part of the management of production of an FMS, costs may be incurred. Specific services requested by the purchaser must be listed on a DD Form 1513. Those services must be reported and billed in the same manner as any other services sold under FMS. Definite criteria are applied to determine whether government-furnished engineering



services associated with equipment purchases should be charged directly to an FMS case(see DOD 5105.38-M). Estimated costs of providing engineering services associated with production of purchased items are included in the estimated unit cost of the item being purchased. Therefore, the DD Form 1513 item price includes not only the estimated contract cost to produce it (including government-furnished material), but also the cost of services required to assure production in the correct configuration. Such costs will also include the pro-rata share of government-furnished testing and evaluation services.

Military Departments will include the appropriate pro-rata share of applicable government-furnished engineering service costs in the reported unit price of the purchased item. SAAC will submit billing to countries at the full unit price reported by the Military Department.

3 (c) Inventory Asset Use Charges

DODI 7290.3-M requires an asset use charge of 1% to be applied to the material base price for articles sold from DOD inventories. The amount of the estimated asset use charge will be included in Block 25 of the DD Form 1513. The following note will be included in all LOAs which include requirements which possibly could result in shipments from DOD inventories: "An amount of 1% will be added to the price of items provided from DOD inventories, so as to cover costs incurred for use of U.S. government facilities."

The Military Departments will report inventory item shipments to SAAC at stock list price or replacement price as applicable. The value of the asset use charge is not included in such delivery reports. At case closure a certificate will be submitted from the Military Department to SAAC exclusive of the asset use charge. SAAC assures the 1% asset use charge is reflected in the final case value. SAAC will process reported deliveries of items from inventories (based on delivery source code) so as to add a surcharge of 1% to the value of the reported inventory shipments. Delivery documentation forwarded to the purchasers as a part of billing data must reflect the charge separately, in the same general manner used for assessment of Packaging, Crating, Handling, and Transportation (PCH&T) charges. SAAC will take actions required to assure that proceeds received from the asset use charge are properly credited to Miscellaneous Receipts of the Treasury.

4 (d) Secondary Items Replacement Price

The stock list of procurement-funded secondary items furnished from inventory are increased by a surcharge published by the ASD(Comptroller). The surcharge is included in the item's price, and covers the increased costs (anticipated due to inflation) of replacing the item from procurement sources. The inflation factor is not arbitrarily applied to the price of major items sold from inventories. Replacement prices for major items are computed in accordance with DODI 7290.3-M. Most such items will be provided against "dollar lines" for Blanket Order FMS cases. The dollar values offered in DD Form 1513 should be sufficient to cover appropriate replacement price for secondary items.

Military Department delivery reports reflect the item selling price as a single price, combining stock list price plus the ASD(Comptroller) published surcharge amount. SAAC must submit billings to purchasers at the price reported by the Military Departments. This guideline do not apply to stock fund pricing, but only to central procurement secondary items provided from DOD inventories. As indicated in DOD 7290.3-M, all CLSSA (FMSO II) shipments will be priced at standard price.

8) (4) *Authorized Surcharges.*

(1) (a) Accessorial Costs

These charges represent certain expenses incident to issues, sales, and transfers of material which are not included in the standard price or contract cost of material, such as:

- Packing, crating and handling costs: Costs incurred for labor, materials, or services in preparing the material for shipment from storage or distribution points;
- Transportation costs: Inland and ocean transportation costs, representing shipments by land, sea, and air, inland and coastal waterways, vessel or air, and including parcel post via surface or air;
- Port loading and unloading costs: Costs for labor, materials or services at ports of embarkation or debarkation.
- Prepositioning costs: Supply distribution costs incurred by locations outside the U.S. in anticipation of support to other authorized customers. These costs are applicable when shipments are made from overseas storage and distribution points, except that no positioning costs shall be assessed on "long supply" stocks;
- Staging: These costs are for aggregation or prepositioning of material in U.S. facilities within the CONUS.

(2) (b) Administrative Charges

An administrative charge shall be added to all FMS cases to recover DOD expenses related to the administration of the FMS transactions in accordance with Section 21(e)(1)(A) of the AECA. Such surcharges are made in lieu of separate computations of charges for the costs of general management and administrative expenses pertaining to supply and procurement and services, and other DOD costs which are difficult to isolate. See DOD 7290.3-M, Section 705, for the appropriate administrative charges which must be included in FMS cases. If the LOA contains both standard and non-standard items, they must be cited as separate line items on the LOA.

On Blanket Order FMS cases or FMSO II cases, the administrative charge will be three percent of the delivered value at case closure. For FMSO I transactions, Supply Support Agreements, the applicable charge is five percent.

Administrative Charges for FMS case cancellation by a purchaser are enumerated in DOD 7290.3-M. A note should be attached to all LOAs (and any amendments) indicating that charges will be assessed, and the amount of the charges, if the case is cancelled or amended.

Rates for accessorial and administrative costs are subject to review at least every two years. Requests for exceptions shall be submitted through the Director, DSAA, to the Assistant Secretary of Defense(Comptroller) for resolution or approval. These requests must contain the basis for justification and supporting data for the exception.

(3) (c) Non-Recurring Cost (NRC) recoupment Charges

Section 21 of the AECA requires that, in selling defense articles to foreign governments and international organizations, an appropriate charge be made for a proportionate amount of any nonrecurring cost of research, development, test and evaluation (RDT&E), and production of major defense equipment (MDE).

Military components are responsible for determining recoupment charges for production cost of \$5 million or more. Non-recurring development and production costs are defined in DOD 7290.3-M. DOD components must use actual, not program, cost data. However, estimates may be used where the development of more precise data is not possible.

Prior to applying pro-rata recoupment charges to sales of items on the Major Defense Equipment List (MDEL), DOD components must ensure that the proposed charge has been approved by the Director, DSAA. Approval will be

requested for only those items: 1) which are on the latest edition of the MDEL; 2) for which there exists a current FMS or commercial demand; and 3) for which there has not been an approved non-recurring cost prorata charge established since 5 January 1977. If a pro-rata charge was determined prior to 5 January 1977, it should be reviewed to identify any significant changes. Changes requiring approval by DSAA are to be submitted to Director, DSAA.

The pro-rata recoupment charges may be reduced or waived for particular sales that would, if made, significantly advance U.S. interests in standardization with NATO, NATO member countries, Australia, Japan, or New Zealand. The word "waiver" includes reductions. Waivers will be considered only where it is demonstrated clearly that a particular sale will significantly advance U.S. interests in standardization.

For all countries and organizations other than those specified in the preceding paragraph, there will be a presumption against granting a waiver unless additional or unusual benefits can be demonstrated. Such benefits must be clearly identifiable and generally attributable to a unique military, foreign policy, or economic advantage of the sale. A description of such benefits will be included in documentation relating to the case. Items on the MDEL are waived or reduced as specified in Section 21(e)(2) of the Arms Export Control Act, as amended. Requests for waivers or reductions relating to product sales are submitted to the Director, DSAA.

#### (d) Charges for Use of U.S. Government-owned Facilities, Plant and Production Equipment

In accordance with DOD 7290.3-M, Section 706, sales of defense articles which involve the use of government-owned facilities and equipment are priced to include an Asset Use charge if there is no rental charge involved. Sales of defense articles which were produced in government-owned facilities or with government-owned industrial plant and production equipment, for which a rental is assessed in accordance with the provisions of DAR 13-406 and 7-702.12, will be priced to include the appropriate rental charge. Non-government use of U.S. government-owned industrial plant equipment requires prior written approval of the contracting officer or Departmental level approval depending upon the percentage of usage, in accordance with the provisions of DAR 13-405. Non-government use of U.S. production and research property for foreign procurement requires the prior written approval of the Military Department having cognizance of the property. such approval may be



granted only if use will not interfere with U.S. requirements, and the work is in support of FMS under the terms of the AECA. Either the use or applicable rental charges will be assessed. Waivers of these charges can be made only in accordance with the provisions of DOD 7290.3-M and DAR 13-406.

(e) Termination Liability Reserve

Military Departments who implement FMS agreements are responsible for the determination of costs of potential contract termination and for ensuring that this amount is collected in advance and held in reserve. These costs are the best estimate of the liability that would accrue to the U.S. government should a particular sales case or agreement be terminated prior to its normal anticipated completion date. For many agreements, potential contract termination costs will change regularly as contracts are awarded, work progresses, purchaser payments are received, and deliveries are made; therefore, reserves will be adjusted accordingly.

The Director, DSAA will be informed of actions taken to determine and collect termination reserves by the submission of Termination Liability Worksheets. These worksheets are required as part of the financial analysis forecasts for LOAs with a total value of \$7 million or more and will be provided to the DSAA when LOAs are forwarded for countersignature. [Ref. 54: pp.700-1 - 719-1]

### 3. F-16 Aircraft Pricing Model

#### *a. Line Items Used in the Model Output*

Determining the specific line items to be used in the model is a two step process: 1) developing a consolidated listing from previous Planning & Review (P&R) and Pricing & Availability (P&A) submittals and 2) adding line items which the model should take into account but which recently developed submittals either did not require or did not address. Line items required in pricing submittals are fairly standard and, therefore, consolidating listings from previous submittals yielded most of the line items eventually required.

While there are numerous cosmetic differences in these submittals, because of country peculiarities or differing requirements, the basic line item contents are fairly consistent. Aggregating these listings of line items yielded a nearly complete listing of potential line items for the model.

There are also some unique items, seldom priced, which should be applicable to any "generic" country. This is due to the extensive programmatic differences between these selected programs, including co-production, software support

requirements. The composite listing of line items developed for use in the managerial pricing model is shown in Table 9.

TABLE 9  
GENERIC LINE ITEMS.<sup>12</sup>

F-16C/D Aircraft Flyaway  
Alternative Mission Equipment  
Support Equipment  
    Developmental Support Equipment  
    Standard Support Equipment  
        Organizational and Intermediate Level  
        Depot Level  
Initial Spares  
Miscellaneous AFLC Cases  
    Management/Travel  
    Country Standard Technical Orders/Data  
    Aircraft Structural Integrity Program  
    Engineering Change Orders  
    Site Survey  
    Training Equipment  
Miscellaneous AFLC Cases  
    Management/Travel  
    Spare Engines  
    Common TOs/Data  
    Weapon System Drawing Set  
    CAD/PAD  
    Provisioning Services and Data  
    OFT Spares  
    Software Support  
    Provision Measuring Equipment Laborator  
    Weapon System Logistics Officer  
    Contractor Engineering Technical Services  
    Interim Contractor Support  
    Contract Administration Services--In Country  
TAC/ATC/USAF Cases  
    TAC Travel  
    Aircraft Ferry Services  
    ATC Travel  
    Maintenance Training  
    Aircrew Training  
    HQ USAF Travel  
Program Subtotal  
PC&H Surcharges  
Administrative Surcharge  
Transportation and Asset Use Charges  
Estimated Total Program Costs

The line items used in the model are developed by combining an aggregate list of previous selected P&R and P&A submittals by the applicable service program/system/item manager with F-16 SPO suggested additions. This provided a

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<sup>12</sup>Robert H. Mattews, *Managerial Pricing Model for F-16 Foreign Military Sales*, p.6, Student Report, Air Command and Staff College, 1985.

listing applicable to any generic country and constructed in a format familiar to personnel working F-16 foreign military sales at the SPO, HQ AFSC, HQ USAF and OSD.

*b. Estimating Methodology for Line Items*

Estimating methodologies used for the various line items within the model are developed based on the individual characteristics of the specific line item. The predominant methods used are contractor estimates, government estimates and predetermined estimating factors. In most cases, the estimates consist of the latest available prices for a specific line item or portion of a line item. multiplied in many instances by the number of aircraft being procured or the number of squadrons or bases planned. Contractor estimates are most often used. Contractor estimates, when they are available, are normally quite accurate.

Government estimates are also used as the pricing basis in some cases, most often when the government agency is the procuring office for the subsystem or when the accuracy of a contractor estimate is questionable. Government estimates are also used when it is believed the accuracy may be better, such as prior to a major contract negotiation or a significant engineering change.

Government estimating factors are added to some of the line items. In some cases this factor is based on a percentage of another item and in other cases it is a fixed amount. Significant government factors used in the model are miscellaneous costs, stocking factors, spares factors, engineering changes and a government administrative surcharge and other accessorial charges.

*c. Line Items Requiring Frequent or Periodic Update*

Within the pricing structure there are varying degrees of price stability for the line items. Therefore, it is needed to identify those line items which will require frequent or periodic update by the user in order to keep the prices current and the model output accurate. Identification of trends from previous P&A and P&R submittals are used in conjunction with projected cost changes to determine the appropriate line items. Trends from prior submittals are the best source of identification.

Because numerous P&R and P&A submittals have been developed within the past few years, significant trends are fairly easy to identify. Pricing stability is identified by looking for increases or decreases of line item prices over time. Because pricing estimates for the foreign governments were accomplished at different times,

over several years, the base year dollars used in the estimating process were also different. To normalize for inflation, constant year dollars are determined through application of the Office of the Secretary of Defense (OSD) escalation rates reflected in Table 10.

1981-82 9.7%	1982-83 8.6%	1983-84 6.9%	1984-85 6.4%	1985-86 6.1%	BEYOND 5.8%
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When combined with the trends isolated during review of the P&R and P&A submittals, the line items shown in Table 11 are determined to be those which are anticipated to require either frequent or periodic update.

Mainframe Engine Radar Alternative Mission Equipment Developmental Support Equipment Avionics Standard Support Equipment Operational Flight Trainer Government Furnished Equipment
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Trends from prior submittals and projecting cost changes are the means used to identify line items requiring frequent or periodic update. The construction of the model allows for easy update of these items through a special section within the model. To construct a "simplified managerial" model, those input parameters which significantly effected the output results are isolated.

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<sup>13</sup>*Ibid.*, p.10.

<sup>14</sup>*Ibid.*, p.11.



*d. Input Parameters Significantly Influencing Output*

Program input parameters are significant to the model if they meet either of two criteria: they significantly alter the program dollar value or the program contents. The degree of simplicity attained by the model is, in large part, measured by the ability to minimize the number of necessary input parameters without substantially sacrificing accuracy. Variables determined to have a significant impact on the output or necessary to describe the program are structured as "independent input parameters" while those not having a significant impact are classified as "dependent."

TABLE 12  
AVERAGE DISTRIBUTION OF TOTAL PROGRAM VALUE.<sup>15</sup>

Line Item	Average
Aircraft	76.4%
Developmental Support Equipment	4.2%
Standard Support Equipment	1.7%
Initial Spares	9.7%
Spare Engines	3.9%
Training Equipment	1.4%
Other Systems Command Equipment	1.3%
Other Logistics Command Cases	1.0%
TAC, ATC & HQ USAF Cases	.4%
Total	100.0%

Because of their relatively high dollar content, only a few input parameters significantly impact the model output. Table 12 illustrates that almost 94 percent of the value is concentrated within aircraft, developmental support equipment, initial spares and spare engines cases. 86 percent is represented by only the aircraft and initial spares line items.

The variables within these groupings are isolated and directly related to country requirements. The result is predictable; the number of single and two seat aircraft are the primary determinants of total program price with the next largest factor being the country organizational and maintenance concept. It becomes apparent that the model could be constructed to approximate the total program by inputting the answers to only a few questions. How many aircraft? How many squadrons? Will a depot facility be required? Does the country want a simulator? Other program inputs would be more efficiently modeled through use of estimating methodologies.

<sup>15</sup>*Ibid.*, p.14.

Dependent variables represent those input parameter and program inputs which may be accurately approximated by basing their value on a given relationship to other "independent" variables. As previously discussed, the quantity of initial spares recommended may be approximated by a relationship to installed quantities procured and the total support equipment prices are directly related to the desired maintenance concept.

Input parameters, or individualized country requirements, identified as having a significant impact on the model output are classified as independent and are input through a special section in the model. Dependent variables are embedded within the model as percentage relationships to other line items. This allows a simplified model to be constructing using a minimum number of input variables.

*e. Spreadsheet Pricing Model*

TABLE 13  
ITEMS USED IN COUNTRY REQUIREMENTS SECTION.<sup>16</sup>

Number of F-16C Aircraft
Number of F-16D Aircraft
Number of Squadrons of Aircraft
Number of Wings of Aircraft
Number of Depot Maintenance Facilities
Number of Avionics Intermediate Shops
Number of Digital Radar Land Mass Systems
Number of Operational Flight Trainer
Number of Vital VI Systems
Number of Electronic Warfare Training Devices
Amount of Contractor Engineering Technical Services
Amount of Interim Contract Support
Amount of Management Reserve

The managerial pricing model was developed in a spreadsheet format to be compatible with the Electronic Spreadsheet, with separate sections used to accomplish the various tasks. The PeachCale is the trademark of the Peachtree Software.

The Country Requirement section is the primary input section of the model. Country program descriptive data is input in this section. If previously entered pricing information is current, entering only this information allows the model to be run. The variable listed in this section represent those items which most significantly effect the model output, primarily country requirements. Above Table 13 lists the

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<sup>16</sup>Robert H. Matthews, *op. cit.*, p.17.

items input to the model through this section.

The Input Unit Prices section allows selected prices within the model to be updated easily. This section is used for those line items which are determined to require frequent or periodic update. Other sections of the model reference this section to obtain appropriate prices. Table 14 contains a listing of the items which are updated through this section.

TABLE 14  
ITEMS USED IN INPUT UNIT PRICES SECTION.<sup>17</sup>

F-16C Aircraft  
F-16D Aircraft  
Engine  
Radar  
Alternative Mission Equipment  
Operational Flight Trainer  
Digital Radar Land Mass System  
Electronic Warfare Training Device  
Vital VI Visual System  
Governmental Support Equipment  
Developmental Support Equipment (O-Level)  
Developmental Support Equipment (I-level)  
Developmental Support Equipment (Depot Level)  
Avionics Intermediate Shop  
Standard Support Equipment (O&I Level)  
Standard Support Equipment (Depot Level)

The Pricing Worksheet section performs the actual calculations. The structure is essentially that of a P&A submittal, with additional information added at some points. This additional information, such as unit costs and selected subtotals, provides the availability of additional insight without performing additional calculations. It also simplifies later sections of the model by avoiding unnecessary recalculations. Inputs to this section are accomplished automatically by the model. The model methodologies may be updated by revising the information embedded within the spreadsheet calculations.

The P&A Format section consolidates and presents the data previously calculated in a classical P&A format. No new calculations are performed in this section, only a restructuring of existing data. The format is essentially the same as shown in Table 9.

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<sup>17</sup>*Ibid.*

The Executive Summary section restructures the existing data into a format more suitable for executive summaries. Data is presented in base year dollars, percentage of total and then year dollars. This is extremely beneficial when performing sensitively analyses where large large fluctuations in aggregate prices are of paramount importance. Table 15 contains a listing of the sections used for aggregating pricing data within the Executive Summary.

TABLE 15  
ITEMS USED IN EXECUTIVE SUMMARY SECTION.<sup>18</sup>

F-16 Aircraft
Developmental Support Equipment
Standard Support Equipment
Initial Spares
Spare Engines
Training Equipment
Miscellaneous AFSC Cases
Miscellaneous AFLC Cases
TAC & ATC Cases
HQ USAF Cases
Subtotal
PC&H
3% Administrative Surcharge
Total

The LOA Format section restructures existing data into the classical LOA format. It provides the basic information included on a DD Form 1513: major command responsibility, item description, unit cost and total costs. Accessorial charges are also included. Table 16 contains a listing of the line items included within the LOA format.

The Major Command Analysis section provides a breakout, by major command, of the amount each manages. The breakout includes both then year dollar values and percentages of total for Systems Command (AFSC), Logistics Command (AFLC), Air Training Command (ATC), Tactical Air Command (TAC) and HQ USAF.

The separate sections provide a building block approach to the model. There are two primary input sections, one primary calculations section, and four sections which restructure, analyze and present the data in useable formats. Clearly,

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<sup>18</sup>*Ibid.*, p.18.



however, the model is of limited usefulness without adequate user documentation.  
[Ref. 55: pp.4-21]

TABLE 16  
ITEMS USED IN LOA FORMAT SECTION.<sup>19</sup>

F-16C Aircraft  
F-16D Aircraft  
Developmental Support Equipment  
Standard Support Equipment  
Training Equipment  
Spares  
Alternative Mission Equipment  
CSTO's and Data  
Common Technical Orders  
Weapon System Drawing Set  
CAD/PAD  
Precision Measurement Equipment List  
Software Support  
Engineering Change Orders  
Aircraft Structural Improvement Program  
Site Survey  
Aircraft Ferry Services  
Contractor Engineering Technical Services  
CAS In-Country  
Weapon System Logistics Officer  
AFSC Management & Travel  
AFLC Management & Travel  
HO USAF Management & Travel  
ATC Travel  
TAC Travel  
Blanket Training Case  
Provisioning Services & Data  
Estimated Costs  
PC&H  
Administrative Costs  
Supply/Support  
Asset Use Charges  
Transportation  
Estimated Total Cost

#### 4. Problem

Current pricing policy is a legacy from the past. Since World War II, the U.S. has been the major supplier of weapon systems in the free world, and frequently, the only source to support the specific weapon systems. The Arms Export Control Act requires the US DOD to recover the full cost of all foreign military sales.

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<sup>19</sup>*Ibid.*, p.20.

In USG procurements, high dollar contracts for major weapon systems frequently fall into sole source negotiations. Such negotiations, however, usually start as intensively competitive negotiations. Competition is based on cost, design and management areas. Even in sole source negotiations the U.S government must buy at reasonable prices. Prices will be negotiated. Competition is the prerequisite of the U.S. government procurement. When it is not possible, then cost analysis must be performed.

From the perspective of the U.S. customers, prices are also a primary source of decision making in the defense procurement. The good performance at a reasonable price makes a certain system attractive to a customer. In reality, it is difficult for the foreign country to evaluate prices of weapon systems provided by FMS. The only source of a sales price from the USG is P&R or P&A which includes charges as a single price. Further, information on the P&A of the U.S. defense equipment or services is provided with the LOA. Under DOD policy, the customer has only 60 days to accept the LOA. Accordingly, the customer has only limited pricing information and a short period of time for review. In detail, the other restrictions on the customer's price evaluation are as follows:

- The USG does not compete with the U.S. industry for military sales. Moreover, as a matter of policy, the USG normally does not knowingly provide foreign customers comparison pricing information;
- The direct comparison of LOA and commercial contract prices is difficult since they employ quite dissimilar pricing structures;
- DOD policy allows the purchaser only 60 days to review the LOA. Usually, this is not enough time to evaluate P&A in the developing countries;
- P&A or P&R is only an estimate of total cost. According to the General Conditions of DD Form 1513, the purchaser shall make payment(s) to the USG the total cost to the USG of the items, even if the final total cost exceeds 10 percent of the amounts estimated on LOA. Thus, the large variance between the estimation and the final cost may make price evaluation worthless;
- Without consideration of its requirements for the weapon systems in advance, and if the purchaser relies only on the P&A or P&R, price evaluation may not be beneficial. In addition to price, delivery time, quality and performance are other major areas to be considered. Even though the purchaser procures weapon systems at a low price, the purchaser's specific requirements, performance, and quality may not be insured. The developing countries usually have a limited ability to study their requirements for sophisticated weapon systems in an accurate manner;

- Actual FY 1982 inflation rates to recoup actual value or replacement cost from a sale of secondary items in the U.S. military inventory averaged more than 10 percent: AF, 15.9%; Army, 11.8%; Navy, 12.0%; MC, 10.0%; DLA, 11.0%. Compared to the commercial business rate (average 3-4%), military rates were extremely high;
- The USG has pursued a program to recover its full cost of transaction. It has neglected to calculate the savings to the U.S. through the FMS programs. Savings attributed to FMS are classified into five major categories: R&D recoupment, learning curve effects and economic of scale, overhead cost, production line gap and others. The USG has also failed to consider the additional costs caused by the USG in administering the FMS program. Some examples include late delivery, delay of reporting and processing, double billing or wrong prices, etc..

### 3 B. CONTRACT

The conduct of FMS is a government-to-government transaction. Two governments must agree before a transaction is concluded. Neither government can direct the transaction. Sales are negotiated. Both the buyer and the seller must be satisfied. When procuring for a foreign government, DOD applies the same contract clauses and contract administration procedures which it would use in procuring for itself, except where exceptions are authorized. In keeping with the DOD policy, procurements made for FMS customers are done under U.S./DOD regulations and procedures. This affords the foreign customer the same benefits and protection that apply to DOD procurement, and is one of the principal reasons why nations want to procure through FMS channels.

Foreign Military Sales are implemented through a reimbursement agreement. The estimates are adjusted after delivery so that the foreign government is billed for all costs incurred. The LOA is the form used for all foreign military sales of defense articles, services and training by the military departments and authorized defense agencies and when signed, is the official agreement between the U.S. and the purchasing nation regarding terms and conditions pertaining to furnishing certain goods and services. [Ref. 1: pp.11-1 - 11-2]

#### 1. Request

A foreign country or international organization initiates an FMS purchase by requesting a LOA from the U.S. government. This request does not obligate either party to the purchase but begins the formal review process. [Ref. 9: p.23]

1) a. *Letter of Request (LOR)*

An eligible customer conveys that desire to the U.S. government in a LOR. No specific format is required for a LOR. The information should be as complete and detailed as is necessary for the service to provide an LOA that can guarantee a completely operable and supportable system for an initial period. The LOR must contain at least the name and address of the originator and a traceable reference number, such as a message cite number or date-time group or a letter serial number and date. [Ref. 1: p.9-9]

2) b. *Category*

A Request may be for P&R estimates, P&A estimates, LOA or Letter of Intent (LOI) for long lead-time items. In any case they are categorized as either "Requests for Significant Combat Equipment (SCE)" or "Requests for Other Foreign Military Sales." [Ref. 1: p.9-2]

3) c. *Standard FMS Cases*

Standard FMS cases are divided into Defined Order Cases, Blanket Order Cases, and Cooperative Logistics Supply Support Arrangements (CLSSAs). These cases are used to provide major weapon systems, training, design and construction services, and related defense articles and services on a government to government basis from the U.S. government.

A Defined Order case is one in which the items, services or training to be provided are started explicitly on the LOA. The Blanket Order FMS cases represent an agreement between a foreign customer and the U.S. government for a category of material or services with no definitive listing of items or quantities. The CLSSAs are peacetime military logistics support at the depot level for U.S.-made military material possessed by foreign countries and international organizations. The CLSSA is normally the most effective means for providing common repair parts and secondary item support for equipment of U.S. origin which is in allied and friendly country inventories. The CLSSA provides for the execution of FMS orders (FMSOs) covering stockage, storage and consumption as follows:

- a) • FMSO I. It consists of an LOA covering the estimated dollar value and total initial agreed list of items and quantities to be stocked and maintained on order from procurement for support of the purchaser's U.S.-furnished equipment;
- b) • FMSO II. It consists of an LOA covering the purchaser's estimated withdrawals of material from the supply system for an agreed period (normally one year). This CLSSA requisition case is undefined as to items and quantities



and reflects in a dollar amount, the estimated consumption for the agreed period. [Ref. 50: pp.7-2 - 7-5]

## b. 2. Source Selection

Under the U.S. standard procurement and contract management procedures, the foreign country's representatives are not allowed to review lists of potential bidders, delete names from such lists, give direction concerning source selection decisions or contract terms, or interfere with a prime contractor's placement of subcontractors.

However, at the initiation of purchase request, the foreign customer may request that defense articles or services be obtained from a particular contractor if the sole source selection is based on objective needs of the customer. The customer may also request a sole source subcontractor. [Ref. 9: p.26]

## 3. P&R and P&A

Formal acknowledgement to the customer of receipt of a valid LOR is required within five days of such receipt. The military departments will provide P&R data within 45 days after receipt of the request. P&A data will be provided 60 days after receipt of request. [Ref. 1: p.9-6,9-10]

The Department of State (PM) receives all requests to purchase SME and generally approves the sale within a few days. Simultaneously, DSAA reviews the purchase request and, if it and State Department approve the request, assigns a DOD component the responsibility of preparing the LOA and the congressional notification. In some cases, the reviews are pro-form, confirming a decision that was made earlier in conjunction with a Defense Requirement Survey, request for P&R, or P&A.

At an early stage of considering a defense purchase, a country may request P&R data. P&R contains basically the same information as provided in P&A but it is prepared quickly, the information is not sufficiently accurate to permit its use in preparing budgets or LOA's. Information on the P&A of U.S. defense equipment or services is provided with, or may be provided before an LOA. If the U.S. government plans not to sell the articles to the requesting country, it will not provide the P&A data. All responses for P&R and P&A data will include the following note: "The provisions of the foregoing P&R (or P&A) data does not constitute an agreement between the U.S. government and the customer, nor a U.S. government commitment to provide the articles or services for which these estimates are provided." [Ref. 9: pp.27-29]

#### 4. Negotiation

Negotiation may be defined as the processes of planning, reviewing, and analyzing used by a buyer and a seller to reach acceptable agreements or compromises. These agreements and compromises include all aspects of the business transaction, not just price. One party agrees to provide goods and services, for a consideration-usually money-, at a specific time, in a specific condition, at a time and in a manner specified. Negotiations involve all the above components but usually focus on the amount of consideration to be provided.

Under FMS, however, the amount of consideration is frequently not an item of negotiation because the purchaser agrees to pay all cost incurred by the U.S. government. Nevertheless, price negotiation needs to be addressed because it is a technique used to reach a sound decision on the price in the absence of effective price competition. (which does not exist in the FMS transaction) All other factors, however, are also negotiated: the delivery date; method of delivery; method of payment; the item(s) to be delivered; the quantity or amount to be provided; perhaps even the terms of issue (replaced in kind with an improved item, without replacement, etc) if the item is coming from stock.

The point is that there is negotiation, but it must be channeled into areas that are productive. In successful negotiation, both sides will win something.

#### 5. Offer and Acceptance

##### a. Policy

The DD Form 1513, LOA, will be used for all foreign military sales of defense articles and services by the military departments and defense agencies. The offer itemizes the defense articles and services offered and when executed becomes an official tender by the government of the U.S.. The acceptance constitutes the agreement of the foreign government to the offer and with applicable funding completes the contract. Annex A of the DD 1513 contains "General Conditions" which is an official part of every offer issued.

In all FMS cases involving major systems/end items, the LOA will include all complementing/supporting material and services as opposed to negotiating separate cases for each of these items/services. Exceptions to this requirement must have the prior approval of DSAA/Operations. Such additional terms and conditions as may be appropriate for a particular sales case shall be set forth in one or more attachments or continuation sheets to the DD Form 1513. All attachments are an integral part

thereof. Each page should indicate the case identifier at the top of the page and be numbered consecutively. The percentage rate for determining packing, crating and handling costs, general administrative costs, and supply support arrangement costs should not be indicated in the applicable blocks.

*b. Preparation of Offer*

The DOD Component should proceed with the development of the LOA when tasked by DSAA in the case of a request for the purchase of Significant Combat Equipment (SCE) or Non-SCE. The letter of request must be validated to insure the potential customer is an eligible FMS recipient, that the article or service sought may be sold and that the request was received through proper channels.

DOD components must formally acknowledge receipt of approved LORs within five days. Data cards for valid LORs must be submitted to DSAA for input into the 1200 system within 10 calendar days of receipt of the request. The DOD component is responsible for inserting the appropriate Military Articles and Services List (MASL) line data for each line item on each LOA and processes LOAs which meet the thresholds for reporting to the Congress in accordance with Section IV, Chapter VII of Manual of Security Assistance Management (MSAM). Maximum processing time between the receipt of a request for a LOA and submission or Amendment thereto to DSAA for coordination and/or countersignature is 60 days. Earlier response will be made whenever possible.

The LOA, when signed, is an official agreement between the U.S. and the purchasing customer regarding terms and conditions pertaining to furnishing certain goods or services. As such, the DD Form 1513 and its enclosures must provide sufficient detailed information so as to make clear the obligations of the U.S. and the Purchaser. The type and amount of information which must be conveyed will vary depending on the nature of the sale. However, at least some information which is supplemental to the preprinted Form is required for each sale. The normal method of accomplishing this is in the form of explanatory "Notes" which are cross-referenced to the line item information included on the face of the DD Form 1513. Inclusion of this information as a complete package within the LOA, rather than orally or by separate correspondence, reduces misunderstandings regarding FMS Case commitments. Section II, Chapter VII of MASM shows the supplemental information for LOAs.

All LOAs should indicate a coordination by the comptroller and legal counsel of the appropriate DOD component. The Operations Directorate

(DSAA OPS) is the point of entry in the OSD for coordination of FMS actions, when DSAA coordination is required before countersignature. The Operations Directorate is also responsible for obtaining coordination of appropriate OSD staff elements, and as the DSAA comptroller.

After any required Operations Directorate, DSAA, approval of the LOA has been obtained, DOD components should forward to the DSAA-Comptroller, FMS Control Division, the original plus two copies of the signed LOA for countersignature prior to release to the purchasing country. The DSAA Comptroller and the SAAC will take action to process and record appropriate extracts of data from the DD Form 1513 into the DSAA FMS Database. Countersignature and DSAA Operations Directorate coordination are separate and distinct requirements. Countersignature does not constitute DSAA coordination or DSAA concurrence with all aspects of the LOA.

3) *c. Duration of Offer*

Each letter of Offer will include the date upon which the offer expires. DOD policy is to allow the purchaser no more than 60 days between the date of issue of the Offer or Amendment and its expiration date. When the Letter of Offer is forwarded to the DSAA, for coordination and/or countersignature, the date of the Offer should be completed along with the signature and typed the name and title of the DOD component authorized representative. In addition, Block 8 of the Offer should contain an expiration date of 85 days after the date placed in Block 7 of the Offer. This 85 day period permits a 60 day review period and a 25 day period for the administrative processing required for countersignature and for DOD component issuance of the LOA or Amendment to the purchaser.

4) *d. Acceptance of Offer*

The purchaser should complete the acceptance portion of the LOA. The form should be signed, dated, and the copies forwarded to the MILDEP and three copies to the SAAC along with any required initial deposit before the expiration date listed on the offer. Requests by the purchasers for extensions to expiration dates will be honored only after a full review by the preparing agency to insure that all data included in the Offer remains valid. [Ref. 50: pp.7-28 - 7-45]

f. **6. Change and Modification of LOA**

Because of price and quantity changes, the LOA often needs to be changed. This can be done in three ways: by preparing a new LOA, by preparing an amendment to the LOA ((DD Form 1513-1, Amendment to Offer and Acceptance) or by modifying



the LOA (DD Form 1513-2, Notice of Modification of Offer and Acceptance). When possible, the preparation of a new LOA is avoided by using an amendment, or a modification to the LOA. The amendment is used for minor changes that require purchaser acceptance before implementation. Where the changes to the LOA are unilateral on the part of the USG and do not require purchaser acceptance, a modification is used. The modification is most frequently used when a case is decreased in scope, when its availability is changed, when the total cost of a case is increased by 10 percent or more, or when the case increases by a large amount (\$500,000) that is less than 10 percent for a high cost case. The form provides for customer acknowledgement of the final case close-out price within the 10 percent limit and does not require renegotiation. [Ref. 53: p.16,20]

## g. 7. Closure

A Foreign Military Sales case, as far as case closure is concerned, goes through two distinct stages. The first stage, commonly referred to as the supply complete stage, is finished when the implementing agency (IA) has provided all of the material or services required, in addition, the IA has provided actual costs to the SAAC. At this time, the IA certifies through a case closure certificate, that the net case value is complete and accurate taking into consideration authorized variances between IA and SAAC records. The receipt of a case closure certificate at SAAC "triggers" the second stage, often referred to as a financially complete case. When SAAC completes case reconciliation action, the FMS case is reclassified to an inactive status. Then, SAAC issues to the customer a final statement of account or the final DD Form 645, and the case is considered financially as well as supply complete.

Obviously, there are many actions that must occur before a case becomes supply complete. Before addressing that, how a case becomes a candidate for closure should be understood. This can be explained only after the basic characteristics of the types of cases are identified. A blanket order case becomes a candidate when its money is used or the ordering period has expired. The same selection criteria apply for the requisition case under a CLSSA. The defined order case, however, is different simply because of its characteristics. A customer could request, under this type of case, anything from a major weapon system to small repair parts needed to keep a system operational. Since the customer is very specific with respect to wants and needs in a defined order case, a P&A study is performed as part of writing the case. In so doing, price, source and availability are estimated. Long-lead time items and some

target date are established as to when such a case would become a candidate for closure.

Once a case is selected for closure, the next step is to assure that all actions are complete and that the implementing agency accounting records are in agreement with the SAAC accounting records. This requires the implementing agency to take the following actions:

- 1) • Verify there are no unfilled requisition, or unmatched supply or status reports;
- 2) • Verify all items have been delivered or shipped, all services performed, and all such actions reported to the SAAC;
- 3) • Verify that contracts awarded in connection with the case are financially complete, or that the contracting officer has advised that no additional costs can be identified, or that financial conditions on long-running contracts have been met;
- 4) • Verify that outstanding Reports of Discrepancies have been processed;
- 5) • Verify that financing appropriations have been reimbursed;
- 6) • Request an FMS case trial balance for the above-the-line costs from the SAAC, and reconcile the implementing agency accounting records to the SAAC trial balance. The implementing agency should process whatever documents are necessary to bring the records into agreement.

Once the preceding actions have all been completed the implementing agency should:

- 1) • update the DSAA 1200 system to reflect a supply complete status;
- 2) • submit a case closure certificate to the SAAC;
- 3) • submit a final DD Form 2060 and 2061 to the SAAC.

When SAAC receives the case closure certificate the case then goes into a reconciliation status where, upon completion, the case will be considered financially complete. The SAAC is responsible for ensuring that the following steps occur before transferring the case to an inactive status:

- 1) • The case closure certificate has been received from the IA;
- 2) • The final DD Form 2060 and 2061 have been received;
- 3) • The outstanding reports of discrepancy have been resolved;
  - The delivery billings equal case closure value;
  - The trust fund expenditures equal case closure;
  - The administrative costs have been billed;
  - The accessorial costs have been billed;
  - The add-on costs have been billed (e.g., contract administrative services);
  - The amounts billed equal amounts collected;

- The Final Statement of Account (Final DD Form 645) has been issued to the customer.

Military departments can retire case file records to record holding areas after receiving a copy of SAAC's final statement of account. The SAAC can retire case records no earlier than three years from the date of last correspondence with the customer. [Ref. 56: pp.70-72]

### 8. Problem

Under the Arms Export Control Act, the USG offers to sell to the purchaser the defense articles and services. The LOA is the official agreement between the U.S. and the purchaser regarding terms and conditions pertaining to furnishing certain goods and services. Essential to any contract is an agreement that may be defined as a so-called "meeting of the minds" prior to the transaction. Sales should be negotiated so the buyer and seller are satisfied mutually.

When procuring for the purchaser, the DOD shall, in general, employ the same contract clauses, the same contract administration, and the same inspection procedures as would be used in processing for itself, except as otherwise requested by the purchaser and as agreed to by the DOD. In general, the low skill level of the purchaser's contracting staff is one of the major reason why it favors FMS.

Most of the developing countries do not have skilled contract teams. Further, it is not easy for them to understand the USG' substantial and complex contract laws. Therefore, even though the purchaser configured its exact requirements, it often fails to reflect them in the contract. The major problems of the purchaser are as following:

- Misunderstanding of the USG contract laws and regulations. The Arms Export Control Act, Defense Acquisition Regulations (DAR), Federal Acquisition Regulations (FAR), General Conditions of DD Form 1513 are the basic documents of FMS contracting. However, it is difficult for the purchaser to follow them without a professional contract team because their complexity. Further, the changes of regulations and their impact on the purchaser are hard to be interpreted. The general terms and condition on the back page of DD Form 1513 are frequently illegible. As a result, the misunderstanding of the contract laws leads to an unfair and unilateral contract;
- Little communication in the contract. There should be a "meeting of the minds" in the contract. However, there are several obstacles to the communication: few officers with the contractual and language skills, the miscomprehension of the contract laws, ill-preparation of negotiation, the uncertain requirements, etc;
- Poor negotiation. Neither government can direct the transaction. Sales should be negotiated. Unfortunately, there are no negotiation clauses in the Manual of



Security Assistance Management or other security assistance references. Clearly, negotiation is the important area which the purchaser must develop. The reasons of poor negotiation are similar to ones of poor communication;

- Inflexibility of contract type. The only type of agreement under FMS is the cost reimbursement. This type of contract is often used in USG procurements. Its typical applications are research and development. Cost reimbursement contracts provide for payment of allowable costs incurred in the performance of the contract, to the extent prescribed in the contract. It establishes an estimate of costs for the purposes of obligation of funds, and a ceiling that the contractor may not exceed without prior approval by the contracting office. FAR, Part 31 contains statement-of-cost principles that are used as a basis for determining costs under cost reimbursement contracts. This type is used only when it is likely to be less costly than other methods, or it is impractical to secure suppliers or services of the kind or quality required without the use of such type of contract. However, the FMS customer does not have any other alternatives except this type agreement;
- No waiver clauses to the ROK. Only where it is proved clearly that a particular sale significantly advances the U.S. interests in standardization, the specific cost recoupment charges may be reduced or waived. Under the current law, waiver is applied to NATO, NATO member countries, Australia, Japan or New Zealand. The ROK has been in the possibility of conflict and equipped mostly with the U.S. standardized weapon systems, but is not included in the waiver clauses.

## C. FINANCING

### 1. Principles

#### a. *Recovery of Costs*

DOD conducts financial management of the FMS program at no cost to the U.S. government, as required by the AECA, and insures prompt and complete accounting to the FMS purchaser. Therefore, in compliance with the AECA, Annex A of the DD Form 1513, contains provisions which make it mandatory for the FMS purchaser to pay in U.S. dollars for the full value of the transaction, regardless of the estimated costs, payment schedule, or terms of sale specified on the LOA.

#### b. *Financial Administration of the FMS Program*

The SAAC has been established as the central DOD office for dispatching billings to, and receiving payments from FMS customers. This central office provides the customer with a single source to which payments can be made, and to which queries concerning these payments or other financial matters can be addressed.

A separate trust fund has been established to account for payments received from customers and disbursements against implemented FMS cases. This



fund can be either cited directly on contracts for, the procurement of defense articles/services for that customer, or can be used to reimburse MILDEP appropriations for delivers from DOD stocks, or procurement. DOD policy for use of direct cite or reimbursable method of funding is set forth in DOD 7290.3-M.

Cash payments deposited to the customer trust fund other than for initial deposits are based on requests for funds (FMS Billing Statement, DD Form 645) submitted by the SAAC. The SAAC is responsible for assurance that sufficient cash is available from the foreign government to cover costs already incurred or to be incurred during the remainder of the forthcoming 90 day period; e.g., contractor progress payments, contractor holdbacks, potential termination charges, deliveries from DOD inventories, etc. Therefore, billings will be the amount shown on the Payment Schedule (Financing Annex) attached to the DD Form 1513, or the quarterly forecast of the financial requirements associated with the case, whichever is greater.

Cash payments received for an individual FMS case may be in excess of the final charges. With customer approval, these funds can be retained in the customer's account demand and applied against other FMS cases. Upon customer demand, however, these overpayments are refunded at the time the FMS case is closed provided there are no delinquencies for other FMS cases for that customer.

#### b. 2. **Terms of Sale**

Terms of sale indicates when payments are required and whether the agreement is to be financed on a cash or FMS credit (loan) basis. Terms of sale and related statements to be used on LOAs in terms of FMS cash purchasing are as follows:

"Cash with Acceptance." This term applies when the initial cash deposit equals the amount in the "Estimated Total Costs" block of the LOA. This term also is used for FMSO I even the initial deposit is less than "Estimated Total Costs."

"Cash Prior to Delivery." Under this term, the U.S. government collects cash in advance of delivery of defense articles and rendering of defense services and design and construction services from DOD resources.

"Dependable Undertaking." Under this term, the U.S. government collects cash in advance of procurement contract payment requirements. The countries identified in DOD 5105. 38-M are authorized to make direct arrangements with the cognizant DOD component for purchases under a dependable undertaking transaction.

"Payment on Delivery." Under this term, the U.S. government issues bills to the purchaser at the time of delivery of defense articles or rendering of defense services from DOD resources. The implementing agency may use this term only pursuant to a written statutory determination by the Director, DSAA, who must find it in the national interest to do so.

If more than one of the above Terms of Sale apply to a particular LOA, the implementing agency will cite all of the appropriate Terms of Sale on the LOA as seen in DOD 5105.38-M.

### c. 3. Cash Management

#### a) a. *Estimating Cash Advance Requirements*

Calculation of the cash requirements for a specific FMS case requires that case costs be subdivided into two broad cost categories. The first category is the portion of case value to be provided under authority of Section 21 of the AECA, sales from DOD inventories and services of DOD personnel. The second category is the portion of case value to be provided under authority of Section 22 of the AECA, procurement of hardware or contractor services for the FMS customer.

The cash advance for the portion of the case classified as a Section 21 sale includes the estimated earned reimbursements to be realized by DOD appropriation/fund accounts during the three-month period subsequent to the due date of the billing statement issued by the SAAC.

The cash advance for the portion of the case classified as a Section 22 sale includes estimated disbursements to contractors for contractor invoices and potential disbursements to contractors if additional cash deposits are not made by the customer in a timely manner or the case is unilaterally cancelled by the customer. In this case, cash advances required to support procurements for FMS customers are based on normal administrative and procurement lead times for the type of commodity being procured. [Ref. 54: p.401-1]

#### a) b. *Payment Schedule*

It is DOD policy that FMS customers be requested to pay amounts reflected in the Financial Annex (Payment Schedule) to the DD Form 1513 except where potential cash disbursements are anticipated to exceed the current payment schedule. The purpose of the Financial Annex is to supplement and amplify terms in Paragraph B of Annex A to the DD Form 1513, and to provide a clear understanding between the U.S. government and the purchaser as to the estimated rate and timing of

the payments to be made. The Financial Annex is prepared by implementing agencies. DOD policy essentially fulfills two objectives: (1) the FMS purchaser is insured of having sound budgetary information at his immediate disposal; and (2) the USG is assured of receiving monies in advance of anticipated expenditures.

Payment schedules are a consolidated formal presentation to the FMS customer of the estimates of cash requirements and potentially consist of two financial categories: (1) an initial deposit, and (2) estimated quarterly billing amounts. If initial deposits are required upon acceptance of a sales agreement, the amount of the initial deposit should be sufficient to cover all costs and contingencies (e.g. contract holdback, potential termination liability) anticipated to be incurred until the first billing statement can be rendered and monies collected.

Implementing agencies closely monitor the accuracy of payment schedules on all cases to insure that cash is available when the necessity for disbursements arises. [Ref. 57: pp.4-2 - 4-3]

### 3) c. *Trust Fund*

The FMS country trust fund is a fund credited with receipts which are earmarked by law and held in trust or in a fiduciary capacity by the U.S. government for use in carrying out specific purposes and programs. The FMS trust fund represents the aggregation of cash received from customers.

The SAAC is responsible for management of the trust fund. FMS customer cash deposits for defense articles and services sold under Section 21 and 22 of the AECA are made in advance of delivery, performance or progress payments to contractors. The DD Form 645 (FMS Billing Statement) and DD Form 1513 direct that foreign customer payments be forwarded by wire transfer or check to the SAAC. The SAAC exercises stringent controls over the FMS trust fund to insure proper visibility and accountability are maintained for all payments made by a customer for every FMS case.

There are certain principles of trust fund management to include:

- A FMS customer's trust fund balance cannot be used to finance another customer's programs;
- Cash disbursements are controlled on a country basis, although accounting for FMS transactions are maintained on an FMS case basis;
- Dollars received into the FMS trust fund are subject to U.S. Treasury accounting system controls from date of receipt to date of expenditure or refund. [Ref. 57: pp.4-4 - 4-6]

#### *d. Billing Statement*

The DD Form 645, "Foreign Military Sales Billing Statement", prepared by the SAAC, represents the official claim for payment by the U.S. government referred to in the General Conditions (Annex A) of the Financial Annex of the DD Form 1513. In addition, it furnishes an accounting to the FMS customer for all costs incurred under each agreement. Detail on the face of the billing statement segregates the cost elements in a manner parallel to the presentation of line item detail on the LOA. Physical performance of services or delivery of material is shown against the line item detail (Record Serial Number) of the LOA. Administrative surcharges, accessorial costs, and progress payments are separately listed.

The DD Form 645 is prepared on a quarterly basis in January, April, July and October. The January bill reflects physical deliveries and cash collections recorded for the FMS case through the month of June. A January bill is mailed on or about February 15, with a due date for payment of March 15. The April, July and October statements follow the same basic time frames.

The DD Form 645 has two basic variations: Billing statement and Final Statement of Account. The Billing Statement variation serves as a bill and statement of account for all open FMS cases and those cases which are closed during that quarterly period. Each FMS case reflecting a closed status on the quarterly Billing Statement is accompanied by a Final Statement, which may be conveniently detached by the FMS customer and filed in any locally maintained case files. Once a Final Statement has been submitted for an FMS case, no subsequent adjustment of such billings (upward and downward) is usually authorized. [Ref. 54: p.801-1]

#### *e. Payment*

Section 21(b) AECA requires purchasers to pay in U.S. dollars in advance of delivery of items from U.S. stocks, or to pay upon delivery of the defense articles or service if the President determines it to be in the national interest. Section 21(d) requires payment of interest on any net amount due and payable which is not paid within 60 days of such billing. Further, the President may extend such sixty-day period to one hundred and twenty days if he determines that emergency requirements of the purchaser for acquisition of such defense articles or defense services exceed the ready availability to the purchaser of funds sufficient to pay the U.S. in full for them within such sixty-day period and submits that determination to the Congress together with a special emergency request for the authorization and appropriation of additional funds to finance such purchases under this Act.



Section 22(a) AECA allows the President to enter into contracts for the procurement of defense articles or defense services for sale to a foreign country or international organization if that purchaser provides a dependable undertaking 1) to pay the full amount of the contract, and 2) to provide funds before due to meet required contract payments, damages, and cancellation costs. Section 22(b) allows the President to bill the purchaser upon delivery and require payment within 120 days billing if he makes determinations, submissions, and requests similar to those described above. [Ref. 9: pp.31-32]

Billings for debts incurred under the FMS program are initiated by using the DD Form 645 as the basis of billing procedures. Follow-up action is taken for any nonpayment by the due date. The SAAC takes initial written follow-up action 30 days after the payment due date established in block 2.A. of the DD Form 645. If no response is received, additional written follow-up action is made 45 and 75 days after the payment due date. All FMS indebtedness not collected within 70 days after the due date of the debt shall be immediately reported to the DSAA for further collection action. The DSAA shall use all available means to effect collection of the FMS arrearages within 20 days of receipt of the report from the SAAC. [Ref. 54: p.901-1]

#### 4. Problem

FMS is a cost reimbursement agreement which requires advance payment. No matter what the estimated costs, payment schedule, or terms of sale specified in the LOA, the General Conditions of DD Form 1513 require that the FMS purchaser shall pay in U.S. dollars for the full value of the transaction and that there shall be no cost to the USG. Financing is a primary concern of both the customer and USG because it effects the funds flow of the FMS transaction. There are some considerations that have a significant impact on the purchaser:

- Case closure. The reason to discuss this here is that it is a significantly sensitive area for the customer. A delay of case closure happens for the two reasons: no agreement on final contract price between the FG and the USG, or no closure of the contract between the USG and its contractor. Sometimes, these delays range up to five years and preclude settlement of the FMS case. Such delays should be unacceptable to both the USG and the FMS customer. The Armed Services Procurement Regulation Supplement (ASPS) No 2, Paragraph S2-305(a) provides the following standard times allowed for closing physically completed contracts: fixed price unilateral purchase orders, 3 months; firm fixed price, 6 months; and all other contracts 20 calendar months after the month in which it is physically completed. However, these standard times have usually not been observed;

- High ROD claims limitation. It is the policy of the USG to efficiently process reported discrepancies in shipment or billing, and where it is determined to be responsible, the USG will reimburse the recipient country. The current minimum monetary limitation for reporting discrepancies is \$25 for cases prior to 1 August 1977 and \$100 for cases on or after 1 August 1977. The reason for raising the limit was that the number of discrepancy reports processed by the SAAC in a recent year approached 30,000. With an estimated processing cost of \$115 for each report, total processing from 1980 to 1986, the ROK suffered loss of \$65,000 for RODs below \$100;
- Cost reimbursement with the advance payment. The purchaser shall include in payment the costs estimated for the next 3 months.

#### **D. SUMMARY**

To sum, each section of this chapter discussed its respective functions in detail, then addressed the general problems in terms of the purchaser's efficiency under FMS, regardless of the possibility of improvement. Most of these problems are likely to be solved only by the political talks or in the process of U.S. policy improvement. The purpose of this thesis is not to discuss such complex and fussy areas, but to find efficient paths in the critical areas to realistically improve the process of ROK procurements. Such most areas are price analysis and negotiation. Thus, the next chapter will discuss improvements in those specific areas.

## V. PROPOSALS FOR ROK'S ECONOMIC ACQUISITION OF WEAPON SYSTEMS

In Chapter III, it was concluded that the ROK is more dependent than ever on high technology components for its more complex military products, and that the ROK needs to pursue its efficiency in the acquisition of sophisticated weapon systems were discussed. Then, Chapter IV reviewed the U.S. pricing policy and its methods, the overall process of FMS contracting (agreement), and the FMS financing procedure with the respective issues of efficiency. This chapter will discuss details and possible operational improvements, in the pursuit of efficient FMS acquisition as a result of price analysis and negotiation.

There are numerous ways to achieve efficiency. As examples, it could be institutional betterment or strategic and operational improvement. Acquisition itself is never an independent area. It is closely related to national security strategy, military strength, allocation of defense resources, logistic support, etc. Therefore, the solution of more efficient acquisition should be an all-round and simultaneous approach.

As a prerequisite of acquisition, the ROK establishes the objectives of national security which may induce proper requirements. On the basis of such requirements, the ROK Ministry of National Defense (MND) makes decisions about the kind and quantity of weapon systems, date of deployment, desired duration of operation, and source of procurement, given the allocated resources.

Institutionally, MND needs to train professional officers and insure their professionalism. It is imperative that the ROK utilizes the Program Management Team which consists of project manager, contract officer, international financing officer, engineer, system analyst, weapon expert and logistician. The program manager, who is the only authorized person responsible for a procurement program establishes the acquisition strategy and monitors the whole process from acquisition to deployment so as to match its requirements or detailed configurations. The contract officer needs to understand the USG contract laws and regulations, and retain negotiation skills. The financing officer has the responsibility to control and evaluate fund flows, payment schedule and termination. He watches inflation rate, money exchange rate, pricing index, etc. A case may be well managed through financial control. However, the above mentioned strategic and institutional improvements are beyond the scope of this thesis.

Lastly, an important area, discussed in this chapter, is operational improvement. Chapter IV suggested the areas to be improved in the ROK. In reality, some conditions associated with FMS transactions between ROK and U.S. may limit this improvement. Nevertheless, improvement should be pursued to insure the normal relationship of FMS bargaining being beneficial to both countries. Each section of this chapter will discuss its rationale and methods as much as possible.

#### **A. PRICE ANALYSIS**

Price is the monetary amount a buyer pays a seller for the delivery of a product or the performance of a service. No matter how structured, price is of great importance to both the buyer and the seller. Price analysis is the process of estimating and evaluating a price without looking at the estimated cost elements and proposed profit of the offeror whose price is being evaluated. On the other hand, cost analysis may be defined as a review and an evaluation of a seller's actual or anticipated cost data.

In the United States, cost analysis is used in connection with negotiated purchasing, whereas price analysis is used in connection with competitive bid purchasing. It is not uncommon for price analysis to be used to support cost analysis. Price analysis typically starts with a comprehensive comparison of the prices submitted in a specific competitive-bid purpose. The bid prices of this specific purchase are compared with prices the purchaser previously paid for the same or similar items. Meanwhile, cost analysis starts with the buyer including requests for cost breakdowns along the requests for quotations. Price analysis is normally less complex and cheaper than cost analysis. Therefore, it is the preferred method of analysis, whenever it can be applied. However, price analysis assumes the existence of a competitive market place.

In U.S. FMS, all charges are to be included in a single price under DOD policy. Accordingly, cost analysis by the purchaser is not likely to be possible. Even if cost data are available, time is another restricting factor to cost analysis (60 days between offer and acceptance). Price analysis also is not easy in FMS. Price analysis always involves some comparison, such as historical item pricing or pricing for similar competitive items. Usually, there are not many competitive sources to supply the systems exactly required by the purchaser in the world defense market. New technology makes the supplier and receiver address the more sophisticated systems from time to time. Further, the USG does not compete with the U.S. industry for military sales. As a result, price analysis is usually restricted in FMS.



Price analysis, nevertheless, should be implemented in ROK procurement. In order to save analysis time, South Korea needs to keep all historical data as well as obtain the world-wide updated prices. If possible, the ROK should be required to find the competitive bidding prices in procuring weapon systems, and train professional analysts. Such methods help South Korea develop the techniques of price analysis and make the most efficient decision.

### **1. Reasons**

South Korea annually spends an average of 30-35 percent of the national budget as defense expenditure. Because of threats from the North, the South is improving numerous military programs. Naturally, South Korea should maintain the proper balance among all objectives. The procured weapon systems must contribute to the best desired level of total military strength within the limited budget. Recently, prices of sophisticated weapons have drastically increased. The highly increased price makes the equitable allocation of defense resources difficult.

The USG wants to recover its full cost from the FMS transaction. Compared to the price of direct sales, its differences are additional surcharges as accessorial costs, administrative costs, NRC costs, etc. Even if FMS transaction insures to some extent its follow-on support, South Korea, as a primary FMS customer, pays high expenses besides the original price proposed by a commercial business. It is thought by the purchaser that an initially accepted high price may induce high final price.

There are several different sources in procuring the required weapon systems in the world market: U.S. FMS, U.S. commercial sales, the third country's sales, self-producing, coproducing, etc. South Korea should select the most efficient way to insure its level of military strength among those alternatives.

The above are the reasons South Korea is required to address price analysis.

### **2. Considerations Prior to Price Analysis**

Before actually evaluating prices, South Korea is required to assure that quality, performance, and total cost considerations have been reconciled in determining the specifications and quantities of the items to be purchased. Time is the important factor to be considered. Prices are usually dependent on many factors, such as delivery schedules, order quantities, availability, transportation costs, logistic support requirements, manufacturing costs, labor costs, and general economic conditions, all of which can vary with time.

Next, the life-cycle cost of weapon systems procured should be considered. The operating cost usually accounts for over 50 percent of total cost. Acquisition has tremendous impacts on the life-cycle cost. As an example, warranty is directly related to the life-cycle cost. Lower price without warranty may sometimes induce future higher operating cost.

If weapon systems procured are new products or no longer in the USG inventory, South Korea needs to reconsider what is really required at that specific time in relation to the military objective. Then, South Korea can decide which source is most efficient among several ones.

### **3. Cost Elements on LOA**

Costs presented in the LOA consists of 5 Blocks: Block 21, 22, 23, 24, 25. Block 21 enters estimated material/services costs in whole dollars, which reflects contract price or standard price plus any costs except costs of Block 22, 23, 24, 25.

Block 22 represents estimated dollar amounts of PC&H cost. This block does not show the percentage rate used. This cost is applied only when DOD facilities/resources are used in packing, crating or handling of items. Block 23 shows the estimated administrative costs. This Block also does not show the percentage rates used. Block 24 enters estimated administrative charges for all FMSO I and FMSO II cases. Block 25 describes the charges in whole dollars as the storage costs for the on-hand portion of the FMSO I, transportation cost when the Defense Transportation System is used, and estimated asset use costs associated with sales from inventory.

DOD 7290.3-M explains the details of such costs: percentage rates, the description of respective costs, example of computation, etc.

### **4. Information Source**

Three ways a purchaser can determine if the right price is available are: published price lists, competition bidding, and negotiation. The purchaser needs to get price information for comparison. There are several sources of price information available.

First of all, the USG gives the foreign country the P&A or P&R as the only information of price estimate with the LOA. Because it presents a single price, the purchaser is required to distinguish the original contract price or standard price from the additional surcharges. DODI 7290.3-M describes the details of accessorial costs and surcharges accrued by the USG. There are also price indices applied to sales of USG stock items.

Published price lists in the form of daily quotations exist for standard commodities traded on the various commodities exchanges throughout the world. Price also exist for most standard items of hardware and office supplies carried by typical firms in their inventory. The prices shown on a supplier's price list may be not the actual prices but the asking prices. Published prices are classified into two categories: market prices and catalog prices. The USG annually publishes governmental pricing lists. Newspapers and business magazines may also be good published sources.

Competitive bidding prices are another available source. Competitive third countries or their companies propose their bidding prices different from the USG's ones. Even though the USG does not compete with its industry, U.S. industry also may inform the possible customer of its price information with a license.

Each military department develops its standard prices of the stock items. In case of the U.S. army, the standard price is published and associated with the Army Master Data File for secondary items and the Supply Bulletin 700-20 or 710-1-1 for major items. The National Stock Number Master Data Record provides secondary item prices for economic order quantities. When the USG negotiates with a commercial contractor for FMS procurement, all responsible sources may be permitted to submit bids or proposals for a proposed procurement. The Request for Proposal thus includes the detailed bidding price.

Historical data of South Korea's procurements may sometimes be the only source of price analysis. Therefore, South Korea is required to develop a database managing old price data. Statistical analysis may support a good estimate of future cost to South Korea. In addition, South Korea should review the U.S. inflation rates and international exchange rates which may affect prices of FMS transaction.

## 5. Methods

The determination of a price reasonable to the purchaser may be based on price analysis. Thus, some form of price analysis is required for every international procurement of weapon systems. The type of price analysis depends on the information available and the value involved. According to the available information, there are five types of comparison to be used for price analysis:

- Comparison of competitive price quotations;
- Comparison of historical quotations and contract prices with current ones for the same or similar end items;
- Use of parametric relationships to point up apparent gross differences;

- Comparison of proposed prices with independent estimates of cost developed by the purchaser;
- Comparison of proposed prices with market prices.

Table 17 shows a price analysis decision chart in terms of the involved dollar amount. Whenever possible, South Korea should obtain further competition. High value contracts over \$ 100,000 are not adaptable to price comparison or cost estimating relationships.

TABLE 17  
PRICING - A DECISION CHART.<sup>20</sup>

BASIS FOR DECISION*	NO. 1	NO. 2	NO. 3	NO. 4
Competition	If prices considered reasonable	Solicit from a reasonable number	Maximize	Maximize
Catalog or market price	Good source	Acceptable	Acceptable	Acceptable
Past prices	Acceptable	Acceptable	Acceptable	No
Government estimate	Acceptable	Acceptable	Acceptable	No
Value analysis	Acceptable	Acceptable	Acceptable	No
Cost or pricing data	No	No	Permissible (certification not required)	Certification (if required)
Negotiate	Last resort	Permissible	Permissible	Yes

\*KEY: No. 1 (Purchase not over \$1,000); No. 2 (Purchase over \$1,000, but not over small purchase limit); No. 3 (Purchase over small purchase limit, but not over \$100,000); No. 4 (Purchase over \$100,000).

Under FMS, South Korea usually has limited information on price, short times to review, and limited competition. However, the dollars involved in the transactions tend to be high. Competition is the best way to get the desired price. Comparison with historical data or published prices and development of a South Korean independent method of price analysis are other possible methods. Improvement of price analysis may be obtained by developing the basic framework of life-cycle costs.

<sup>20</sup>Department of Defense, *Armed Services Pricing Manual*, p.2-17, 1986.



Additional improvements can be achieved by considering efficient factors in relation to the extent of competition or the procurement source. If the USG is the only source, South Korea should consider whether its requirement is available from USG stocks or new production. The historical approach may be most effective for weapon systems which have been procured. In new procurement, several factors should be reviewed: the extent of requirement and the budget available, the level of uncertainty, and its estimated cost overrun. The weapon systems eligible under FMS are also available in commercial sales. The trade-off between surcharges in FMS and costs of the follow-on support in commercial sales may be analyzed in rough dollar amounts.

Even though the procurement under some competition may insure the current or lower prices, standardization, terms and conditions of the contract and logistic support are important factors to be considered in South Korea's procurement. Under competition, however, bidding prices or updated published prices would help make efficient purchases.

## **6. Summary**

In order to assure efficient procurement, competition is the most desired alternative. However, because it does not always exist, the design of a database keeping historical data and current prices in the market is required so as to insure time-saving and accurate price analysis. In most of the procurement of weapon systems, its performance and quality may be more important than the amount of total price. Hence, the impact on the future cost of such factors should be gauged sufficiently. Lastly, even though conditions of price analysis are not met in reality, price analysis should always be addressed. Simultaneously, development of analytical techniques and education of price analysts should be emphasized.

## **B. NEGOTIATION**

As discussed earlier, negotiation is the process of planning, reviewing, and analyzing used by a purchaser and a supplier to reach acceptable agreements or compromises. These agreements and compromises include not only price, but also all aspects of the transaction. Negotiation is the appropriate method of purchasing when competitive bidding is impractical. Negotiation should be communicated clearly and then documented.

Negotiation starts with South Korea's request of offer for specific weapon systems or services and ends with the resolution of all concerned issues. During the

initial planning, the South Korean government reviews and validates its defense requirement, funding, and internal management capability. The detailed and accurate definition of its defense requirement has tremendous impact on acquisition and the ultimate level of military strength. Only after its requirements are reconciled, price negotiation should be addressed. At that time, the purchaser must always think in terms of total cost and total value, not price alone.

Negotiation is one of the most critical areas which should be improved in South Korea's procurement. Training professional contracting officers is a prerequisite of negotiation. Through their knowledge and experience, techniques of negotiation are developed and accumulated. Explicitly, negotiation is not a proprietary of commercial business. For FMS contracts for high value, complex and technically oriented weapon systems, team approach is necessary. Therefore, it is required that South Korea compose contracting teams which consist of program manager, contract officer, international financing officer, engineer, system analyst, weapon expert and logistician.

### **1. Conditions of Strong Position**

A negotiator's most important responsibility in preparing for negotiations is to appraise his own strengths and weakness accurately in relation to the seller's. The ability with which the negotiator executes this responsibility, in large measure, influences the actual course and outcome of the negotiation. In general, the purchaser's bargaining strength depends on four factors: the extent of competition, the adequacy of price or cost analysis, the thorough preparation of negotiation, and time available.

Intensive supplier competition always strengthens a purchaser's negotiating position. When several competent sellers want a contract urgently, competition is most effective. When necessary, South Korea can increase competition by developing new suppliers, making items in-country and having skilled negotiators.

A comprehensive knowledge of price or cost analysis is one of the basic responsibilities of a negotiator. The greater the amount of available cost, price, and financial data, the greater are the purchaser's chances for successful negotiation. For major contracts, cost analysis is a substitute for direct competition. For follow-on contracts or contracts for common commercial items, price analysis is usually sufficient to assure the purchaser that prices are reasonable. However, under FMS, cost analysis is not available because the purchaser can not obtain the detailed breakdowns of total price. Price analysis is also restricted if the competitive source is a U.S. industry.

Some benefits of price analysis, nevertheless, should be pursued. Even the least level of price analysis may support the purchaser's position in negotiation.

Whenever feasible, the purchaser should develop an estimate of the price and value levels for the weapon systems being purchased before requesting LOA. The purchaser must also evaluate all relevant data and carefully assess its own and the supplier's strengths and weakness. From this evaluation, the purchaser develops not only a basic strategy of operation, but specific negotiating tactics.

Short lead times drastically reduce the purchaser's negotiating strength. When a supplier knows that a purchaser has a tight deadline, the negotiation brings advantage to the supplier. Thus, the supplier negotiates terms and conditions favorable to him at the last minute when the buyer is under severe pressure to consummate the contract. The maximum time for FMS negotiation is 60 days. Accordingly, the purchaser can retain his strengthened position only when keeping competitive or preparing his negotiation thoroughly.

## **2. Planning of Negotiation**

The outcome of FMS negotiation depends on relative purchaser-supplier power, negotiation skills, and how both perceive the logic of the impending negotiation. Such affecting factors can be improved by skilled advanced planning.

The first step in planning for negotiations is to establish objectives. Negotiation objectives must be specific. For each term and condition to be negotiated, the purchaser should develop three specific positions: an objective position, a maximum position, a minimum position. Price objectives should be planned in terms of a definite dollar amount reflecting the purchaser's evaluation of the terms and conditions of the intended contract. Such objectives must also be communicated clearly to the supplier. Figure 5.1 shows typical bargaining positions of the purchaser and the supplier.

The next step is to establish dates for delivery schedules, ranges for quality assurance, and estimated dollar amounts composed of market price plus governmental surcharges. The supplier's maximum position is his offer.

The third step is to develop the negotiation strategy and tactics to be used to attain objectives. Strategic planning is the planning for overall or long range goals, whereas tactical planning refers to the detailed intervening activities to reach the strategic objectives of negotiation.

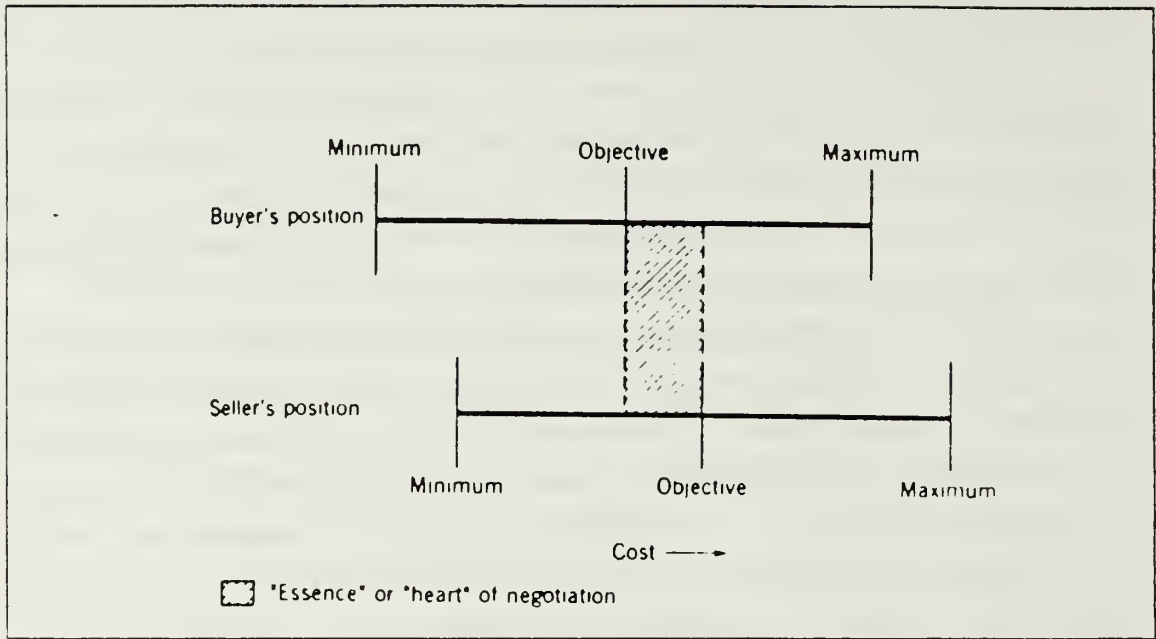


Figure 5.1 Bargaining Positions of the buyer and the seller.<sup>21</sup>

### 3. What to Negotiate

As discussed earlier, negotiation is based on the definition of requirement, and price or cost analysis. Specifications should be negotiated always in advance to prices. If items required are neither new products nor the first requisitioned ones, negotiation of specifications may be set aside. Negotiation should have its positions presented as the dollar amounts or the typical parameters. Under FMS, price is frequently not considered for negotiation because the purchaser shall pay all costs incurred by USG.

Specification negotiation should address several factors: quality, quantity, delivery schedule, transportation, payment method, logistic support and others. It is scarcely possible that all factors are perfectly satisfied. Thus, specifications critical to the whole system and required typically in South Korea, must be emphasized in negotiation. Minimum objectives of each negotiation areas should be kept. Minimum levels of standardization should always be insured. The results of specification negotiation may influence not only the quality of systems, but the future total cost.

There are two ways to negotiate a contract price: element cost and total price. Under FMS, contract price is usually negotiated not by element cost but by total price. Further, even after total price is negotiated, the full cost to USG should be

<sup>21</sup>Donald W. Dobler, Lamar Lee, Jr., and David N. Burt, *Purchasing and Materials Management*, 4th, ed., McGraw-Hill Book Company, 1984.



paid by the purchaser whatever the amount.

If there are competitive suppliers, their bidding prices need to be examined, in detail, the absolute and relative difference existing among the various prices quoted. The difference needs to be justified by examining its reason. The reasons of all significant variations could be pinpointed and analyzed by past prices of similar purchases or current prices of selling other customers. From this process, the purchaser decides on the target price for the negotiating position.

In cases of procuring new sophisticated systems available only from USG, negotiation requires the team approach. The professional team may look for not only a firm definition of requirements, but reasonable price ranges to be negotiated. Thorough preparation of negotiation gives a negotiator relatively strong position. Each price negotiation has its target price, maximum and minimum price. Such objectives should be presented in dollar amounts.

#### **4. Summary**

Negotiation is one of the most important areas to be improved in South Korea's procurement. Mostly, definition of requirements and range of reasonable price in the acquisition of sophisticated or even conventional weapon systems are not clearly stated. However, if the purchaser relies only on the supplier's ability and confidence, its result may be perilous. Given the limited budget, South Korea should procure the most desired weapon systems at the most reasonable price. In order to improve its efficiency in procurement, South Korea must first approach improvement at the internal operational level. Better skilled negotiation by a professional team would insure better results.

## VI. SUMMARY AND RECOMMENDATIONS

### A. SUMMARY

Since the 1950's, there have been two turning points in the ROK's FMS acquisition. One appeared when President Nixon advocated the "Nixon Doctrine". Since then, the ROK has shared the U.S. defense burden and borrowed funds for FMS acquisitions. Another happened recently. In FY 86, the U.S. Congress did not appropriate FMS funds for the ROK. Now, South Korea must use its own budget for defense expenditures. The efficient acquisition of weapon systems is, therefore, more critical. It should not only insure a certain level of military balance, but also enhance the overall efficiency during the life cycle of specific weapon system.

The efficiency in acquisition can be obtained in several ways: institutional betterment, and strategic and operational improvements. Of course, if an all-round and simultaneous approach to efficiency is tried, the result should be optimized. However, this thesis discussed the efficient issues at the operational level. FMS pricing, contract and financing are most critical areas to the ROK's efficient procurement. The functions of each area were discussed in detail and two factors necessary for efficient ROK procurement were discovered: price analysis and negotiation. Effective price analysis and skilled negotiation will improve ROK's efficiency in acquisition as well as the military balance on the peninsula.

### B. RECOMMENDATIONS

The following areas are recommended for further research:

- Logistics Improvement. This thesis discussed FMS pricing, contract and financing. Logistics areas, including transportation, delivery, operations and maintenance, training, storage, disposal, etc., are also other significant areas in improving the efficiency of ROK's FMS procurement;
- Source Selection. Currently, the ROK tends to prefer U.S. commercial sales as a supply source, because of its low price and expedited delivery. However, direct sales may not insure the follow-on support and transportation. Moreover, it is imperative that the ROK retains professional contract teams. Direct sales vs foreign military sales should be carefully compared;
- Project Management. Project management is a prerequisite of effective and efficient procurement. Sophisticated weapon systems require the deliberate definition of the requirement and a high level of management skills. Effective project management is a really necessary process in the ROK's acquisition.

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