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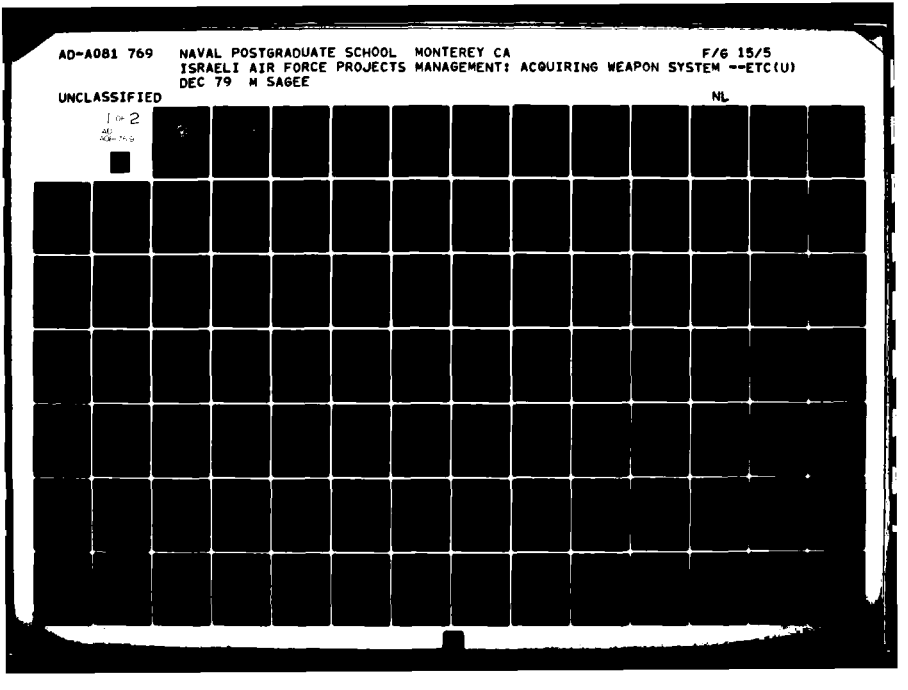

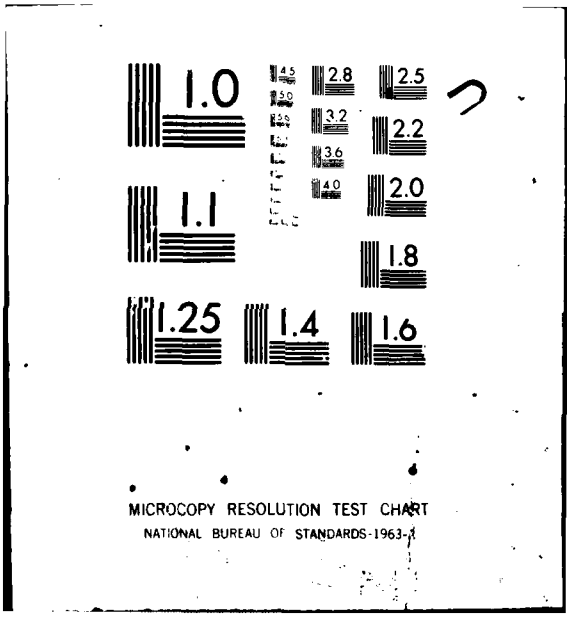
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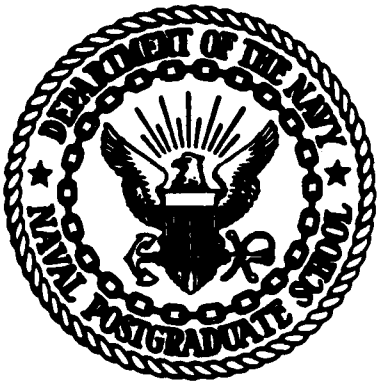

THESIS

ISRAELI AIR FORCE PROJECT MANAGEMENT:
ACQUIRING WEAPON SYSTEMS
FROM THE UNITED STATES

by

Moshe Sagee

December 1979

Thesis Advisor: M. B. Kline

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The Israeli Air Force (IAF) major system acquisition process has only recently been developed due to the acquisition of F-15 and F-16 aircraft. The U.S. system acquisition process method and the Foreign Military Sales constraints for the Israeli acquisition process method are described. Based upon a comparative evaluation of the U.S. and of the IAF acquisition methods, a recommendation is made for modifying the existing method of IAF system acquisition.

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Israeli Air Force Project Management: Acquiring Weapon Systems From the United States

by

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Submitted in partial fulfillment of the requirements for the degree of

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from the

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December 1979

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ABSTRACT

The Israeli Air Force (IAF) major system acquisition process has only recently been developed due to the acquisition of F-15 and F-16 aircraft. The U.S. system acquisition process method and the Foreign Military Sales constraints for the Israeli acquisition process method are described. Based upon a comparative evaluation of the U.S. and of the IAF acquisition methods, a recommendation is made for modifying the existing method of IAF system acquisition.

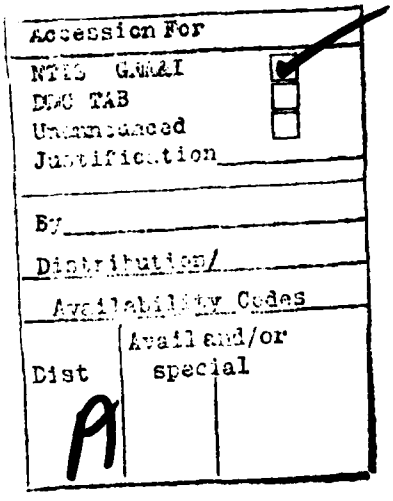

TABLE OF CONTENTS

LIST OF FIGURES

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Finally, my wife, daughter and son deserve recognition for their patience and unwavering support.

I. INTRODUCTION

A. PURPOSE OF THE THESIS

The Israeli Air Force acquires its major defense systems from the U.S. Based on this fact, it is worthwhile to set forth and examine the issues which affect such system acquisition. It is the purpose of this thesis to describe and analyze the existing methods and policies of the U.S. and of the IAF system acquisition processes, and to synthesize a proposed method to improve system acquisition by IAF.

B. STATEMENT OF THE PROBLEM

The Israeli Air Force acquisition process for a major system was established due to the acquisition of F-15 and F-16 aircrafts. There is not existing yet a comprehensive document for carrying out such an acquisition process. The existing "way of doing" should be examined and revised accordingly.

C. SCOPE AND LIMITATIONS

This study will refer to the acquisition of aircraft by the Israeli Air Force from the U.S. The research is limited to the part of system acquisition that concerns both parties, the seller (U.S. Government) and the buyer (IAF through the government of Israel), and which is being implemented through Foreign Military Sales (FMS) and not by direct contract with the contractor. Specifically this thesis is not concerned with acquisitions that take place in country.

D. METHODOLOGY OF RESEARCH

The information on the U.S. policy and methods for carrying out the acquisition process are accessible through the various U.S. Government documents. The part of the thesis that concerns the U.S. acquisition process is based on research of such references. On the other hand, the process of Israeli acquisition is lacking in official documents, and this part of the thesis is based primarily on interviews and on the personal knowledge of the author. The interviews were conducted with personnel from the Mission of Israel in New York and personnel from the F-16 System Project Office at Wright-Patterson Air Force Base, Ohio.

E. ASSUMPTIONS

The Israeli Air Force will continue to acquire its future major systems, especially its defense aircraft, from the U.S. The U.S. Government has precise directives and procedures for selling such systems to foreign countries (establishment of Foreign Military Sales) and a policy and method for acquiring such systems for its own needs.

This policy must be taken into consideration in the establishment of the Israeli Air Force policy for such an acquisition. It is in the interest of IAF H.Q. to organize in one paper the information on how the U.S. acquires a major system for itself and how FMS interacts with the Israeli "way of doing."

F. PLAN OF PRESENTATION

The thesis leads the reader through the various chapters as described in FIG. 1. Chapter two describes the acquisition process of a major system as carried out by the U.S. Chapter three gives a description of Foreign Military Sales (FMS) which is a major link between the seller (U.S. Government) and the buyer (Foreign Country). Chapter four describes the existing method of acquisition of a major system as carried out by the Israeli Air Force. Chapter five evaluates the major deficiencies of the existing IAF acquisition process. A synthesis of a proposed improvement in the IAF acquisition is presented in Chapter six leading to conclusions and recommendations in Chapter seven.

PLAN OF PRESENTATION

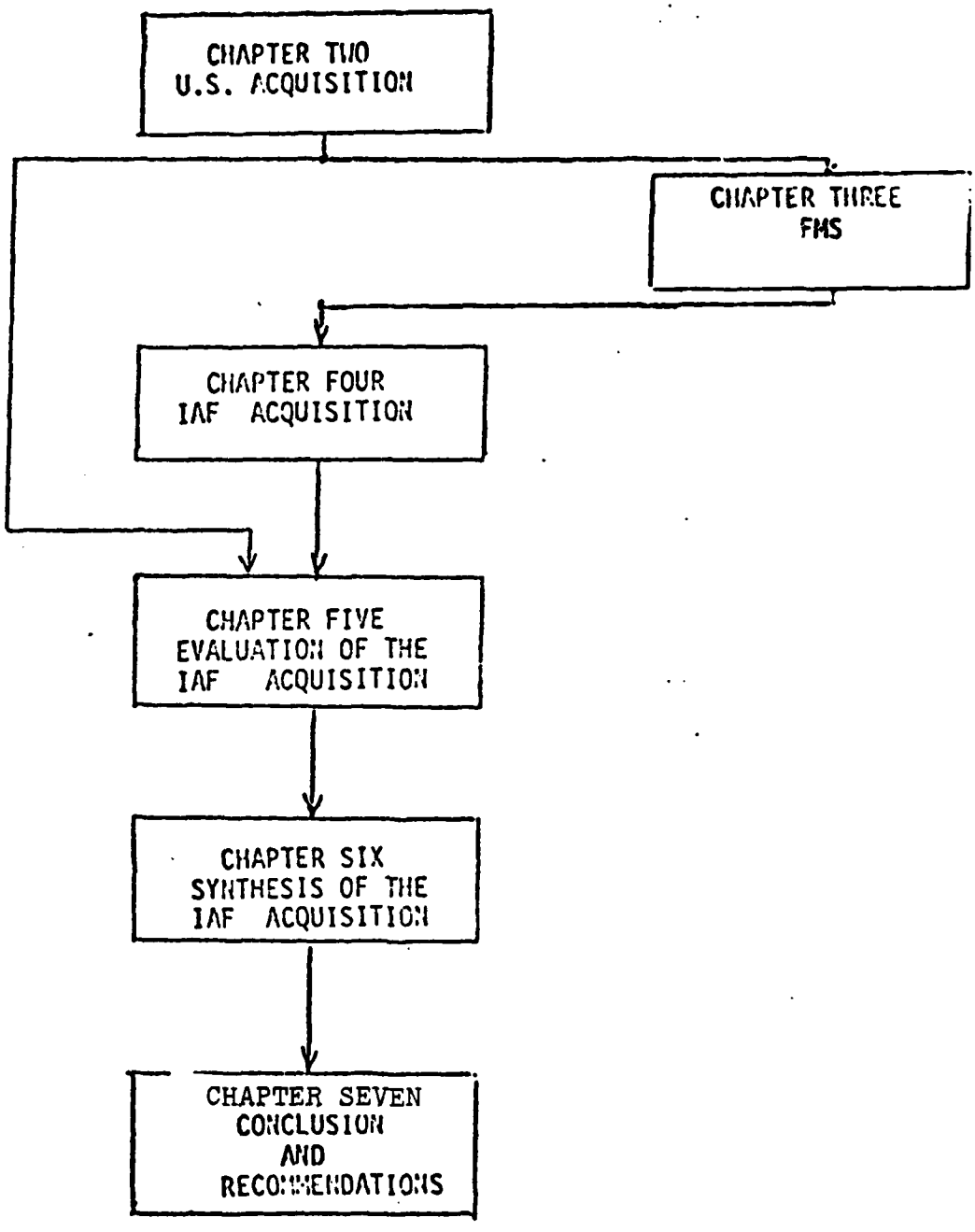


FIGURE 1

II. THE U.S. DEPARTMENT OF DEFENSE SYSTEMS ACQUISITION PROCESS

A. HISTORY

The management techniques used in acquiring a major weapon system have evolved over the years. Centralized program management was introduced into the U.S. Department of Defense (DOD) in the 1950's as a distinct departure from the traditional functionally oriented management organization that worked on several weapon systems simultaneously. However, in the late 1950's, DOD recognized the need to streamline the acquisition process and introduced the concept of a program management. The key person in each office is the program manager (senior military officer), who is responsible for research, development, evaluation, production, and the effective overall management for his weapon system program (Ref. 1.)

In 1961, Robert S. McNamara became Secretary of Defense. He recognized the problem of the 1950's in acquiring defense systems, and acted to improve the defense planning process, by establishing the following:

1) Planning-Programming-Budgeting System (PPBS)

2) Five Year Defense Plan (FYDP)

3) Use of system cost effectiveness analysis in the defense decision making process.

Up to this time, emphasis was on achieving technical performance rather than a balance among performance, cost

and schedule (Fig. 2). McNamara's approach led to the issuance of DOD Directive 3200.9 entitled, "Project Definition Phase", in Feb. 1964 (Ref. 2). The intent of the Project Definition Phase was to reduce risk and uncertainty on new programs. At that time, the services failed to express their needs in terms of the threat and mission. To correct this deficiency, DOD Directive 3200.9 was revised, and a new phase added ahead of the Definition Phase, called Concept Formulation Phase, defined as including:

> the activities preceding a decision to carry out engineering development. These activities include accomplishment of comprehensive system studies and experimental hardware efforts under exploratory and advanced development, and are prerequisite to a decision to carry out engineering development. (Ref. 2).

The McNamara innovations concerning the systems acquisition process during the 1960's and the establishment of DOD 3200.9 led to the establishment of decision milestones at the output of the various phases, for approval by the Secretary of Defense to proceed with the next phase, and this is still the current approval process.

On July 13, 1971, the office of the Secretary of Defense issued DOD Directive 5000.1 (Ref. 3), designed to improve acquisition management. This directive deals principally with the issue of "Major System Acquisition." It also establishes the major decision milestones and phases of the Defense System Acquisition Process which is described in detail in the next section of this chapter.

PLANNING BASELINE FOR BALANCED PROGRAM PERFORMANCE

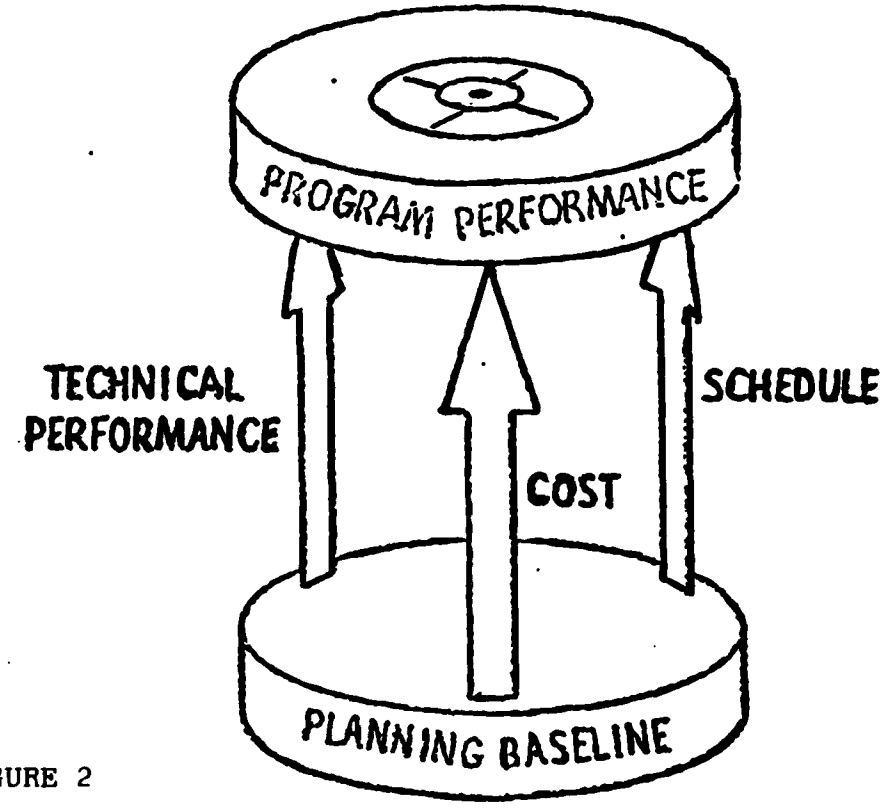


FIGURE 2

On April 5, 1976, the Director, Office of Management and Budget (OMB) and the Administrator, Office of Federal Procurement Policy (OFPP), issued a new government-wide policy for the acquisition of major systems. This new policy, OMB Circular A-109 (Ref. 4), applies to system acquisitions of all the various U.S. executive agencies as well as defense and space systems. The agencies may prescribe additional criteria and/or relative dollar thresholds for determining which agency programs are to be classified major systems. They also may establish different criteria/thresholds for different types of major system acquisition. (Appendix A).

B. SYSTEMS ACQUISITION PROCESS

1. Overview

Based upon the requirements of OMB circular A-109, DOD has recently reissued the basic directives 5000.1 and 5000.2. The principal change in DOD directive 5000.1 is the addition of milestone zero as a Secretary of Defense decision to initiate a program in conformance with OMB Circular A-109. The key milestone (Fig. 3) are:

Milestone 0 - Program initiation (need approval)

Milestone 1 - Demonstration and Validation

Milestone 2 - Full-Scale Engineering Development.

Milestone 3 - Production and Deployment

DOD Directive 5000.2 supplements DOD Directive 5000.1, establishing the policies and procedures to be used for supporting the Secretary of Defense decision making process

LIFE CYCLE OF MAIOR SYSTEM ACQUISITIONS

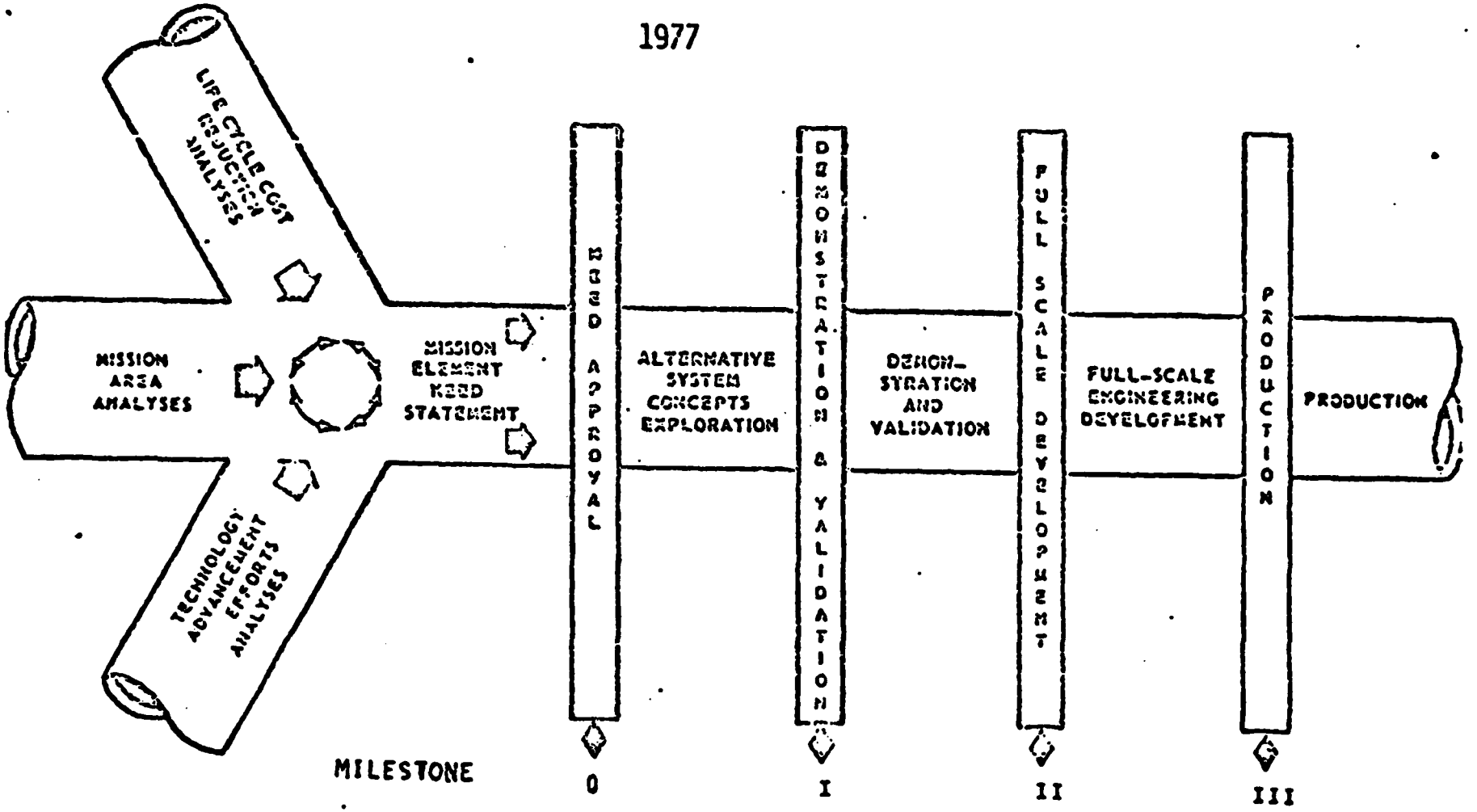


FIGURE 3

for major system acquisition.

2. Mission Area Analysis Phase

The purpose of this period in the system acquisition process is to identify those areas in which existing or projected capability is deficient in meeting the essential mission needs. Efforts are directed toward identifying and evaluating the operational deficiency.

In the process of developing the need statement, the service should consider the feasibility of the mission which is required to fulfill the needs in terms of military worth and available technology, and within economic, financial, legal and political constraints. The service proposes the "Mission Element Need Statement" (MENS) document to recommend the initiation of a new system acquisition program. This document (Appendix B) is submitted by the service for review by the Defense Acquisition Executive (DAE), and the offices of the Joint Chiefs of Staff and Secretary of Defense (OJCS and OSD). After the review, recommendations are presented to the Secretary of Defense (SECDEF) for approval of the "MENS". The Secretary of Defense approval is the milestone zero decision point, and allows the service to proceed into the next phase (Alternative Concept Exploration Phase).

At this point in the process immediately upon the acceptance in milestone zero, a Program Manager (PM) is assigned to the program. The type of organization of the project management office can differ from service to service and/or from project to project. Appendix C contains

a description of the basic types of organizations used for project management.

From this point on in the acquisition process the PM is the key figure of the project in managing and controlling all the activities concerning the specific major system within its approved performance, schedule and budget. In order to fulfill his responsibilities, the PM:

1) Organizes his office - usually matrix method in the Navy and project method in the A.F.

2) Prepares an acquisition strategy and participates as a principal in preparing the Decision Coordinating Paper (DCP) - see details in Appendix D.

3) Establishes the scope, needs, cost and schedule of his project.

4) Establishes policy for making business and technical management decisions, specifically trade-offs between cost, schedule and performance.

5) Selects the best technical approaches and assesses the impact of proposed changes.

3. Alternative Concept Exploration Phase

Following the approval of the MENS the Alternative Concept Exploration Phase is started (FIG. 4). The first stage in this phase is an in-depth expansion of the mission feasibility studies that were initiated prior to milestone zero, to establish and define criteria for synthesizing alternative system concepts. The second stage of this phase, the preliminary studies starts the exploration of alternative

PRIMARY ACTIVITIES OF MISSION AREA ANALYSIS.

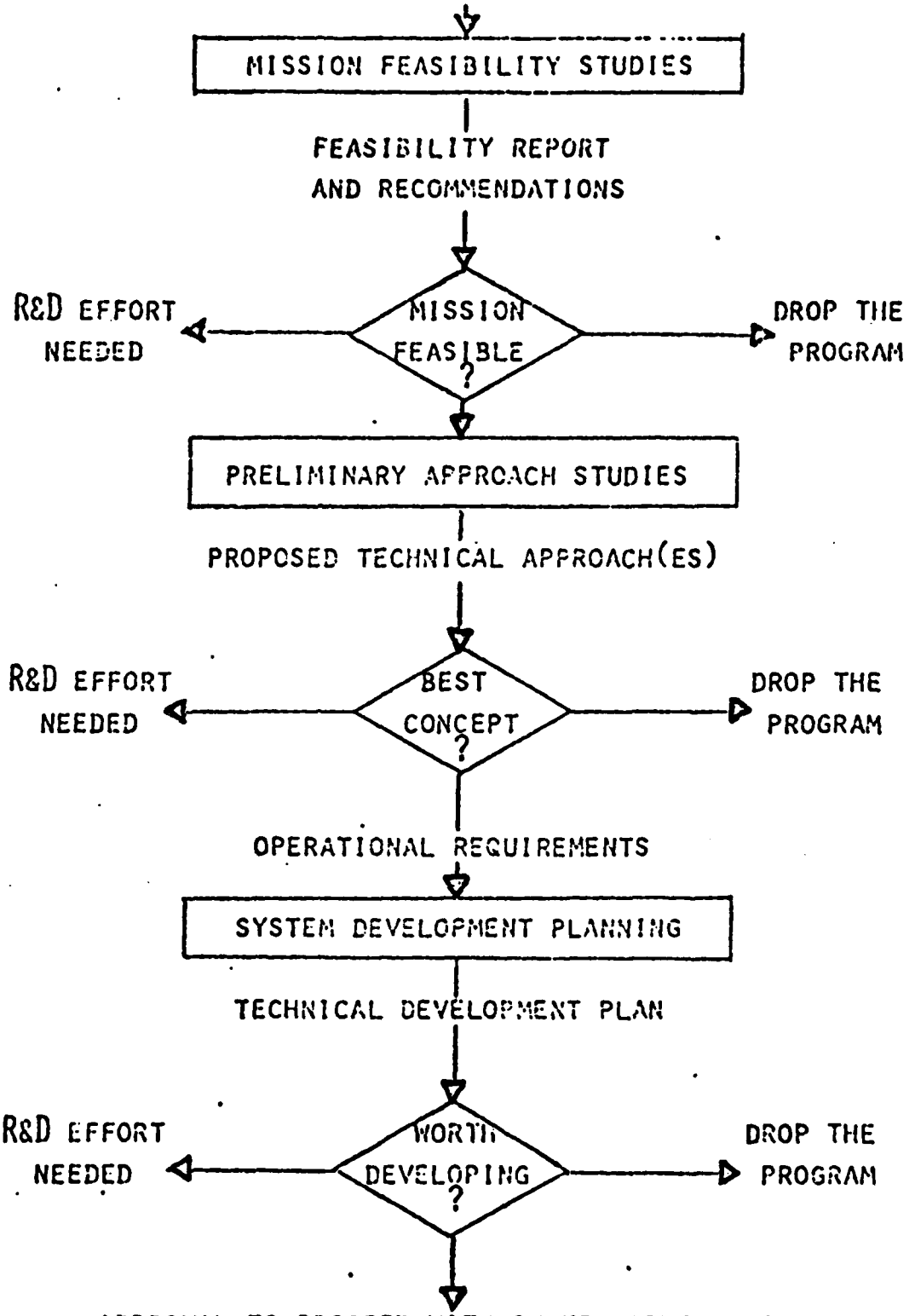


FIGURE 4 SOURCE - REF. 5

system concepts which is the main activity in this phase. Investigation in depth of the system cost and effectiveness of alternative candidate approaches is done by the service through the project management office. Each approach is analyzed, evaluated and optimized in order to present the recommended alternative or alternatives for the milestone 1 decision point at the end of this phase. DOD directive 5000.1 (Ref. 3) directs that the service should strive to develop an adequate atmosphere of competition. Competitive exploration of alternatives avoid premature commitments to solutions that may prove costly and marginally effective. The solicitation for proposed solutions are in terms of mission needs and not explicit system characteristics and provides complete information including mission task and the operating environment and threat.

The third and last stage in this phase services as management planning for refining the best approach/approaches with respect to available financial, time, schedule and technical risk. The output of this phase is the preparation of Decision Coordinating Paper (DCP) to support the reviews and recommendations of the Service Systems Acquisition Review Council (S) (SARC) and the Defense Systems Acquisition Review Council (DSARC). These reviews and recommendations are submitted to the Secretary of Defense (SECDEF) for approval, not only at milestone 1, but also at the following milestones 2 and 3. The DCP is the principal working document which covers the necessary activities during this phase and

in the following phases, as summarized in Appendix D. Approval of the DCP by SECDEF at milestone 1 allows the service to carry on the acquisition process into the Demonstration and Validation Phase.

4. Demonstration and Validation Phase

During the Demonstration and Validation Phase, the selected alternatives are refined through extensive study and analysis. Advanced development models (prototypes) hardware are developed to meet the operational requirements. The prototypes are tested and evaluated either by the contractor or by the service or by mutual effort for initial assessment of the performance and availability of the high risk parts of the system, and to evaluate and reduce development risk.

The service, through the project office keeps open the competitive atmosphere. This means that for certain project, prototypes may be developed simultaneously by two or more competitive contractors. The basic objective in this phase is the use of experimental models and prototypes as much as possible, under existing constraints, to demonstrate that performance capability can be achieved and to reduce technical uncertainty. At milestone 2, the end of this phase, DSARC II reviews the program and recommends for SECDEF approval considerations for moving into the Full Scale Engineering Development Phase.

5. Full Scale Engineering Development Phase

Upon completion of the Demonstration and Validation Phase, the service updates the DCP to recommend the selection of a system for full scale engineering development. The main activities that are performed during this phase are as follows:

a. The service through the project management office must re-evaluate and update the threat and need assessments, valid to this point of time.

b. The system/equipments and other principal items for production and future support are designed, fabricated tested, and evaluated.

c. Preproduction prototypes are fabricated with the documentative necessary to enter the following phase of full production.

d. Development and operational test and evaluation of the pre-production prototypes must be performed to determine whether the product meets its specifications and submit the changes necessary for the production phase.

e. Long lead items must be finalized for meeting the production schedule.

f. The detailed concepts and methods of operations, maintenance, training, facilities, logistic, publications, manpower and support equipment must be refined and documented. At the end of this phase (milestone 3), the DCP must be updated once again and approved. The DSARC III reviews and

recommends approval of the system, determining whether or not to proceed into the last phase in the acquisition process of a major system, the Production and Deployment.

6. Summary

The process of a major system acquisition is based on the government policy published by OMB circular A-109. The existing DOD Directives concerning the acquisition of a major system, especially DODD 5000.1 and DODD 5000.2 have been updated according to this policy. The directives emphasize the establishment of a program office and the concept of decision milestone points along the process of the acquisition. The Israeli Air Force (IAF), enters into the acquisition process for an end-item major system during the Full Scale Engineering Development Phase or even later on into the production phase. This is usually carried out through Foreign Military Sales (FMS). The next chapter is devoted to a discussion of FMS, before proceeding to the concept of the IAF acquisition process.

III. FOREIGN MILITARY SALES-POLICY AND PROCEDURE

A. PURPOSE AND U.S. POLICY FOR FOREIGN MILITARY SALES (FMS)

Security assistance is a key instrument of United States foreign policy. The U.S. has been assisting friendly foreign countries in establishing and maintaining adequate defensive postures for their internal security and for resisting external aggression. This policy is essential to the security of the United States, as has been declared by almost every President since World War II.

President Richard M. Nixon stated what is known today as the Nixon Doctrine, as follows: (Ref. 12)

> The United States will keep all its treaty commitments. We shall provide a shield of a nuclear power threatening the freedom of a nation allied with us, or of a nation whose survival we consider vital to our security and the security of the region as a whole. In cases involving other types of aggression we shall furnish military and economic assistance when requested and as appropriate. But we shall look to the nation directly threatened to assume the primary responsibility of providing the manpower for its defense.

At that time James E. Schlesinger, the former Secretary of Defense, expressed the policy in a clear statement as follows: (Ref. 13)

> It is the principal purpose of Security Assistance.... both grant aid and military sales programs....to strengthen deterrence and promote peaceful negotiations by helping our friends and allies to maintain adequate defense forces of their own. We believe that hostilities can be avoided altogether, and when they cannot, we seek to ensure our friends and allies have the capacity to defend themselves and to restore stability as soon as practicable. In this way, we seek to achieve regional stability in crucial areas of the world without the need for direct intervention by American forces.

As regards the specific policy concerning Israel and FMS, President Gerald R. Ford made a commitment in the following message sent to the 94th Congress: (Ref. 14)

> The Security Assistance Program I am transmitting to Congress is heavily weighted with requirements to sustain the peace in the Middle East. Fully 70 percent of the programs for fiscal year 1976 is to be concentrated in this region...For Israel $740 million in security supporting assistance and $1500 million in military credits. Israel's ability to defend herself and to relieve some of the burdens of her defense reduces the prospect of new conflict in the Middle East.

President James E. Carter shortly after taking office said (Ref. 15)

> ...Make sure that Israel has adequate means to protect themselves without military involvement of the United States. I have no objection about this arrangement. I'm proud of it, and it will be permanent as long as I'm in office.

It is evident that the current policy regarding FMS in general, and specifically FMS for Israel has not changed from administration to administration, and is relatively stable.

B. HISTORY AND LEGISLATIVE BASIS

1. Prior to World War II

Prior to World War II, the U.S. generally maintained a policy of isolation. However, some military services were provided to foreign countries in the form of advice and training. The Neutrality Act of 1939 amended the previous Neutrality Acts and allowed the sale of war materials to the allies but without committing any direct U.S. support (Ref. 16).

2. World War II Until 1976

The time frame between World War II and 1976 should be considered as a second stage in the development of Foreign Military Sales policy and activities. In 1976, the Humphrey/Morgan Act on FMS established the current policy, and serviced as a basis for recent amendments of FMS acts. The major steps during this period were:

a. Lend Lease Act of 1941

World War II pushed the U.S. to assist her allies by supplying military defense goods and services. President Roosevelt proposed the "Lend Lease Act of 1941" that allowed the U.S. to supply, first to Great Britain, then to Russia and more than 40 other countries, defense materials in the total amount of $48.5 billion! At the end of the war, Congress declared that the U.S. would not continue the Lend Lease program and it was gradually phased out in a bilateral agreement with the recipient countries (Ref. 16).

b. Truman Doctrine - Act of 1947

The National Security Act of 1947 based on "Truman Doctrine" emphasized the responsibility of the U.S. in contributing to the comprehensive security of her allies. The Truman Doctrine was a major step in the evolution of foreign assistance legislation and acknowledged the U.S.'s role in the leadership of the free Western world.

c. Mutual Defense Assistance Act of 1949

The Mutual Defense Assistance Act of 1949 was established as a consequence of the North Atlantic Treaty Organization (NATO) and authorized great military aid and sales of defense equipments to allied and friendly states. It was the first time that Foreign Military Sales became a reality even though the volume was negligible, since most of the countries could not financially afford the purchase of expensive military arms (Ref. 16).

d. Mutual Security Act of 1956

This act 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.

e. Foreign Assistance Act of 1961

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 equipments to foreign countries. The main objectives that he outlined were (Ref. 17):

1) Promote the defense strength of the allies consistent with the U.S.'s foreign policy objectives.

2) Promote the concept of cooperative logistics and standardization with the allies.

3) Offset the unfavorable balance of payments resulting from essential U.S. military development abroad.

f. Foreign Military Sales Act of 1968

The primary congressional legislation concerning the sale of U.S. arms to foreign countries is the act of 1968 known as the Arms Export Control Act. It clarified the reimbursable basis for arms sales and the policy of FMS as follows (Ref. 18):

1) Declared the ultimate goal of the U.S. to be a world free of the dangers and burdens of armaments.

2) Affirmed the increasing cost and complexity of defense equipment and recognized that there continues a need for international defense cooperation, to maintain peace and security.

3) Established 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.

4) Authorized sales to friendly countries to equip their forces with due regard to the impact on social and economic development and on arms races.

5) Declared that all such sales be approved only when they are consistent with the foreign policy interests of the U.S.

g. Foreign Military Sales Act of 1971

At that time, Senator Fulbright, chairman of the Senate Foreign Relations Committee, expressed his viewpoint on FMS as follows:

> The United States should not encourage the nations of Latin America and Africa to spend their scarce resources on arms which they neither need or can afford...the argument that they will buy elsewhere if we do not sell to them makes little sense if they should not have the planes and tanks in the first place.

As a result of this viewpoint and the majority agreement of the House and Senate, the bill that passed included some significant paragraphs concerning FMS activity (Ref. 19). It appears from this act 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.

h. Foreign Assistance Act of 1974

The Foreign Assistance Act of 1974, is a further amended version of the basic act of 1968. The major features reflected the Congressional influence over FMS policy. Within other decisions we find the requirement that the President must inform Congress before issuing a letter of offer when the amount is $25 million or more (Ref. 20).

3. International Security Assistance and Arms Export Control Act of 1976

This act is known as the Humphrey Morgan Act and 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. It was felt that open

activities under criticism of the public would result in a better and national FMS policy (Ref. 21). This law started the third stage in the evolution of FMS policy that principally continues up to the present.

Some of the major issues that are involved in the Act state that (Ref. 21):

a) No commercial export license may be issued for the sale of major defense equipment valued at $25 million or more, but only through an FMS case.

b) The president, 30 days prior to giving his consent for sale, must submit to the Speaker of the House of Representatives and the committee on Foreign Relations of the Senate, a written certification of the proposed arms sale. The Congress may veto this proposed *transfer*. Furthermore, the certification submitted to the Congress shall be unclassified (classified information submitted separately) to permit public disclosure.

c) 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 R & D.

d) The appropriation ceilings authorized for FMS credits will not be a certain amount of dollars. Israel gets a special consideration from the point of view of the credit amount and repayment period consideration.

e) Commercial sales, through export licenses, of major defense system are limited to the value of $25 million or less.

f) The act includes a general limitation section, that emphasizes the following issues:

1) human rights

2) prohibition of assistance to countries that provide sanctuary to international terrorists

3) prohibition against discrimination

4) prohibition of assistance to ineligible countries

5) prohibition of nuclear transfer

C. INVOLVEMENT OF THE VARIOUS DEPARTMENTS

1. Background

The Nixon Doctrine published in late 1969, provided the basis for transition from Grant Aid to Foreign Military Sales.

The Doctrine reconfirmed the responsibility of the U.S. in providing assistance to allies and friendly countries, for their economic and security stabilization. Nixon's statements, and the inclination to increase the volume of military sales throughout the years, resulted in certain delegated authorities and responsibilities, that impact various Departments in the U.S. Government.

2. Authority of the Congress

The Congress established a series of laws for the purpose of guiding and controlling the process of FMS. These laws, in the form of various acts, were described briefly in the previous section. One of the key decisions is that the President must submit to Congress, 30 days

prior to his consent, every proposed sale that exceeds $25 million. Moreover, the Congress requires annual reports from the President on the status of FMS (Ref. 23 and Ref. 25).

3. State Department

The State Department is primarily concerned with U.S. Security Policy all over the world, and so established the Bureau of Politics-Military Assistance (Ref. 24). This Bureau generates policy guidance and procedures concerning the issues of U.S. security, FMS and arms control. Within the Bureau, there are three offices that maintain constant contact with D.O.D. and other departments as necessary for the approval of military exports.

a) Office of Security Assistance and Sales (SAS)

b) Office of Munitions Control (OMC)

c) Office of Planning and Analysis for International Security

4. Department of Commerce

The Department of Commerce is primarily responsible for the overall economic growth and technical development of the U.S. Within the Department, the office that maintains inter-departmental discussions affecting the international trade is the office of Domestic and International Business Administration (DIBA). This office is concerned especially with (Ref. 24):

a) Competitive assessment of U.S. industry in domestic and world markets.

b) Expansion of export and export control administration.

c) Federal recognition and participation in international expositions and trade fairs.

5. Department of the Treasury

The Department of the Treasury, 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).

6. 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.

With the D.O.D., there are four major offices involved in military assistance and/or the sale of military items (Ref. 25).

a) Defense Security Assistance Agency (DSAA).

b) Assistant Secretary of Defense for International Security Affairs (ASD/ISA).

c) Elements of the Army, Navy, and Air Force including the Joint Chiefs of Staff (JCS).

d) The Under Secretary of Defense for Research and Engineering (USD(R&E)).

a. Defense Security Assistance Agency (DSAA)

DSAA serves within the Department of Defense, as the responsible office for government to government FMS,

performed under the control of the Secretary of Defense. It was established in 1971 and has been responsible since then for the generation and maintenance of procedural guidance according to the Military Assistance and Sales Manual, DOD Manual 5105.38-M (Ref. 24). In addition to participation in top level planning, programming and reviewing of Foreign Military Sales, DSAA performs the following functions (Ref. 24):

1) Conducting negotiations with the customers.

2) Interfacing with and assisting U.S. industry, in its effort to receive export licenses from the State Department for doing business with foreign countries.

3) Managing FMS credit arrangements and guarantees of private financing for FMS.

b. Office of Assistant Secretary of Defense for International Security Affairs (OASD/ISA).

The OASD(ISA) develops policies concerning international security through a mutual agreement with the State Department. Within the ISA the Deputy Assistant Secretaries (Regional Desks), provide and prepare for their regions the threat analysis for a specific country based upon its potential enemy and the military capability of both sides. The Director of Strategic Trade and Disclosure within ISA provides official DOD positions on any proposed military export or commercial export that has possible military application. This is accomplished in coordination with the Department of Commerce and the State Department. The review of any export license is done by

the Interagency Board consisting of representatives from the Department of State, Department of Commerce, Department of Treasury and The Director of Strategic Trade and Disclosure.

c. Elements of the Armed Forces and JCS

The State Department's Office of Munitions Control (OMC), submits the export application of the foreign country to the concerned service army (Director of International Logistics), Navy (Security Assistance Division) and Air Force (Military Assistance and Sales). Each service has some major functions to achieve, related to FMS (Ref. 25):

1) Upon receipt of the export application, through the DOD Director of Strategic Trade and Disclosure, it formalizes and presents its position.

2) It provides the detailed analysis and evaluations that are necessary for the negotiation process.

3) It assists DSAA in the process of the negotiations.

4) It manages and administers the sales activity during its performance.

The JCS is primarily responsible to the Secretary of Defense for assuring that U.S. National Security Planning accounts for all existing or planned foreign military sales.

d. Under Secretary of Defense for Research and Engineering (USD/R&E)

The Under Secretary of Defense for Research and Engineering (USD/R&E) is deeply involved in foreign

military sales. When it includes R & E aspects it performs the following functions (Ref. 25):

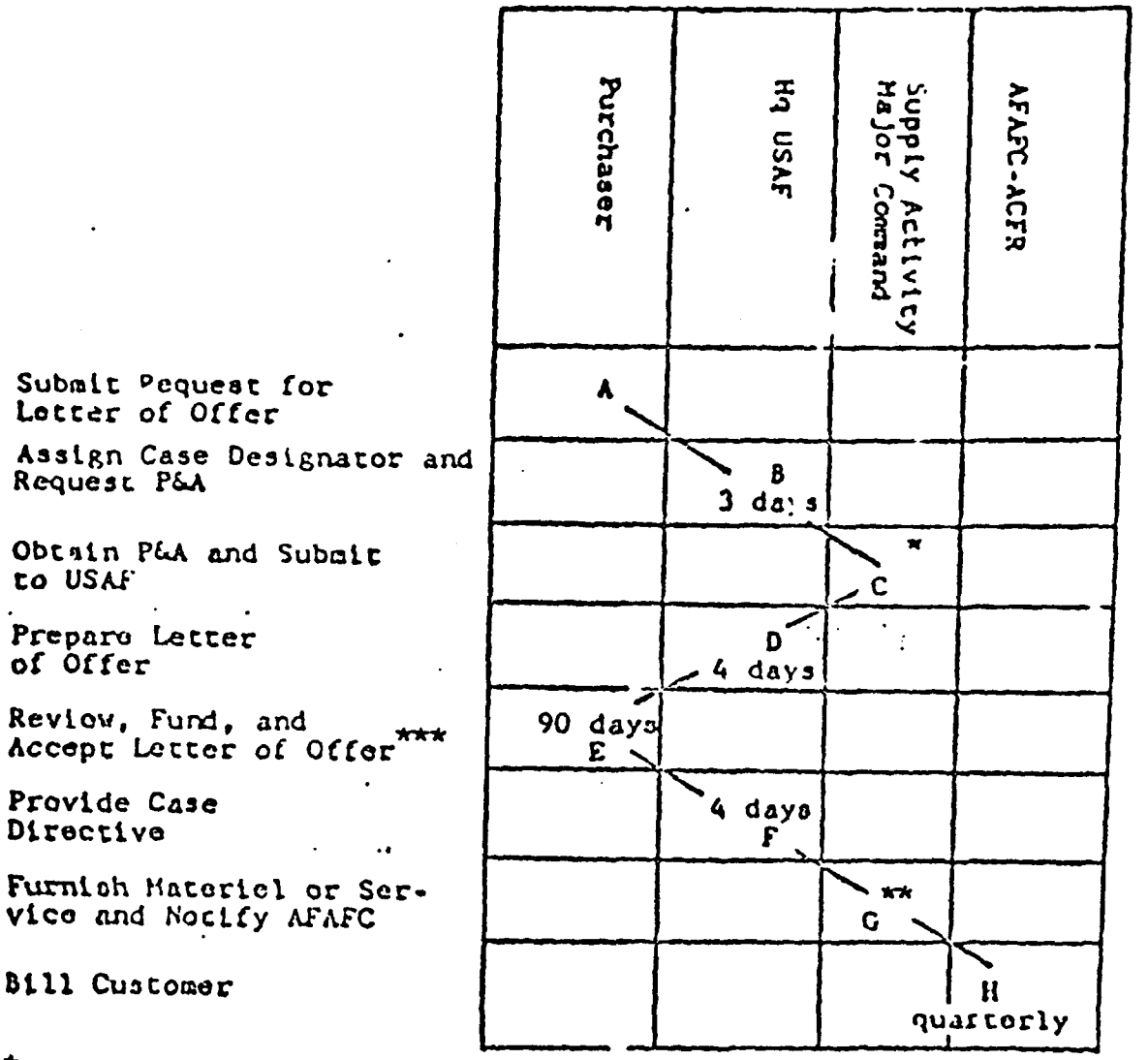
1) Formulates cooperative research and development between U.S. and the foreign country, e.g., F-16 program.

2) Acts on requests from foreign countries for R & E relationships with U.S. industry.

D. THE PROCESS FOR A USAF MAJOR WEAPON SYSTEM SALE

The present acquisition of major systems by the Israeli Air Force (IAF) is concentrated on the USAF F-16, and in the near future on the Navy F-18. This section specifies the process of FMS package sale performed by the USAF.

Based on existing USAF Directives, specifically AFM 400-3 (Ref. 26), the process consists of eight basic steps, starting with the customer's request for a sale and terminating with a billing to the customer for the materials and services as set forth in the approved offer and acceptance DDF 1513 (FIG. 5). The request for the letter of offer and acceptance (LOA) is often known as "a request for sale" or "request for price and availability," presented by the foreign government to the U.S. government. In the case of Israel, the submission goes directly to DOD/DSAA as long as Israel is considered a category "A" country. The definition of the two basic categories is according to the Department of Defense Directive 5105.38-5 (Ref. 24). A category "B" country must first go through the State Department, and the request is coordinated for approval between the State Department



*Time allowed for development of P & A depends on complexity urgency indicated. In no event will time exceed 30 days.
**Time depends upon material availability and leadtime cited in the Letter of Offer, as well as urgency of requirements.
***In dependable undertaking cases, funds need not be submitted until step H unless letter of offer requires down-payment and progress payments.

Figure 5

FMS Case Processing Time Frames

Source: U.S. Department of the Air Force. Logistics Foreign Military Sales. AFM 400-3, 7 May 1974. Washington: Government Printing Office, 1974, p. A25-1.

and the Department of Defense. After the submission by the foreign country, the DSAA will request HQ USAF for its position on the request (FIG. 6).

1. Step A - Submit Request for Letter of Offer

According to the AF procedures (Ref. 26) the request should include the information which is defined in the "checklist for a weapon system sale request" (Appendix E). To respond to the desires for the aircraft configuration and support needs of the buyer, the H.Q. USAF/LGF will usually establish a System Planning Team (SPT). The SPT consists of representatives from the various USAF commands such as Air Force Logistics Command (AFLC), Air Force Systems Command (AFSC), Tactical Air Command (TAC), Air Training Command (ATC), Air Force Accounting and Finance Center (AFAFC), Air Force Systems Command/System Program Office (AFSC/SPO) etc. It serves as a key group for participation in the negotiation meetings with the customer concerning the following subjects:

a) system configuration

b) initial and follow on support requirements

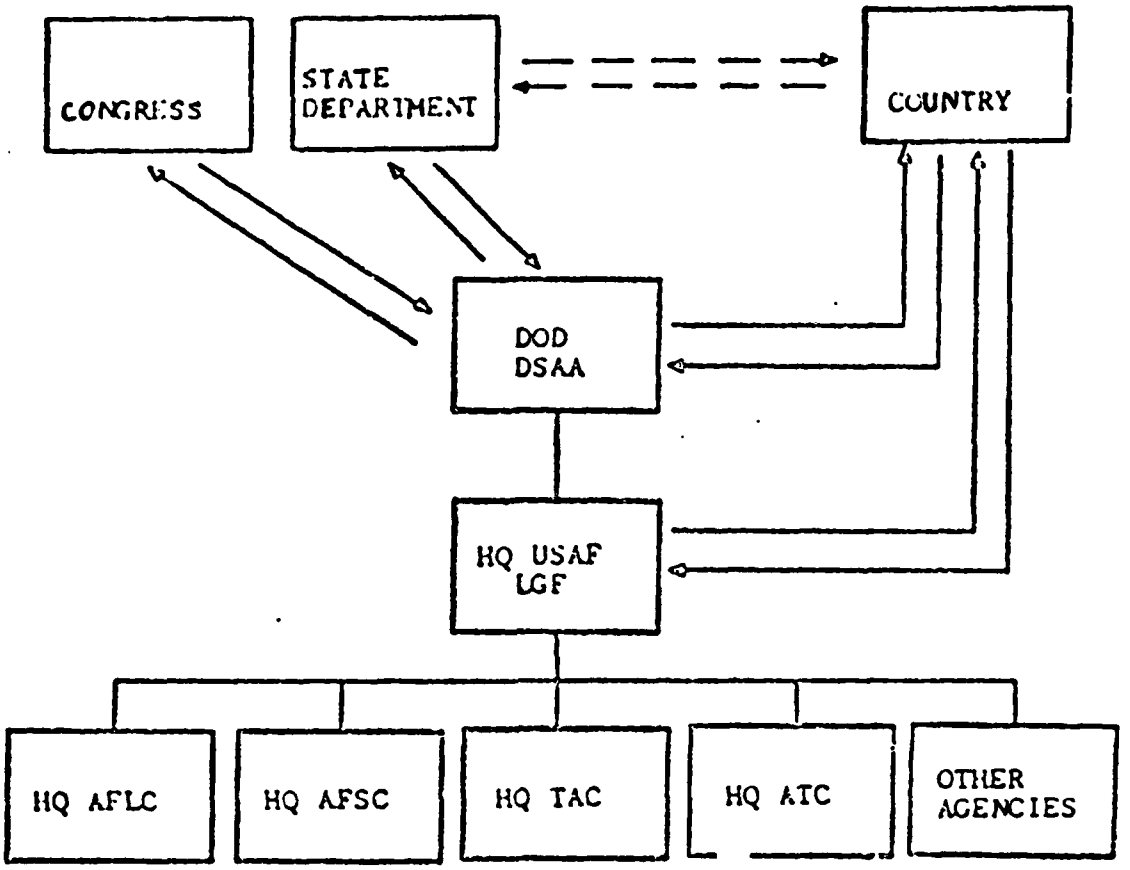
c) initial and follow on technical data

d) survey of facilities, operational and maintenance capabilities of the customer

e) maintenance, modifications and technical assistance

f) air crew and maintenance crew training

g) credit, billing and payment of FMS program



Organizational Structure for Receiving and Processing a Request for an Offer and Acceptance

FIGURE 6

h) Component Improvement Program (DIP) Aircraft Structural Integrity Programs (ASIP), and sustaining engineering programs

2. Step B - Assign Case Designator and Request Price and Availability

HQ USAF/LGF sends an acknowledgment of receipt to the customer and at the same time, asks the various commands for their price and availability (P & A) information concerning the request (Ref. 26).

3. Step C - Determination of P & A and Submission to USAF H.Q.

The various commands prepare the P & A in a time frame that will not exceed 30 days.

4. Step D - Preparation of the Offer and Acceptance

Upon receipt of the P & A from the various A.F. commands, the USAF HQ.LGF prepares the complete letter of Offer and Acceptance. Prior to forwarding the offer to the foreign government, the AF must obtain the concurrence of DSAA. Any LOA in excess of $25 million or sale of major defense equipment in the amount of $7 million or more must be submitted to the Director, DSAA, who in turn must notify the Congress. If the Congress does not adopt a concurrent resolution objecting to the sale within 30 days, the DSAA authorizes the USAF to sign and issue the LOA to the requesting country (Ref. 24).

5. Step E - Review, Acceptance and Funding of the Offer and Acceptance

The foreign government must review, complete and sign the D.D. 1513, within 30 days from the date of receiving

the offer. If the foreign government accepts the offer, the signed LOA is returned to the HQ/USAF.

6. Step F - Provide Case Directive

Upon the receipt of the acceptance of the LOA, the HQ/USAF issues case directives to the participating Major Commands and implementing agencies. The case directives include (Ref. 26):

a) financial aid

b) delivery term code

c) force activity designator (FAD) or priority

d) purchaser's service code

e) nonrecurring cost

f) asset use charge

g) sales commissions and contingent fees

h) any special instructions

7. Step G - Furnish Material or Services and Notify Air Force Accounting And Finance Center

The major commands and the implementing agencies that take actions based on the regulations in AFM 400-3 are (Ref. 26):

a) Air Force System Commands (AFSC)

b) Air Force Logistics Command (AFLC)

c) Air Force Training Command (AFTC)

d) Tactical Air Command (TAC)

e) Air Force Accounting and Finance Center (AFAFC)

Following these actions, procurement and budget authorizations are obtained.

8. Step H - Billing the Customer

This is the last step in the processing of the foreign military sale, concerning the billing and terms of payments. The DSAA maintains the proper account to reimburse Air Force supplying agencies for deliveries or services in support of long term credit financing for a USAF FMS sale.

E. LETTER OF OFFER AND ACCEPTANCE (DD FORM 1513)

The Letter of Offer and Acceptance is extremely important for processing the government to government foreign military sale. It serves as a contract and a basic document for the system acquisition and terms accompanying the acquisition process. As such, it should be prepared with very close and careful attention by all the parties concerned. The LOA specifies the terms and conditions which both governments are expected to abide by and/or fulfill. The DODD 5105.38-M, Military Assistance and Sales Manual (Ref. 24), specifies and details the rules and obligations of the two parties, the most fundamental of which are:

1. United States Government (the seller)

a) Agrees to procure items or services, under the same contract administration, contract clauses and inspection procedures as DOD uses in procuring on its own behalf, except as otherwise agreed between the purchaser and Defense Department.

b) Advises that special warranty terms must be requested and paid for by the purchaser if desired.

c) Agrees to correct deficiencies existing prior to passage of title.

d) Advises that all prices are estimated and that the final price will represent the total cost to the United States Government.

e) Reserves the right to cancel the order prior to delivery and pay the resulting termination costs.

2. The Foreign Government (the purchaser)

a) Agrees to pay in U.S. dollars under the cash or credit terms as were specified.

b) Obtain the export licenses necessary, and furnish shipping instructions.

c) Reimburse the U.S. Government for all costs incurred even though it might exceed the estimate included in the agreement.

d) Have the right to cancel the order before delivery and pay resulting costs.

e) Use the items only for purposes specified in the agreement.

f) Agrees not to be authorized to transfer items to third parties unless otherwise agreed between the U.S. Government and the purchaser.

g) Provide adequate protection for classified security material equivalent to that employed by the U.S. Government.

F. SUMMARY

The FMS policy has evolved dramatically since W.W. II, and the large number of acts, directives, regulations and reports concerning FMS is understood as a consequence of this evolvement. The implementation of the FMS program is complex but it does follow a logical, hierarchical pattern and process in the USG. The Congress maintains overall control through budget constraints, while the State Department determines the basic eligibility and execution policy. DOD executes the FMS program through services using a contractual document between the U.S. Government and the foreign government. This document is a standard form known as D.D. Form 1513 (LOA), which specifies the terms and obligations concerning the two governments in processing and implementing the acquisition of the system.

STAGES IN THE ACQUISITION PROCESS

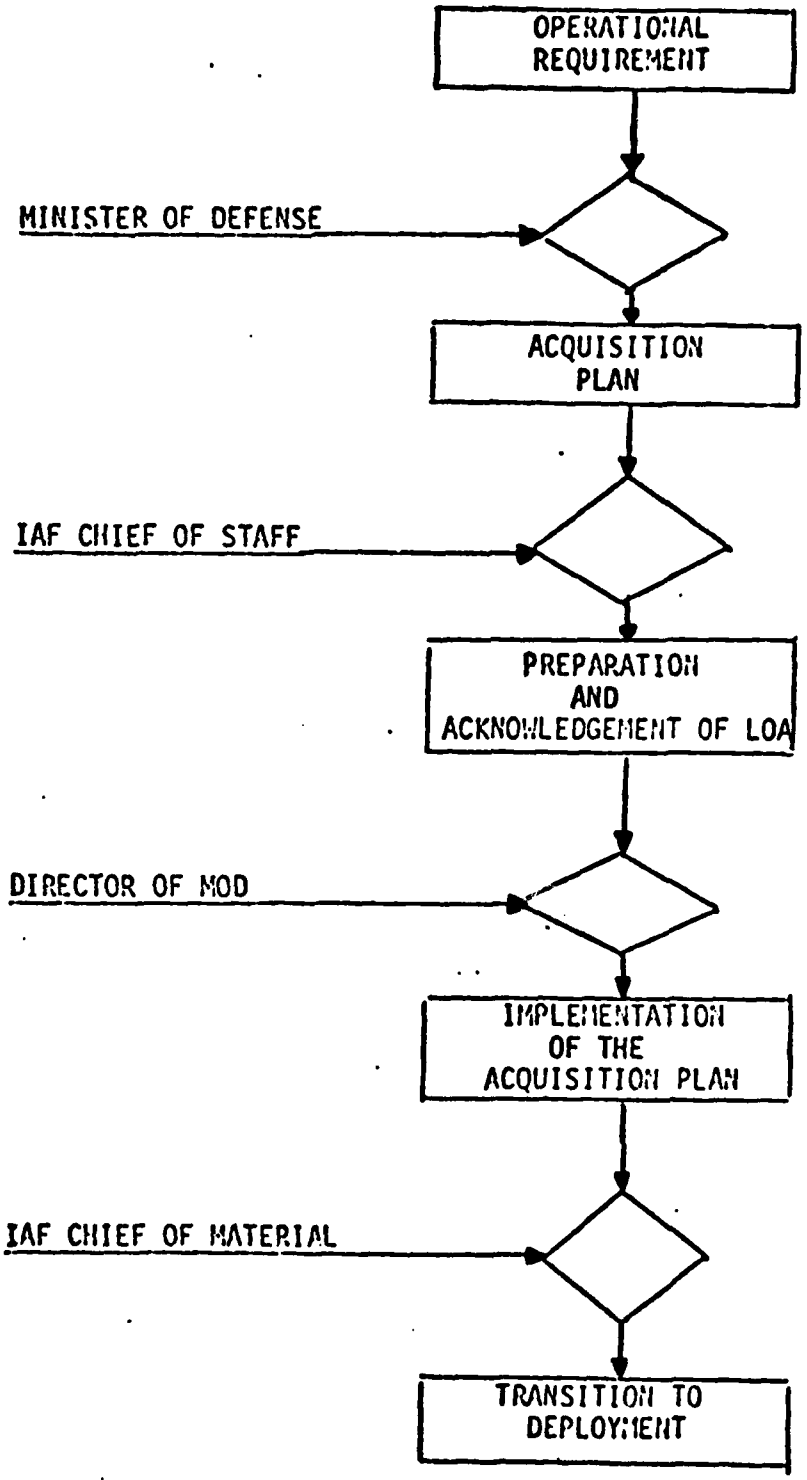


FIGURE 7

THE STRUCTURE OF THE ISRAELI AIR FORCE HEADQUARTERS

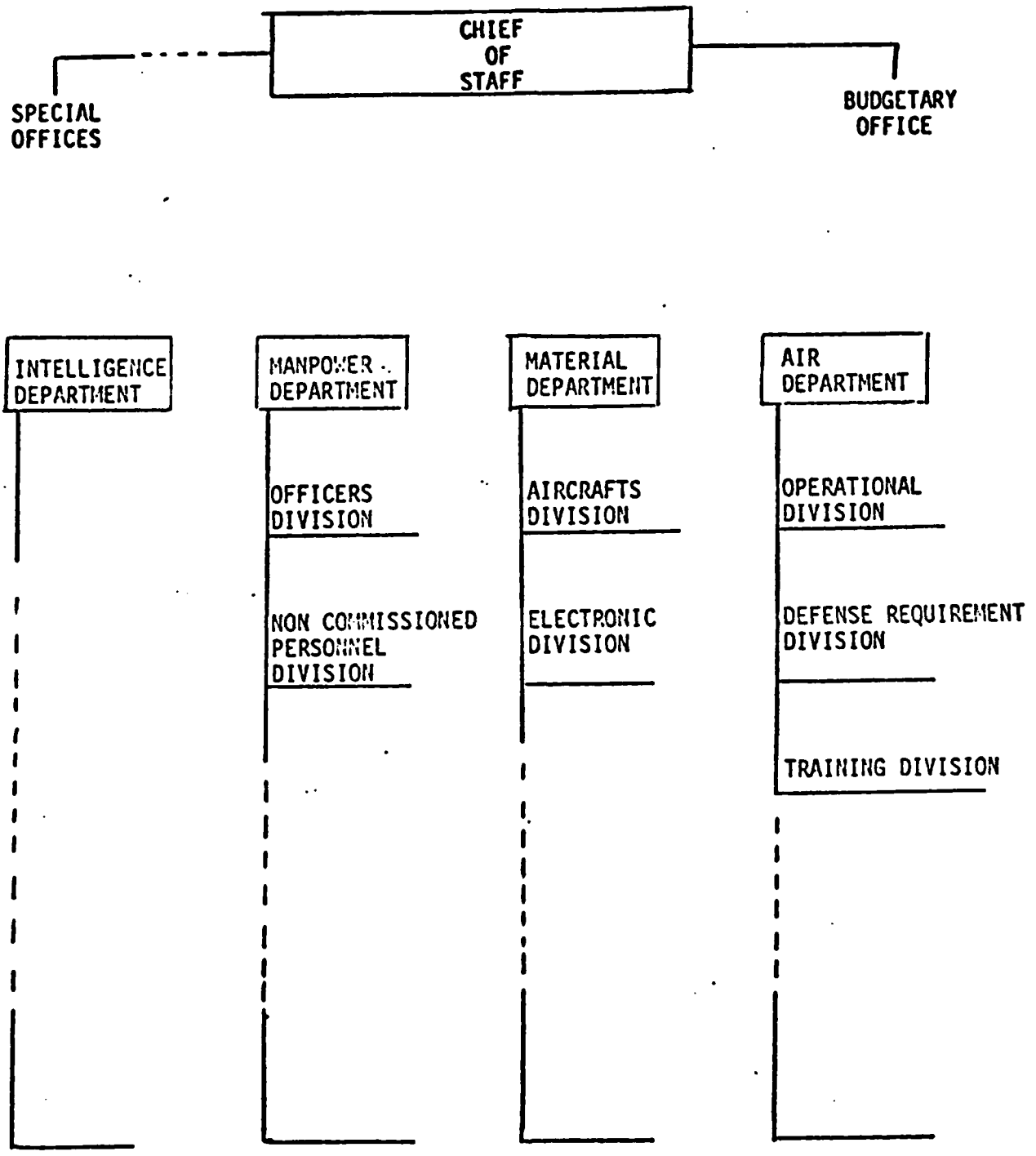


FIGURE 8

IV. THE ISRAELI AIR FORCE ACQUISITION PROCESS

A. GENERAL

This chapter describes the management process for a major system acquisition from the U.S. government through the USAF/FMS as it is presently performed by the Israeli Air Force (IAF). The IAF methodology, for the management of the acquisition of a major system is described in terms of the chronology of the implementation steps and is developed stage by stage, where the basic stages may be defined as follows (FIG. 7):

Operational Requirement

Acquisition Plan

Preparation and Acknowledgement of Letter of Offer and Acceptance (LOA)

Implementation of the Acquisition Plan

Transition to Deployment

Before proceeding to the various stages it is necessary, especially for the American reader, to describe briefly the structure of the IAF HQ.

The Israeli Air Force Headquarters consists of four major departments (FIG. 8).

a) The Air Department-In charge of all operational, planning needs and aircrew and maintenance crew training.

b) The Department of Material-In charge of R & E, procurement and logistics, maintenance processes and activities, construction and facilities.

c) Man-power Department-In charge of all personnel, drafts assignments and promotions.

d) The Department of Intelligence-Responsible for intelligence gathering and action.

The head of each department is a Brigadier General, and is a member of the Chief of Staff Headquarters Board.

B. OPERATIONAL REQUIREMENTS

1. Definition

The acquisition of any system is started with the needs, which are principally based on an existing threat or forecast of a threat in the coming future. In this context, a threat is defined as any phenomenon that may interfere with the basic missions of the IAF goals and responsibilities. Need can also arise as a result of an operational deficiency due to changing mission objectives, changes in the environment, or the obsolescence or depreciation in current military assets. The operation requirement is a statement of those operational needs and deficiencies that the IAF cannot meet within its existing capability.

The document states the needs in terms of how each mission task or function must be done. It is preferable not to state these needs in terms of any specific hardware or software solutions or equipment specifications.

2. Preparation

For a major system the operation division within the Air Department is responsible for forecasting and preparing the need for the "Operational Requirements Document."

Because of the close relationships and the relatively small size of the IAF Headquarters, the document not only states the need but also recommends feasible technological solutions.

3. Process and Approval

The need must be approved by the Head of the Air Department. After approval, the Head of the Air Department asks the Defense Requirement Division to prepare the "Operational Requirement Document" which is based on the approved "Need for Operational Requirement."

The Defense Requirement Division establishes the basic document of the "Operational Requirement", which includes the following major features:

a) Identify the threat and assess its impact.

b) Summarize the operational needs and the deficiencies that arise from the threat.

c) Present alternative solutions, hardware and software.

d) Recommend an alternative that should include assessments of constraints and time table for implementing it.

e) Assess the budgetary acquisition cost.

The division takes into consideration the position of the Department of Material and the Budgetary Office during the preparation of the alternatives. Other divisions from the various departments participate and submit information in reply to the request from the Defense Requirement Division.

The Operational Requirement Document must receive the preliminary approval of the Chief of Staff before any

further process is undertaken. The preliminary approval of the Chief of Staff gives the consent to establish a feasibility study team which evaluates the different alternatives. The evaluation includes visits and talks in the U.S. with the appropriate personnel. When the team returns home the "Operational Requirement Document" will be revised and the final recommended alternative presented with all the data necessary for final approval by the Chief of Staff. This final approval is given after a mutual agreement with the Head of the Israeli DOD and the Israeli Minister of Defense.

C. ACQUISITION PLAN

The planning stage ends with the acknowledgment of the Letter of Offer and Acceptance. This stage consists of two consecutive periods:

--"In House" preparation of the acquisition plan

--Government to Government dialogue

1. "In House" Preparation of the Acquisition Plan

The "operational requirement document" serves as a basic document for preparing the acquisition plan.

The Chief of the Material Department assigns one of his deputies to carry out and be responsible for all the activities during the acquisition life cycle. This duty is currently collateral to the deputy's regular assignment which is taxing enough. The first activity of the assignee is to prepare, with the help of his regular staff, two basic documents as follows:

a. Configuration and Technical Modifications

The configuration and technical modifications document relies heavily on the operational requirement document. It defines the desired configuration, and as a result of that any necessary modifications that should be performed on the system. The constraints of budget and schedule play an important role in the assessment of the modifications and their priority. This document assists and serves in the future negotiations that will be performed during the next stage - "The Implementation Stage."

b. Acquisition Plan Document

The acquisition plan is based on the analysis performed by the feasibility study team and presents the comprehensive plan for the acquisition process.

The plan lays out the objective and the main issues of the Israeli Acquisition Program process. These objectives and issues are evaluated by further meetings and negotiations with the U.S. counterparts for the acquisition such as Pentagon/FMS, SPO/Project Manager and his staff, prime contractor and the major subcontractors.

The objective of this plan is mutual agreement on the form of the "Letter of Offer And Acceptance." Usually the Acquisition Plan Document includes the following major objectives and issues:

(1) Operational Needs. Explaining in detail the threats and needs that cause the IAF to acquire the

specific weapon system, and how this system gives the appropriate answer to the operational needs.

(2) Schedule. The schedule for all the activities is a function of the delivery date of the system to Israel. This date has been decided by the highest authority in the U.S., usually a political decision taking naturally, into account the need of the U.S./DOD for the same system.

Whenever the date is known it must serve both the Israeli side and the U.S. side in their activities on purpose to terminate them before that date. During the meetings, a plan should be presented showing the activities and their related dates.

(3) IAF Maintenance Concept. The Israeli Air Force has its maintenance concept as is described in detail in Appendix F. This concept appears to be the best method for the IAF, and is naturally not identical to the USAF or U.S. Navy method for maintenance. It should be clearly understood by all concerned authorities of the U.S. service as well as the contractor and subcontractors. It is obvious that the maintenance concept has a major influence on many other system elements, especially training and provisioning.

(4) Cost. The acquisition is funded basically from the credit appropriation that had been approved by U.S. authorities. The appropriation usually is divided into categories according to the various program elements that

require budgeting. A cost estimate for dividing the total budget is performed and followed accordingly.

(5) Training. One of the most important long lead time items is the training necessary for operators (pilots in this case), and maintenance personnel. The training may pose some difficulties especially if the system is fairly new, and the deployment in the U.S. has not yet been completed. Typical problems are that the system and/or the subsystems are not available for IAF training since they are dedicated to U.S. training. Secondly, space in classrooms may not be available, again because they are booked to meet U.S. requirements. A third problem often arises because there is not enough knowledge and experience in the concerned service to perform the training (the system is too new). It is possible to list other problems, but recognize that training must be performed on time, using all the possible resources available in the U.S. service and/or the prime contractor and subcontractors. It is important to Israel that organizational level training be performed by the U.S. service, including on the job training (OJT), rather than by the contractor.

(6) Provisioning. A plan for provisioning is prepared with the cooperation of the U.S. service and/or prime contractor. There are several methods for achieving provisioning. The preferable method whenever possible, is to build up an Israeli Provisioning Team that will stay in the U.S. The main reason for that is the difference

between IAF and U.S. service in their points of view on the necessities for spare parts in types and quantities. The team, with the cooperation of the U.S. service, and the recommendations from the prime contractor and the subcontractors, performs its task as needed. Provisioning must ensure the availability of the long lead time items as well as major parts and spares.

(7) Technical Changes. It is obvious that a system which was developed and produced in the U.S., is based on the needs of the service which initiated this system. It is understood that Israel faces some different threats/needs, (some of them are identical to U.S. but not all) and so a need for technical changes in the system is existing.

These technical changes, based on the original operational statement, must be submitted as soon as possible. The best situation is to integrate those changes in the production line or, if this is not feasible, to make the best arrangements to perform these changes back in Israel after delivery. Special attention must be paid to this issue of changes. First, every change that will not be accepted by the cognizant service as a standard one, would hurt the standardization between the systems operated by the U.S. and the ones operated by Israel. (affecting provisioning, technical orders and especially the operating method). Hence, it is desirable to convince the U.S. service to adopt the change as useful for it too.

Secondly, any change will affect schedule and cost. This trade-off must be considered in a very careful manner.

(8) Interim Logistic Support. During the period from the delivery date until the establishment of full capability of depot maintenance, a necessity exists for support from U.S. facilities. A detailed procedure for sending and receiving subsystems between countries must be planned. This can be done either by direct contract with the contractor, or through the FMS case.

(9) Technical Engineering-Exchange of Knowledge. Usually, new systems use new technologies that are not always familiar to IAF engineers. It is necessary to establish mutual agreement concerning these areas. The main obstacle is the classified issue that may prevent exchange of needed information. Regardless, technical information to maintain the system at the depot level must be received, as part of the original agreement between the governments.

(10) Technical Orders and Manuals. Although the maintenance concept of the IAF is not identical to the U.S.A.F. or U.S. Navy, the existing technical orders and manuals must be acquired and used as a basis for establishing the local concept of operation and maintenance. Usually the contractor has some manuals especially for intermediate and depot maintenance level, that can be even more suitable to the IAF, than the existing technical orders of the concerned service.

2. Government to Government Dialogue

The government to government dialogue concerning an acquisition of a major system is a continuous one. Usually the preliminary principal agreement for the acquisition is a part of the political relationship between the two countries and so it arose during the talks between the U.S. President and the Prime Minister of Israel. This agreement is further emphasized during talks between the U.S. State Department and the Israeli Minister of Foreign Affairs and/or between the Ministers of Defense of the two countries. Based on the preliminary agreement, the Israeli Director of the Mission of Defense in New York requests of the U.S. government through DOD/METG (Middle East Task Group) asking for its consent for the acquisition. The consent of DOD/METG includes principally the permission for an export license, and allows the Israeli Mission of Defense to request an FMS case be established. The dialogue between representatives of IAF and the various counter-parts in the U.S. concerning the system (especially DOD/OSAA, SPO, Prime Contractor).

D. PREPARATION AND ACKNOWLEDGEMENT OF LOA

The Letter of Offer and Acceptance (LOA) is a contractual document between the two governments for the acquisition of the system, the maintenance facilities required to maintain the system and the various services that are required for the deployment of the system in country.

(Appendix G). The general procedures for preparing the LOA are described below:

1. A representative team of the IAF, headed usually by the chief of the Air Department of Material or his deputy, come to the U.S. for meetings and discussions concerning the acquisition plan. These meetings clarify the requirements of the IAF as described in the basic documents the "Configuration and Technical Modifications" and the "Acquisition Plan". Representatives from the DSAA, the SPO and in certain cases the prime contractor participate in these meetings, clarifying for themselves all the issues that influence the preparation of the LOA.

2. The Director of the Israeli Mission of Defense in New York, is the only Israeli representative in the U.S., who is authorized to sign the LOA. This is done after receipt of the consent from the IAF/HQ which has had an opportunity to review the informal draft copy of the LOA. The acknowledgement of the Director of the Israeli Mission of Defense on the LOA, enables DOD/DSAA and the IAF HQ to proceed to the next stage: "Implementation of the acquisition plan."

E. IMPLEMENTATION OF THE ACQUISITION PLAN

The implementation of the acquisition plan is divided into two major parallel activities. The first one is the preparation in country for the deployment stage. This activity is carried out by the regular IAF HQ units with the

participation of the operational commands who are planned to employ the system at their bases. The second activity is the joint effort of the U.S. counter-parts and the Israeli DOD and IAF representatives in the U.S. to carry out the successful achievement of the project.

1. Israeli Representatives in the U.S.

The Israeli Mission of Defense (MOD) is the principal Israeli representative in the U.S.A., who is responsible for carrying out the acquisition plan.

To assist the Mission with the necessary activities, the IAF assign to the Mission of Defense the following assistants.

a. A project officer who is usually located at the SPO. This officer will serve as a direct link between the IAF staff and MOD Mission and the USAF in managing the program.

b. A provisioning Team that usually works at the prime contractor's facility.

c. A training officer who carries out the training plan in the U.S.

d. A logistics laison officer who takes care of the logistics requirement of the acquisition and is usually located at the appropriate AFLC Base.

2. Method of Implementation

The MOD, through the project officer, establishes a management plan to carry out the acquisition plan. The

management plan, with the mutual consent of U.S. DOD/SPO, based on three major implementation activities.

a. A Project Management Review (PMR)

The P.M.R. held at least twice a year, is a major meeting place either in the U.S. or in country and includes the participation of all the organizations concerned with the acquisition.

The major participants are the IAF team, headed usually by a deputy of the chief of Material Department, Israeli MOD, USAF HQ, SPO, prime contractor and major subcontractor as required.

The issues at these meetings are based on the LOA, giving the opportunity for all the concerned parties, to assess the overall program status. The output consists of a series of decisions and action items to be performed by a designated organization for the entire program.

b. Management Action Team (MAT)

These meetings are minor meetings that are held much more frequently than the PMR meetings, (usually once a month), and always take place in the U.S. The participants are the Israeli MOD and the various U.S. organizations. These meetings are primarily to review the progress of the various action items that were generated at the PMR meetings.

c. Site Survey Teams

To become familiar with the policies and methods of the IAF "way of doing" operations and maintenance site

survey teams are established. The U.S. site survey teams have the opportunity during the acquisition process to visit the IAF facilities and organizations especially in the following areas.

(1) Maintenance Activities and Facilities. The Survey concentrates on knowing and understanding the capacity and capability of the existing maintenance facilities. By doing so, the team can recommend which extra assets are needed to be purchased or which of the existing assets need to be modified for achieving maintenance tasks of the weapons system. The survey includes not only the labs and shops of the IAF at all three maintenance levels (organizational, intermediate and depot), but also, at the Israeli Industry facilities such as Israeli Aircraft Industry (IAI).

(2) Manpower and Training. The survey team becomes familiar with various technical structures of the mechanics and technicians in the IAF. Because of differences in maintenance concepts between the IAF and the USAF or Navy, the organizational responsibilities of the technical personnel are not the same. Understanding the differences, facilitate plans for the necessary training courses in the U.S. and the depth of training required.

(3) Staff and Line. The survey team includes high level personnel from the USAF H.Q. and the various commands. Understanding the structure of the IAF HQ, the chain of command both in the HQ and at a typical base

facilitates the mutual understanding for both sides to successfully achieve the program objectives.

3. Critical Factors in the Implementation

The three main "pillars" of any project are performance, cost and schedule. The customer should always make the trade off among these three elements to come out with the best available output product.

In the IAF case, the most critical factor is the schedule. The performance and the cost for an end-item (for example acquisition of an aircraft) are primarily decided by DOD/USAF and the IAF has only a slight influence on changing it. In this situation and under these constraints, the schedule is the one that plays the main role in the acquisition process. For entering smoothly into the deployment stage, careful attention must be paid to the following issues. These should be accomplished before the delivery date of the first system.

a. Training

Training in the U.S. for Israeli A.F. personnel should be started early and terminated before the delivery date of the system. The training plan should authorize the first team of aircrew trainees to be qualified for instruction which will be performed later in country. For the maintenance crew the U.S.A.F. authorization must include all the tasks for organizational level and partly, according to the previous negotiation, for intermediate level.

b. Ground Support Equipment (GSE)

At least one full set of Ground Support Equipment for the organizational level should be supplied. For the intermediate level, it will depend on the circumstances and constraints for each case. However, the intermediate ground support equipment required for the flight safety of equipments and systems must be in country before starting the deployment.

c. Supply Support Agreement (SSA)

The initial spare parts for the period of time that was agreed upon should be in country. These spare parts should enable the squadron to perform its flights according to the requirements of the IAF H.Q.

d. Operational and Technical Publications

It is important for the operational and technical publications either of the USAF, or those that are specially published for the IAF, to be available on time.

The technical publications should cover all the technical orders for organizational and intermediate levels.

e. Contractor Engineering and Technical Support (CETS)

An agreement to employ in country a team of experts has to be accomplished. The contractor's experts will help the IAF technicians in their tasks and performance of organizational and intermediate levels maintenance. Their period of staying in country will be as short as possible, to allow for the orderly transition by the IAF

technicians, to independently perform maintenance at the earliest possible date.

f. Logistic Support.

One of the most important representative in country during the first deployment period is the Weapon System Logistics Officer (WSLO). The WSLO ensures the continuous flow of spare parts from USAF to IAF.

F. TRANSITION TO DEPLOYMENT

There is no rigid definition for the length of this stage. It may be defined as a period that starts with the ferry of the first aircraft to Israel and terminates with the last one that lands in country. The duration of this period can stretch from some few months to two, three or more years. It obviously depends on the magnitude of the acquisition and the terms that have been decided. Nevertheless, during this stage the center of gravity for the acquisition process starts to move towards "in country" activities versus the activities that are performed in the U.S.A. A discussion of this period and the deployment stage is in itself, beyond the scope of this paper.

V. COMPARATIVE EVALUATION OF THE U.S. AND IAF ACQUISITION PROCESS

A. OVERVIEW

In Chapter II, we described the project management concept and the system acquisition process as generally directed by the U.S. DOD and carried out by the services. In Chapter III, the FMS process was described because it serves as the principal means for carrying out the IAF acquisition process.

In Chapter IV, the IAF acquisition process for a major system was described. The process is based principally on acquiring an existing system from the U.S. through an FMS case. In this chapter, the IAF acquisition process is evaluated in comparison with the U.S. process for the acquisition of a major system.

The evaluation is concentrated on the main issues, highlighting the principal deficiencies in the existing concept as the researcher sees it. However, the synthesis that follows this chapter is developed in detail, presenting a proposed improved method for managing IAF system acquisition.

As indicated in Chapter II, the Services in the U.S. use two basic principles in carrying out their acquisition process. First, is the concept of a project manager, which essentially emphasizes the idea of one central focal

point of authority and responsibility. Second, is the concept of clear milestones during the process, which serve as decision points for the top authority.

The IAF acquisition process which was described in Chapter IV has only recently been developed due to the later acquisition for F-15 and F-16 aircraft. Comparing the basic method of U.S. acquisition management and the existing IAF method shows some principal differences. It appears that a significant improvement can be reached in the IAF method by adapting and integrating some of the principles of the U.S. method.

B. COMPARISON

U.S. systems acquisition deals with the system throughout its life cycle, while the Israeli acquisition from the U.S. begins with a statement but then jumps to either the late full scale development Phase or to the Production Phase of an existing system or end-item. Despite this basic difference, it is worthwhile to highlight some of the issues by a comparison of similar activities in the two processes, as shown in the following table.

SUBJECT	U.S.	I.A.F.
1. Needs	Based on mission and threat analysis	Same
2. Submission of Needs	Done by Mission Element Need Statement (MENS Document	Done by Operational Required Document

SUBJECT	U.S.	I.A.F.
3. Approval of Needs	According to the existing directives must be approved by Secretary of Defense at Milestone 0.	No definite structure existing, but must be finally approved by Defense Minister.
4.Strategic plan for the acquisition process	The acquisition strategy is developed just after the needs approved at Milestone 0. The project manager, appointed at Milestone 0, is the key person in preparation of the plan.	The strategic plan based on submitting "an acquisition plan" to the U.S. Government, is prepared by the IAF HQ headed by one of the deputies of materials.
5.Structure of the acquisition process	There is a clear definition of the structure which consists of phases and four basic decision points (Milestone 0,1, 2,3)	There is not a clear definition of a structure; neither phases nor milestones.
6.Project manager concept	The project manager and the project management office is the key element of any acquisition of a major system.	A project office exists whose task and duties concentrate on coordination with a very narrow spectrum of authority and responsibility for the program.
7.Tradeoffs between cost, performance and schedule	One of the major concerns of the project management office during the entire process.	Concerned primarily with schedule while the cost and performance are basically constraints dictated by the U.S. through FMS.
8.Selecting the best alternative	Based on competition by contractors and free to choose the best design consistent with cost and schedule.	Constrained by the end-items that already exist hoping that one of them can suit with minor modifications.

SUBJECT	U.S.	I.A.F.
9. Operational and/or technical changes	Free to evaluate and implement the necessary changes during the acquisition process.	May ask for changes but not automatically made. Must get approval from the service and the agreement of the prime contractor.
10. Initial deployment support	Relies heavily on the prime contractor and subcontractors.	Impossible to do it the same way essentially due to the geographical distance constraints. Must rely on assistance agreement and accelerated training and supply.

An immediate result of the above comparison shows that there are three basic differences between the two methods:

a. Structure of the acquisition process.

b. Project manager concept.

c. Implementation method.

C. STRUCTURE OF THE ACQUISITION PROCESS

The existing IAF acquisition process does not have a distinct structure of phases and major decision points, the milestones, such as characterize the U.S. method.

The prime advantage of the U.S. structure is the opportunity to control and assess the acquisition strategy during each phase of the acquisition. The activities already performed to each milestone are evaluated, the threat

(need) reassessed, and approval for entering into the next phase is given technical, military and economic thresholds are still valid. The lack of structure in the existing IAF process, causes redundant time consuming and thus inefficient work of the IAF H.Q. The lack of milestones causes the various functions in the IAF H.Q. to devote their efforts and time to assessing and approving each and every activity in carrying out the process. The existence of a well defined structure with a clear definition of phases and milestones, would facilitate the work and enable each function in the IAF H.Q. to concentrate in its own area with overall evaluation of the specific project occurring only at certain points in time, namely the milestones as shown in Chapter IV, Figure 7.

The Israeli acquisition process can be divided into the following phases:

1. Operational requirement
2. Acquisition process
3. Validation of LOA
4. Implementation of the acquisition
5. Transition to deployment

Each one of the above phases include, the necessary activities to carry out the objectives of the specific phase. At the end of each phase a higher authority analyzes the consequences and approves proceeding to the next phase. Thus, the basic structure already exists to implement the milestones concept.

D. PROJECT MANAGER

The concept of a project manager is based on having a strong central management unit which integrates all the necessary activities to carry out the project under the direction of a single manager with decision authority. The existing IAF method is based on a Project Officer (not Project Manager) who is not responsible for the overall planning and implementation of the project but who serves more as a coordinator or laison officer between the IAF H.Q. and the U.S. authorities. This results in an awkward management structure and too long a pipeline of decision making. A change in the authority level of the project officer so that he can perform as a project manager should overcome the above deficiency. A project manager would be responsible for handling all the issues concerning the acquisition process. He would report to the IAF H.Q. and would have the opportunity to affect the project at the various milestones points. This concept would relieve the burden of work on the IAF H.Q. as long as the project manager fulfills his duties.

E. IMPLEMENTATION

The responsibility for the implementation lies with the Deputy of the Chief of Material as mentioned in Chapter IV this duty is currently collateral to the deputy's regular assignment which is taxing enough. The establishment of a project management office will release the

Deputy from this responsibility. The implementation would be carried out by the project manager who devotes all of his time and effort to the project. The Deputy would still have the responsibility of review and approval, and general guidance to the project manager but, not have to deal with the day to day implementation activities. Implementation by a centralized unit under a single direction would better serve the overall management and integration of all the various functions and activities concerned with the acquisition. Such central management is vital for the success of the project as a whole.

As a result of the evaluation in this chapter of the existing IAF acquisition process vis a vis the U.S. systems acquisition process the following chapter contains a proposed restructuring of the IAF acquisition process to allow for improved management.

VI. A PROPOSAL FOR IAF ACQUISITION PROCESS

A. OVERVIEW

The existing system acquisition process carried out by the IAF has some deficiencies as was described in the Chapter V. On the other hand, the advantages of the project management concept and the structure concept of phases and milestones which characterize the acquisition performed by the U.S., may readily be adapted and integrated by the IAF.

In this chapter, the synthesis of these principles under existing constraints of the IAF, is evaluated. In the following section a proposal for a process to carry out the IAF acquisition is suggested. This proposal tries to integrate the U.S.'s policy and method with the existing IAF concept.

The evaluation will lead to the definition of Phases and Milestones as follows: (FIG. 9)

1. Phase 1 - Operational requirement phase, which ends with milestone 1, approval of the operational requirement.
2. Phase 2 - Validation of Letters of Offer and Acceptance (LOA), which ends with milestone 2, the signature on the LOA.
3. Phase 3 - Implementation of the Acquisition, which ends with milestone 3, the delivery date of first system to Israel.
4. Phase 4 - Deployment in country.

IAF ACQUISITION PROCESS

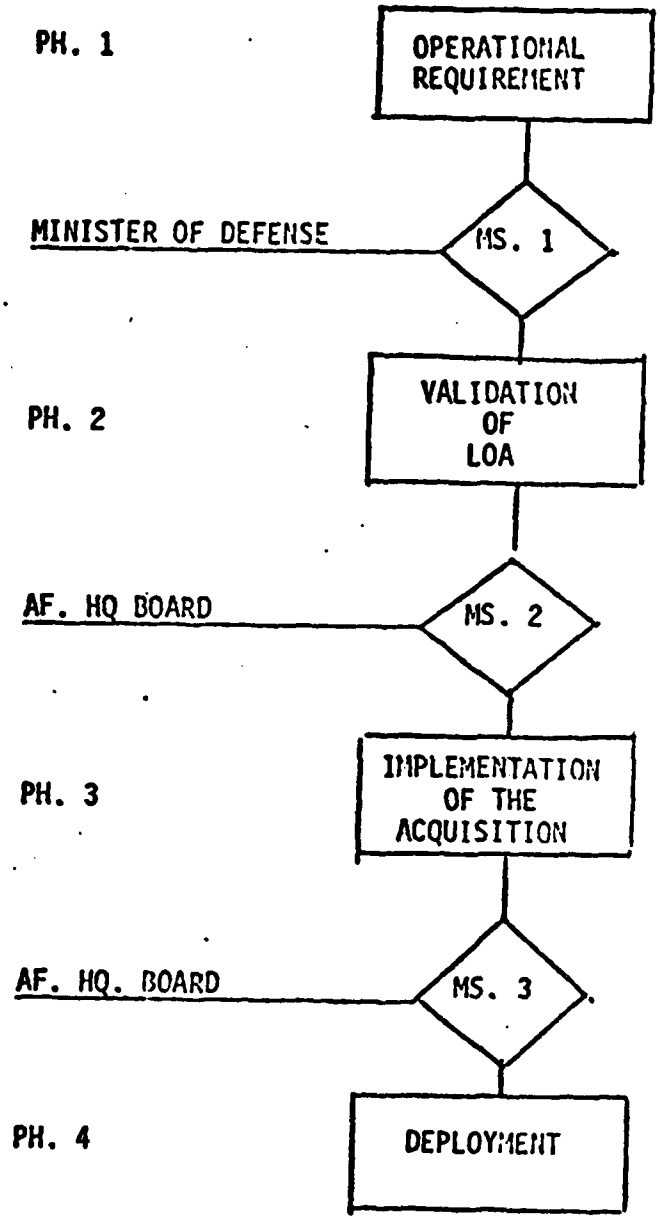


FIGURE 9

B. PHASE I - OPERATIONAL REQUIREMENT

The mission statement and operational requirement is the initial period in the system acquisition life. During this phase, the needs for a system is verified, based upon a threat that the IAF must face.

We can identify three major activities written this phase as follows: (FIG. 10)

-Identify the threat and establish the "need for operational requirement"

-Statement of the "Operational requirement"

-Approval of the "Operational requirement"

1. Need for Operational Requirement

Identification of a need should be based on an existing threat or forecast for a threat in the coming future. It can also be based on operational deficiency due to changing mission objectives, environments, or the obsolescence or depreciation of current military assets.

The operational needs are usually derived from the operating commands, on the basis of primary mission tasks, assigned to them by the Head Quarters. Naturally the H.Q. may also identify operational needs. However, the operational division in the Air Department is the only authority to gather and assess all the requirements to one basic document which is known as "need for operational requirement".

This document as mentioned in the previous chapter, should be approved by the chief of the Air Department, before proceeding to the next activity.

PHASE 1 - OPERATIONAL REQUIREMENTS

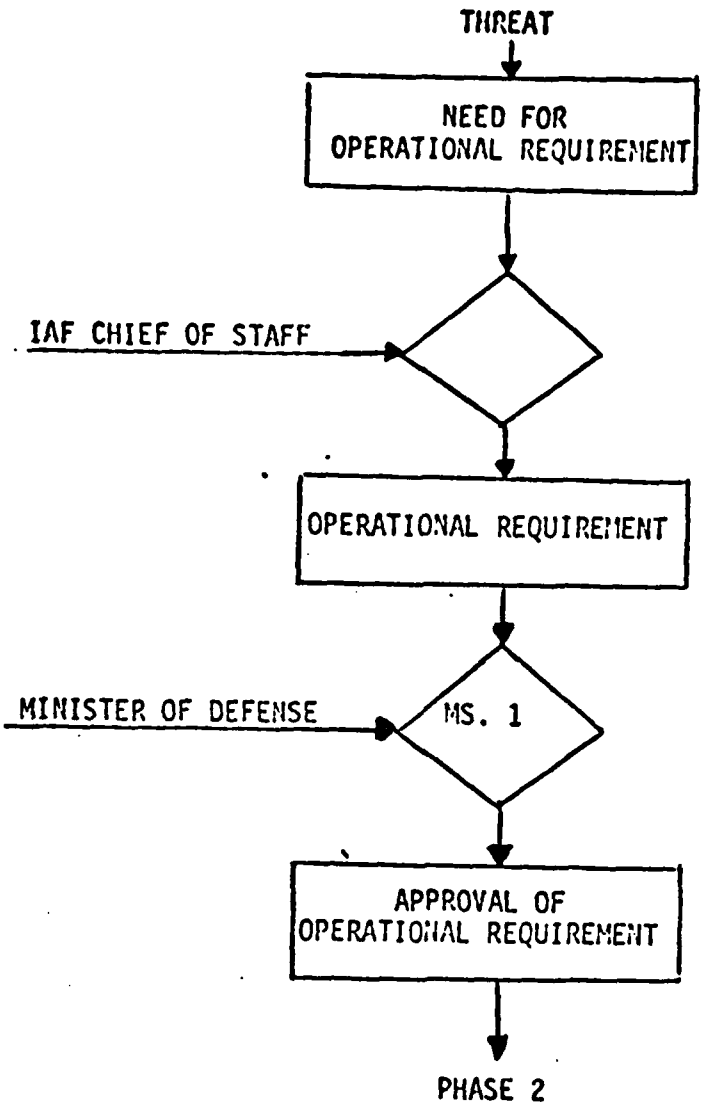


FIGURE 10

The chief of the Air Department by approving the "need for operational requirement" enables the next division in the Air Department, the Defense Requirement Division to start the preparation of the basic document of the acquisition, the operational requirement document.

2. Statement of the "Operational Requirement"

The Defense Requirement Division, is responsible for the preparation of the "Operational Requirement Document. Its activities should be such as described in the previous chapter V.

The approval of this document, should be notified as milestone 1, the first basic decision point in the acquisition process. The decision should be taken by the highest authority in the defense arena, namely by Israeli Minister of Defense.

The approval act should be followed by suitable directives and constraints, for carrying out the project. Under those directives and constraints the IAF Chief of Staff approves the continuation of the project.

3. Approval of the "Operational Requirement"

Based upon the decision of the Minister of Defense, the IAF HQ Board headed by the Chief of Staff, gives its approval to the operational requirement document and shall assign at that time, two main functions as follows:

a) Assigning a project manager and his staff to run the project.

b) Assigning one of the deputies of the chief of material, for the major overview of the project.

The project management function should start its activities as soon as possible namely at milestone 0. It should be organized in a matrix method type, and consist at least of six personnel.

a) Project manager usually a full Colonel technical officer.

b) Operational officer usually a pilot with suitable experience.

c) Aeronautical engineer technical type officer.

d) Avionics engineer technical type officer.

e) ILS engineer.

f) Contract/budget officer.

The deputy of the Chief Department of Material, should not be responsible for carrying out the acquisition process, but should be assigned for the overall direction and control of the acquisition.

C. PHASE 2 - VALIDATION OF LOA

Phase 2 starts right away after milestone 1, and ends with milestone 2, which is the approval of LOA, DD form K13 (FIG. 11).

In contradiction to the existing method as was described in Chapter 5, the project manager becomes the key element in the coming activities, and not the deputy who will be concerned only from the point of view of control and direction.

The phase consists of three main stages. First is the planning that includes preparation of the basic acquisition

PHASE 2

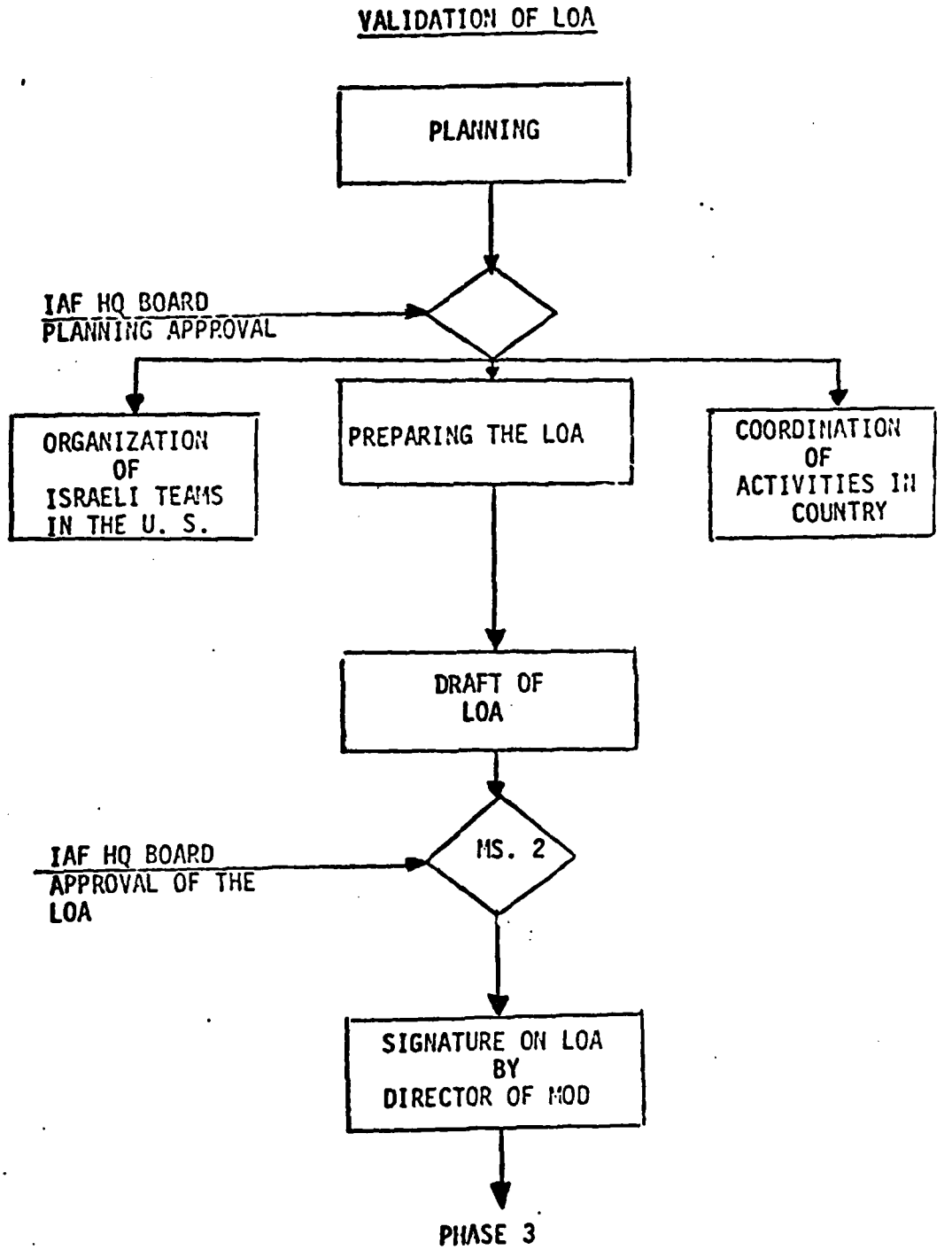


FIGURE 11

documents, the acquisition plan and the configuration and technical documents. Second is the main interactions and activities of the project. Third is the evaluation and approval of the LOA.

1. Planning the Basic Documents of the Acquisition Process

The project manager should be busy in starting phase 2, by preparing the initial basic papers of the acquisition. First is the acquisition plan and second the configuration and technical modification document. Preparation and establishment of these documents, should be done in similar way as described in Chapter V.

The project manager should function under the constraints and directives of the operational requirement approval. However, the sole, responsibility and authority of the project manager should be vast enough to carry out the acquisition plan all the way to its end. These documents should be approved by the IAF HQ Board, headed by the Chief of Staff.

2. Main Activities

From now on, the activities of the project manager should be concentrated in three major issues:

a) participation in the preparation process in country, for the deployment of the system.

b) preparation of each one of the issues, in the Letter of Offer and Acceptance (LOA).

c) organization of the personnel, that will carry out the acquisition in U.S. under the Israeli Mission of Defense (MOD).

The importance of LOA was mentioned in Chapter III, and as such, a special attention should be given by each member of the project management team to ensure the coverage of all the issues necessary (Appendix A). The preparation should be in correlation with USAF directives, described by AFM 400-3 (REF) attachment 7, "Instructions for preparing the U.S. Department of Defense Offer and Acceptance," DD form 1513, and AFM 400-3(R) Chapter 4, "Requesting and processing FMS Cases."

The second major activity of the project manager is the coordination of the activities in country, concerning the preparation of the facilities needed for the deployment phase. These activities should be performed under the specifications and constraints of the system, and in conjunction with the capability and availability of the existing facilities.

The third major activity is the organization of the different professional teams which will be planned to perform in U.S. under the directive of the Israeli Minister of Defense (MOD). The teams and/or the personnel at this time are:

a. Project Office

This team is recommended to consist of the project manager himself and a part of his original team. Two officers will join him, the operational officer and the aeronautical or avionic officer. (the contrast of technical specialty of the project manager)

b. Provisioning Team

This team should include all the spectrum of the professional personnel concerning the aircraft and its system.

c. Training

A team that should include a professional training officer and an assistant officer who will take care of the management side of the training issue.

d. Logistics laison officer

An officer whose activities should cover the logistics aspects of the project, from the point of view of the spare parts acquisition.

3. Evaluation and approval of LOA

The procedure and the activities steps that precede the approval of the LOA, was described in Chapter V paragraph D. Milestone 2 should serve as a decision point of the board approving the draft of the LOA. Based upon milestone 1 decision, the Director of MOD in New York should sign the DD Form. The signature terminates this phase 2, and starts the following phase of the implementation of the acquisition.

D. PHASE 3 - IMPLEMENTATION OF THE ACQUISITION

The center of attention in carrying out the acquisition process now shifts to the U.S. (FIG. 12). This phase should start with the various Israeli teams, who come to the U.S. and integrate with their counterparts in the U.S.

IMPLEMENTATION OF THE ACQUISITION

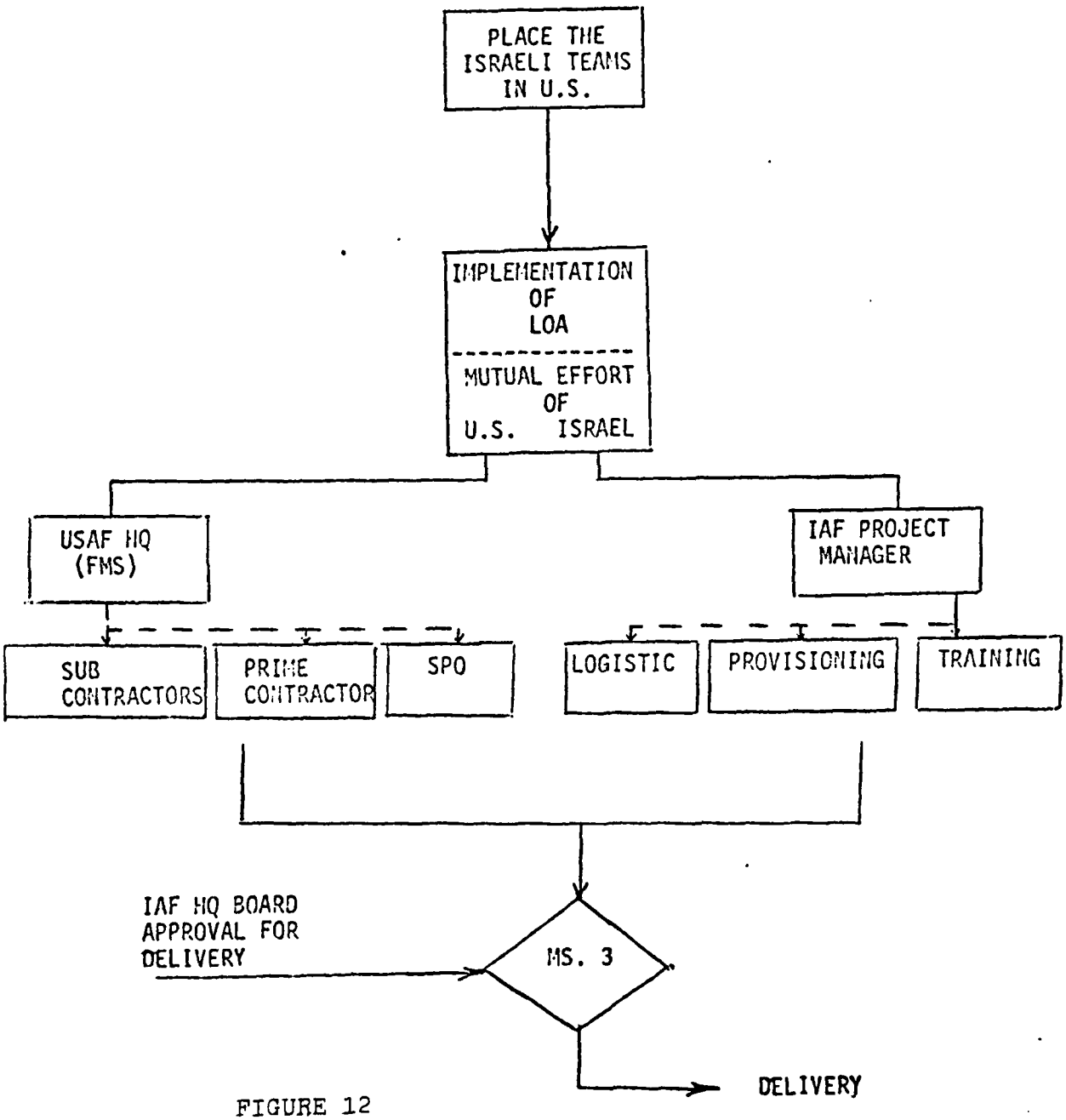


FIGURE 12

DOD, USAF, prime contractor and the major subcontractors. The phase ends with milestone 3, which is the decision point for an approval of the delivery date of the first aircraft to Israel. This decision should be taken by IAF HQ Board.

1. General

The various major functions that should be carried out in the acquisition process depend heavily on the mutual effort of the Israeli personnel, and U.S. DOD/AF Contract or personnel.

The Israeli personnel consists of various teams, and their activities and responsibilities were described in Chapter IV section E. The IAF program manager and his team, in the U.S., serve as a principal implement for the acquisition process. His activities should be described as follows:

a) Obtain and evaluate all the necessary background instructions and directives in order to render timely recommendations on behalf of the IAF.

b) Coordinate the activation of Israeli provisioning, training and logistic teams.

c) Continue to coordinate the preparation in country for facilities maintenance support and squadron activities.

d) Monitor the execution of LOA.

e) Monitor the manufacturing program, peculiar configuration, modifications and changes associated with it.

f) Monitor the development and production of the peculiar support equipment.

g) Monitor the direct activities between the prime contractor and subcontractors in U.S. and the IAF staff in country.

2. Implementation Concept.

The most important factor in this phase, is the mutual understanding of the acquisition issues, by both sides, the U.S. counterpart and the Israeli representatives.

Under the limitations and constraints that exist for both sides, the optimal way must be found for carrying out the acquisition process.

To help the vital interaction necessary for the execution of the LOA, the PMR (Project Management Review) and the MAT (Management Action Team) meetings are established. These meetings should include issues as was described in Chapter IV section E.

In accition to these meetings it is recommended that a new kind of meeting be established with participation of the top authorities of both sides concerning the project. The top authorities may consist of the following:

a) U.S. project manager

b) USAF HQ principal in charge of the FMS case

c) Representative of the prime contractor

d) Chief, Department of Material

e) Chief, Department of Air or his deputy

f) Director, of MOD in New York

g) other top authorities, representatives, depending on the specific project.

These top meetings should take place either in the U.S. or in country once just before Milestone 2 (signature on LOA) and secondly just before milestone 3 (the delivery of the first aircraft to Israel).

These meetings should deal with any major policy issues such as significant changes in the project concerning schedule, cost, or quantity and configuration of the aircraft.

E. PHASE 4 - DEPLOYMENT IN COUNTRY

This phase shifts the process back again towards in country activities. It starts when the first aircraft is delivered to Israel, and continues as long as necessary. This phase is beyond the scope of this Thesis. However, some of the main subjects that belong to this phase are:

1) Ensure full organizational, intermediate and depot maintenance capability in country.

2) Ensure the existence of the logistic support capability in country.

3) Establish the aircrew and maintenance crew training facilities in country.

4) Ensure the existence of all the ground support equipment and special tools that are needed for maintenance.

5) Ensure the existence of all the publications and documents, for operation and maintenance tasks.

VII. SUMMARY AND RECOMMENDATIONS

A. SUMMARY

The IAF acquires its major defense systems from the U.S. The IAF acquisition method has only recently been developed due to the acquisition of F-15 and F-16 aircrafts. As a result it is still not well defined compared to the U.S. system acquisition process. The IAF acquisition method is compared with the U.S. method, taking into consideration the Foreign Military Sales constraints. The evaluation of the IAF acquisition process shows that the proposal for modified process concern three main subjects. Establishment of a clear structure of the systems acquisition process. Establishment of a project manager and finally modifications of the implementation method.

B. RECOMMENDATIONS

The following recommendations for modifying the IAF acquisition process are submitted:

1. Overall Management Direction

The existing method causes the majority of activity to be reviewed and decided upon, and carried out at many levels in the IAF HQ in Israel. It is recommended that these activities be shifted to the U.S. and that a responsible Israeli Center for acquisition be established in the U.S.

2. Structure of the Systems Acquisition Process

Modify the existing "way of doing" to an official process consisting of phases and milestones are described in Chapter V. This will structure the project for better implementation and decision making and simplify its control.

3. Project Manager

Modify the concept and tasks that are related to the existing project officer, by giving the project officer a much wider scope of authority and responsibility. This will emphasize the central management concept for the project and diminish the uncertainty of authorities and responsibilities that exists in the present concept, when all the IAF H.Q. functions are involved in the process.

4. Implementation Concept

It is recommended that the implementation be carried out by the project manager, and not by the Israeli A.F. H.Q. functions in Israel. This will shorten the work load on the IAF H.Q.

5. Further Research

It is recommended that the above recommendations and the discussion presented in the previous chapters including the proposal in Chapter VI, be analyzed, and evaluated. The evaluation and analysis should be performed by a steering committee of Israeli A.F. H.Q. and the Mission of Israel in New York, for the purpose of adopting modified acquisition process as presented in this thesis.

APPENDIX A

CIRCULAR A-109, OFPP PAMPHLET NO.1 AND MAIN DOD DIRECTIVES RELATING TO SYSTEMS ACQUISITION

A. CIRCULAR A-109, OFPP PAMPHLET NO. 1

Circular A-109 and OFPP pamphlet No. 1 specify certain key decisions, and outline the sequence of activities in the major system acquisition process. They provide agencies with flexability in determining how they will meet the requirements of the circular. According to the circular major system acquisition includes the following requirements and issues to be implemented by the various agencies (Ref. 4):

1. Directing top level management attention to the determination of agency mission needs and goals.
2. Providing a systematic approach for establishing mission needs, budgeting, contracting and managing programs.
3. Emphasizing earlier direction for research and development efforts to meet mission needs and goals.
4. Providing improved opportunities for innovative private sector contributions to national needs.
5. Avoiding premature commitments to full scale development and production.
6. Communicating with Congress earlier in the acquisition process by relating major system acquisition to agency mission needs and goals.

In addition to the above it can be studied from the circular that the project manager should strive for the following objectives:

1. Ensure that the system fulfills a mission need, operates effectively and demonstrates performances and reliability that justifies the allocation of various resources.

2. Ensure, as much as is economically feasible, a competitive environment throughout the entire acquisition process.

3. Be alert to perform trade-offs between cost, performance and schedule.

4. Establish adequate evaluation and tests.

5. Accomplish system acquisition planning based on agency missions.

6. Formulate a specific acquisition strategy for the program.

7. Be able to predict, review, assess and monitor the three pillars of system acquisition cost, performance and schedule.

8. Serve as the main source of information concerning his programs to higher level organization within his agency or others, and Congress.

B. DOD DIRECTIVES RELATING TO SYSTEM ACQUISITION

Based on OMB circular A-109, DOD has amended its directives, and has published the following key directives concerning the acquisition of a major system:

1. DODD 5000.1-"Major System Acquisition" was first issued in July 1971 and reissued in January 1977 (Ref. 3). It established the policy and mode of operations for all major defense systems acquisitions. Furthermore, it emphasizes the key element of the project management office and sets guidelines for the major milestones and phases during the acquisition cycle. This directive defines a major system, that has an estimated R & E cost in excess

of $75 million and/or an estimated procurement cost in excess of $300 million. It also defines other criterions for designation a major system.

2. DODD 5000.2 - "Major System Acquisition Process" was reissued in January 1977 (Ref. 6). This Directive establishes the Mission Element Need Statement (MENS), and the Decision Coordinating Paper (DCP), as the decision recording documents. Furthermore, the Directive establishes the Defense System Acquisition Review Council (DSARC) as the decision review body, for the various milestones during the acquisition process (Ref. 7).

3. DODD 5000.3 - "Test and Evaluation" was reissued in January 1977 (Ref. 8). It establishes the responsibilities of the Under Secretary of Defense for Research and Engineering USD(R & E) and the requirement for independent test and evaluation of the defense system by the user.

4. DODD 5000.4 - "OSD Cost Analysis Improvement Group" was issued on June 13, 1973 (Ref. 9). The Directive establishes the CAIG and emphasizes the requirements for an independent parametric cost analysis (IPCA) for all major programs.

5. DODD 7045.7 - "Planning, Programming and Budgeting Systems" was issued on October 29, 1969 (Ref. 10). It establishes the PPB policy and directives within which acquisition must be performed.

APPENDIX B

THE MISSION ELEMENT NEED STATEMENT (MENS DOCUMENT)

The acquisition of a major system must be based on a mission element need rather than on preconceived hardware ideas or capabilities. The service prepares for a milestone zero decision, by submitting a Mission Element Need Statement (MENS), which accomplishes the following (Ref. 11):

1) Identifies the mission area and states the need in terms of mission element need and not in hardware requirement.

2) Assesses the threat through the time-frame the system is required.

3) Identifies existing DOD capabilities to accomplish the mission.

4) Assesses the need in terms of deficiency in the existing capability.

5) States the known constraints and the anticipated boundary conditions for each of the alternative solutions.

6) Assess the impact on defense capability to cope with the threat in the case of not acquiring or maintaining the capability.

7) Provides a program plan for exploring competitive alternative systems and establishing the system program management office.

APPENDIX C

PROJECT MANAGEMENT ORGANIZATION

The project management organization is one of the most notable applications to the management theory in the development and implementation of the project management concept. Various views on the effective methods of project management are derived from the desire to find the right tool for the optimal integration of people, resources and techniques to monitor and control a project. Three basic different organizations can be identified (Ref. 1).

1. Functional Management Organization

The specific program is managed by the existing hierarchical structure of the organization. The organization consists of different functional departments, each of which is responsible for the activities in its own area of specialization in relation to the basic goals of the organization. A new program is observed as a complex of activities to be shared by the various departments under the general supervision and responsibility of the top manager.

2. Program Management Organization

This type of organization emphasizes the program as a system that stands by itself, rather than a series of specialized functions within several departments. In this case, all the resources for achieving the various tasks necessary to attain the program are assigned to one

organization headed by a program/project manager. This unit can consist of up to several hundred personnel depending upon the magnitude of the project.

3. Matrix Organization

The matrix type of organization attempts to draw together the advantages of the two structures previously mentioned. This type includes establishment of a project team headed by a project manager, but without placing directly under his supervision all of the resources needed to perform the necessary tasks. The project manager and his relatively small team, must depend on the functional groups for accomplishment of their tasks. It is clear enough, that each one of the above organizations has both advantages and disadvantages. Nevertheless two of them emphasize the importance of a project manager, who should be devoted totally to his project.

APPENDIX D

DECISION COORDINATING PAPER

At the alternative system concepts exploration phase, the Decision Coordinating Paper (DCP) is prepared and should be approved on milestone 1. DCP is the principle working document to support DSARC and (S)SARC reviews and recommendations for SECDEF decisions at milestone 1, 2 and 3. The document which is limited to 20 pages less its annexes, includes the following subjects:

1) The "MENS" approved at milestone 0 and the current updating of the "MENS".

2) Description of alternative programs, and their anticipated performance.

3) A summary of the acquisition strategy.

4) Short and long term business planning information.

5) The structure of the program.

6) Uncertainty points in the program and the probable impact.

7) Technical Assessment Annex should be included in the DCP at Milestone 1 and Milestone 2.

8) A resource Annex for each program alternative.

9) A logistic Annex (1 Page)

10) Program Management constraints for selected program factors for each alternative should be included as an Annex for Milestone 1.

11) Schedule, cost and performance information should be firmly clarified in the DCP's prepared for milestone 2 and milestone 3.

12) Test and evaluation planning and status.

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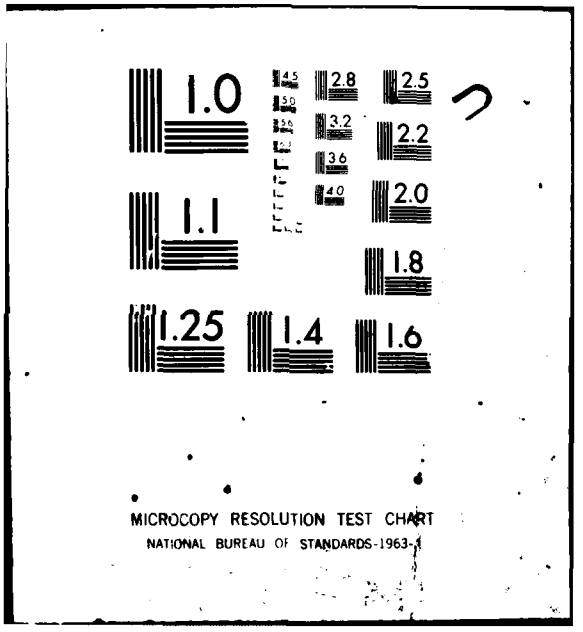
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13) Program issues including their assessment.

14) DSARC and (S)SARC recommendations and decisions.

15) SECDEF direction and decisions.

APPENDIX E

CHECKLIST FOR A WEAPON SYSTEM SALE REQUEST

The following checklist is to be used by the purchaser for the FMS of all aircraft. This checklist is to be included with the initial request for new, USAF inventory, and excess USAF aircraft under FMS. When preparing the checklist, each item must be addressed and an entry made. Enter "N/A" if not applicable.

1. Country:
   Country Project Security Classification:

2. Aircraft Model/Designator/Series (MDS):

3. Quantity:

4. Basic configuration:
   a. Additions to basic (Attach list).
   b. Deletions to basic (Attach list).
   c. Option items to be separately priced.
   d. Changes to configuration:
      (1) Included in aircraft cost.
      (2) Optional item.

5. Source Data:
   a. Inventory aircraft.
      (1) Prepare for one time flight.
      (2) Serviceable, reconditioned or rehabilitated in accordance with Attachment 27, AFM 400-3 and AFR 400-6.
   b. Production:
   c. Development (RDT&E):

6. Delivery Data (Schedule):
   a. First aircraft at plant:
   b. Desired monthly production rate:
   c. Method of delivery ferry, surface or airlift
   d. Delivery by USG or Purchaser?
   e. Desired in-country delivery rate (how many per month)

7. Missiles/ECM Pods/Bombs/Ammo:
   a. Type
   b. Quantity
   c. Initiate Spares.
   d. Support Equipment (Standard/Developmental).
   e. Furnish definitive list on AF Form 425 or make line item subject to provisioning conference.

8. Anticipated LOA Acceptance:

9. Operational Concept:
   a. Number of Squadrons.
      (1) Number of aircraft per squadron.
      (2) Anticipated flying hours per aircraft per month.
   b. Number of Main Operating Bases (MOB). Number of Squadrons at each MOB.
   c. Number of Forward Operating Bases (FOB).
      (1) Number of aircraft to be supported at each FOB.
      (2) Estimated time aircraft will be supported at each FOB.

10. Maintenance Concept (see Note 1):
   a. Organizational and Intermediate Level (O&M).
      (1) Number of sets of Organizational Support Equipment.
      (2) Number of sets of Intermediate Support Equipment.
   b. Depot Level.
      (1) Number of sets of Depot Level Support Equipment.
      (2) Identify systems to be supported.
   c. Level and amount of required technical data.
   d. Assumptions regarding present maintenance capability.

11. Supply Concept (see Note 2):
   a. Number of years initial spares should cover.
   b. Anticipated special requirements (identify).

12. Contractor Engineering and Technical Services (CETS) (see Note 3):
   a. Number of persons required.
   b. Speciality required (e.g., airframe, engine, avionics, supply):
   c. Time period required:

13. Weapon Systems Logistics Officers (WSLO)/System Acquisition Officer (SAO):
   a. Number required:
   b. Time period required:

14. Training Concept:
   a. Number/type aircrew member requiring CONUS training (Pilot, NAV, EWO, WSO, Flt Eng ER).
      (1) Student Background--type aircraft flown, number hours, etc.
      (2) English language capability.
      (3) Type mission to be qualified for air-to-air, air-to-ground, all weather intercept.
   b. Number/type maintenance personnel requiring CONUS training (breakout by AFSC).
      (1) Student background (type aircraft/system).

(2) Training level desired: organizational, intermediate or depot.
(3) Required CONUS completion date.

c. Mobile Training Teams (MTTs).
(1) Duration required.
(2) Recommended composition.

d. Training Devices.
(1) Quantity.
(2) Weapon system simulators.
(3) Mobile Training Sets (maintenance).
(4) Other (attach description).

15. Insurance:
a. Purchaser will arrange own insurance.
b. Ground and flight risk.
c. High flight third party.
d. Maritime.

16. Quality Assurance:
a. Air Force.
b. Other services.
c. Consultants.

17. Other Pertinent Remarks:

Note 1. AF Manual 66-1 is the established baseline for Maintenance procedures.

Note 2. AF Manual 67-1 is the established baseline for supply procedures.

Note 3. CITS requests must contain information requested for a "G" case, Chapter 4, AFM 400-3.

Source: AFM 400-3(R), Attachment 8, 17 February 1976.

APPENDIX F

IAF MAINTENANCE CONCEPT

The present IAF maintenance concept consists of three levels of maintenance organization as follows:

1. Organizational Level

The technical personnel at the organizational level are under direct authority of the squadron commander. They are responsible for the daily servicing actions, troubleshooting and repairs down to replacement of subsystems (LRV Line Replacement Unit)

2. Intermediate Level

The technical personnel of the Intermediate Level are under the direct authority of the base maintenance squadron commander. The base maintenance squadron commander is in charge of and responsible for scheduled maintenance inspections, calibrations and repairs of LRV's standard structural repairs and some level of overhaul for defined accessories, modifications and installation identified as "Intermediate Level". The Maintenance squadron is divided into various divisions, each one has the responsibility of supporting the organizational level.

(a) A/C Division. All structural air frame repairs.

(b) Engine Division. Organizational and intermediate level maintenance of engines.

(c) Electrical and Instruments Division. All electrical and instruments systems, flight control system

and personnel safety equipment.

(d) Communications and Navigation Division. All communications and identification friend or foe (IFF systems)

(e) Electronic Warfare Division. Organizational and intermediate maintenance of electronic warfare systems.

(f) Weapon Delivery System Division. Organizational and Intermediate maintenance of weapon delivery systems.

(g) Armament Division. Organizational and intermediate maintenance of aircraft armament systems detachable equipment, guns munitions and external stores, ejection seats and related systems.

(h) Ground Support Equipment Division. Maintenance of all ground support equipment on base.

(i) Avionics Division. Organizational and intermediate maintenance of aircraft avionics systems.

3. Depot Level

The depot level is responsible for major modifications and repairs overhaul of A/C engines, accessories and instruments. The performance of this maintenance level takes place in three different units.

(a) A/C and System Depot Unit. Overhaul of the airframe, including aircraft electrical, hydraulic and pneumatic systems maintenance.

(b) Electronic Equipment Depot Unit. Perform depot maintenance for all electronic systems.

(c) Local Industry. Perform depot maintenance for various systems by contracts with IAF through the Israeli DOD.

APPENDIX G

MAIN SUBJECTS THAT MUST BE REFLECTED IN THE LOA

1. Aircrafts

   Number of aircraft, types, schedule for delivery.

2. Aircrafts configuration

   Definition of the basic configuration.

3. Modifications and retrofits

   The peculiar modifications and retrofits that are needed to be able to perform on the basic configuration.

4. Ground support equipment

   The types and amounts of ground support equipments (GSE) for each one of the maintenance level.

5. Trainers and training aids

   The trainers and training aids equipment that should be procured either for aircrew cr maintenance crews.

6. Training program

   The training program for aircrew and maintenance crew should be included in the LOA.

7. Publications

   Procurement of the publications either of the A.F. or the contractor for aircrew and maintenance crew.

8. CETS

   Contractor's Engineering and Technical Support include a team of experts from the prime contractor facilities. This team of experts will assist the initial deployment tasks in country.

9. USAF Support

The support of USAF consists of technical assistance agreement include depot maintenance during the first period of deployment.

10. Provisioning

The provisioning concept should be based on the IAF maintenance and logistic concept and on IAF scheduled flight hours per provisioned period.

11. Implementation Concept

The procedure to carry out the acquisition process by both sides.

12. Shipments and Ferry

The method and procedures for shipment and ferry of the systems.

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3. Alex Peled, Lt. Col. Director of the A.F. branch of MOD.

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