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"RAMP-TO-RAMP" TRANSFERS OF FOREIGN MILITARY SALES AIRCRAFT AND RELATED LOGISTICS PROBLEMS

THESIS

Lewis J. Edwards, Captain, USAF

AFIT/GLM/LSR/91S-16

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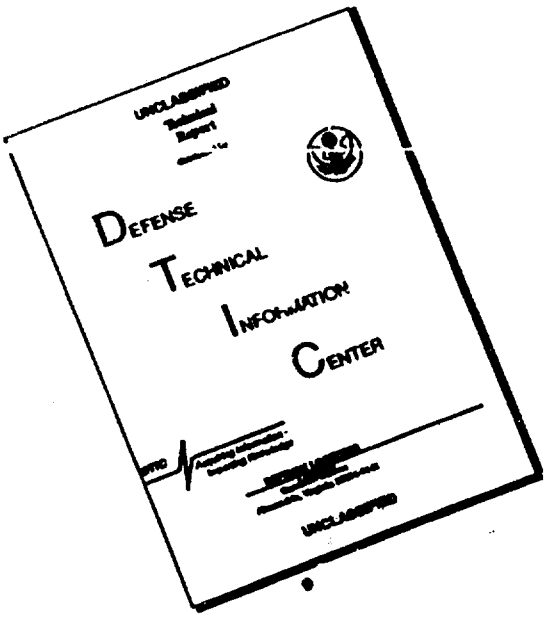

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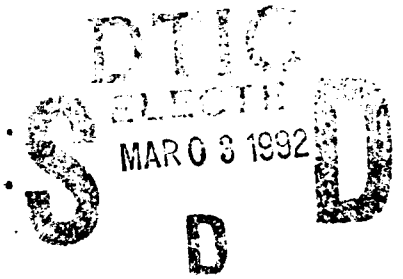

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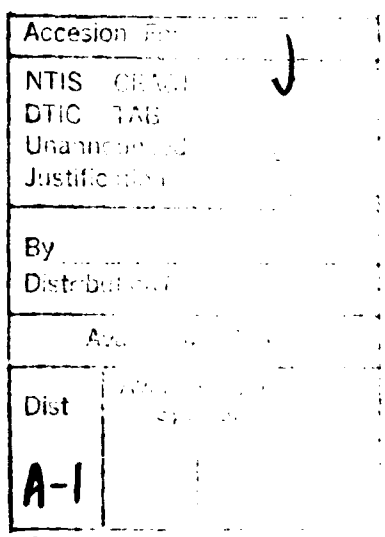

AFIT/GLM/LSR/91S-16

"RAMP-TO-RAMP" TRANSFERS OF FOREIGN MILITARY SALES AIRCRAFT AND RELATED LOGISTICS PROBLEMS

THESIS

Presented to the Faculty of the School of Systems & Logistics
of the Air Force Institute of Technology
Air University
In Partial Fulfillment of the
Requirements for the Degree of
Master of Science in Supply Management

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September 1991

Approved for public release: distribution unlimited

Preface

This study examined the effectiveness of the "ramp-to-ramp" concept of aircraft transfers to the governments of allied and friendly nations through the Foreign Military Sales (FMS) Program. The primary goal of this concept was to deliver the aircraft to the FMS countries earlier and at a lower cost. Under this concept, the costs associated with storage and removal from the Aircraft Maintenance and Regeneration Center (AMARC) were avoided. Procurement leadtime and availability of support equipment proved to be an important limiting factor in the timely execution of "ramp-to-ramp" transfers.

This thesis is the collection of many people's efforts. My thesis advisor, Maj John Stibravy, was extremely helpful. I appreciate his guidance and patience. I am grateful to all the people at HQ AFLC, the International Logistics Center, San Antonio ALC, and HQ USAF for their help. From the Pentagon, Col Tom Burch and Lt Col Paul Schonenberg added their years of experience in FMS to this study.

I want to acknowledge the support of my fellow students and the AFIT faculty and staff. Their willingness to listen and help in staying the course were invaluable throughout this study.

The greatest debt of gratitude goes to my wife, Barbara, and our children, Jesse and Josephine. Their confidence and understanding helped me make it through times when I was more a tenant in our home than a contributing member.

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Abstract

This thesis examined the concept of "ramp-to-ramp" aircraft transfers in the Foreign Military Sales Program. Avoidance of storage costs was the major benefit of this concept, and the lack of support equipment and spare parts are the major drawbacks. Planning and coordination, logistical problems, and conflicting USAF regulations, programs, and policies were examined to determine the effect each had on the "ramp-to-ramp" transfer of the last remaining F-5 aircraft to FMS countries. A study of background papers, electronic messages, minutes from meetings, and published articles was used to develop an understanding of the organization and planning process involved with the "ramp-to-ramp" transfer of aircraft. Personal interviews described strengths, weaknesses, and problems. The concept worked better in theory than in practice. The lack of sufficient support equipment to accompany delivery of the aircraft was the most limiting factor. Political considerations, lack of logistical planning tools, and conflicting organizational goals reduced the effectiveness of "ramp-to-ramp" transfers. The problems associated with the "ramp-to-ramp" concept can be alleviated through better management of support equipment, the reconciliation and merging of organizational goals, a systematic view of FMS, and modernization of the weapon systems in the forces of allied and friendly nations.

"RAMP-TO-RAMP" TRANSFERS OF FOREIGN MILITARY SALES AIRCRAFT AND RELATED LOGISTICS PROBLEMS

I. Introduction

This thesis will focus on a developing Foreign Military Sales concept referred to as "ramp to ramp" aircraft transfers. The United States Air Force (USAF) used this concept in the 1988/89 sale of F-5 aircraft under the Foreign Military Sales Program. This thesis will explore the strengths and weaknesses of the "ramp to ramp" concept as related to the sale of the last USAF F-5s to the governments of Brazil, Honduras, Morocco, and Tunisia. Department of Defense and U.S. Air Force regulations, policies, and programs will be examined to determine how they either help or hinder the goals of the Security Assistance Program.

General Issue

Foreign Military Sales of Operational Aircraft. In 1989, the U.S. sold the remaining operational USAF F-5 aircraft to the governments of Brazil, Honduras, Morocco, and Tunisia using the "ramp to ramp" transfer. These aircraft were not processed through the Aircraft

Maintenance and Regeneration Center, but delivered, after repairs and modifications, in operational status directly to the foreign governments. Air Force Logistics Command (AFLC), and specifically the International Logistics Center (AFLC-ILC), experienced varying levels of problems in putting together sufficient quantities of spares, support equipment (SE), and cartridge activated/propellent activated devices (CAD/PAD) to accompany the sale.

Background. Federal budgets of the 1980s provided funds for modernization throughout the Department of Defense. The apparent end of the cold war in late 1989 and early 1990 halted the previous generous budget trends, and Congress mandated that the Department of Defense reduce spending. An element of the USAF's planning to reduce total expenditures was to reduce the size of the force and to streamline operations into a more effective organization. The effects of this reduction in both manpower and weapon systems were expected to cause the early retirement of significant numbers of aircraft from the active USAF inventory. It was also anticipated that as these aircraft were withdrawn from the inventory that many of them would become available for the Foreign Military Sales Program (23:100-101).

Prior to January 1989, the standard procedure for aircraft phase-out placed the aircraft in storage in the Aircraft Maintenance and Regeneration Center (AMARC) facility at Davis Monthan Air Force Base, Arizona. Eventually, some of the aircraft were taken out of storage and sold to the governments of allied and friendly nations (23:101).

The same budget constraints that caused the planned reduction in the size of the USAF also reduced the money allocated to allied and friendly foreign governments through Security Assistance for the Foreign Military Sales Program. In January of 1989, Headquarters, USAF, published a new concept for transferring aircraft under the Foreign Military Sales Program. This new concept of "ramp to ramp" transfer avoided the storage of aircraft at the Aircraft Maintenance and Regeneration Center by delivering the aircraft directly from the active USAF inventory to the government of the allied or friendly nation (23:100).

During his tenure as Air Force Chief of Staff, General Larry Welch directed that all sales to FMS Customers use the "ramp to ramp" procedure and avoid the additional expense of AMARC storage (19). During a visit to Morocco in November 1989, General Welch expressed his desire to transfer aircraft to all FMS Customers at the lowest possible cost and in doing so to increase the perceived value of U.S. sponsored Security Assistance (11).

Specific Problem

The strengths and weaknesses (advantages/disadvantages) of the "ramp to ramp" concept used for the 1988-89 F-5 sale to Brazil, Honduras, Morocco, and Tunisia were not considered from a systematic viewpoint. USAF regulations, policies, and programs often conflicted with the goals of the Security Assistance Program.

Research Objectives

The first purpose of this thesis was to identify the strengths and weaknesses of the "ramp to ramp" concept associated with the 1988-89 sale of F-5 aircraft to Brazil, Honduras, Morocco, and Tunisia. The second purpose was to identify Department of Defense (DOD) and USAF regulations, policies, and programs that significantly affect the "ramp to ramp" concept and those that may conflict with the goals of the Security Assistance Program.

Research Questions

1. What offices and individuals were instrumental in the 1988-89 "ramp to ramp" sale of the F-5 aircraft?

2. What logistical considerations were unique to the 1988-89 sale of F-5 aircraft and directly attributable to the "ramp to ramp" concept?

3. What DOD/USAF regulations, policies, and programs conflict with the goals of the Security Assistance Program?

Definitions

Aircraft Maintenance and Regeneration Center (AMARC) (commonly referred to as the "boneyard") is located at Davis Monthan AFB. Arizona. This is the retirement home for USAF aircraft as they retire from the active inventory. There is substantial cost involved with both preparing an aircraft for storage. and for maintaining that aircraft while in storage.

Cartridge Activated Devices/Propellant Activated Device (CAD/PAD) are common explosive items associated with the egress (ejection seat) system of an aircraft. This class of items includes the explosive charge that blasts the pilot and seat from the aircraft. the rocket that propels the pilot and seat up and away from the aircraft. and the small charge that separates the pilot from the seat. CAD/PAD is commonly associated with. but not limited to. the egress system..

Foreign Military Sales (FMS) are the sale of defense goods and services to allied and friendly governments under provisions of Security Assistance.

"Ramp to Ramp" Aircraft Transfer is the practice of selling operational aircraft directly to the governments of allied and friendly nations. and avoiding the cost of AMARC storage. The aircraft are commonly removed from active USAF inventory and

flown directly to the buying country. Often. extensive repairs are performed at U.S. Depots at the expense of the FMS Customer.

Security Assistance consists of all those activities conducted under the authority of the Foreign Assistance Act of 1961 and the Arms Export Control Act of 1976.

Support Equipment (SE) consists of start carts. ground heating and air conditioning units. test equipment. and all other hardware necessary to operate and service an aircraft. The cost of SE is usually a very significant portion of the total FMS expenditure for aircraft.

Scope

The scope of this research will be limited to the 1989 sale of the last of the F-5 aggressor aircraft to the governments of Brazil. Honduras. Morocco. and Tunisia. Sales of other aircraft will be mentioned to illustrate certain aspects of the "ramp to ramp" concept.

Benefits of This Research

The findings of this research will identify problem areas. regulatory conflicts. and areas for improvement in the transfer of aircraft under the "ramp to ramp" concept. Improvements in the

overall transfer process will better meet the objectives of the Foreign Military Sales Program. Given favorable circumstances and conditions, the "ramp to ramp" concept may result in more aircraft available to the FMS program at a cost that is realistic to the governments of allied and friendly nations. A substantial savings is possible to the buying government. In effect, each dollar will buy more warfighting capability, and smaller FMS allocations will deliver greater value to the recipient nations. Savings generated by efficient "ramp to ramp" transfers can help DOD's contribution to a reduced national budget and minimize potential negative effects on security assistance and foreign policy.

Chapter Summary

Chapter I introduced the "ramp-to-ramp" concept of aircraft transfers. It described logistical problems associated with this concept and proposed research objective and questions. Chapter I defined terms peculiar to Foreign Military Sales and Security Assistance and described the scope and benefits of this research project.

Overview of Thesis

Chapter II presents Methodology. It will describe the procedures employed in this thesis to develop the research objectives and answer the research questions.

Chapter III is a Literature Review. It will provide information concerning the sale of aircraft, support equipment, and associated articles under the Foreign Military Sales Program. More specifically, it relates documentation on the "ramp to ramp" concept and AMARC method of transferring aircraft to the governments of allied and friendly nations. Different requirements for logistically supporting those two methods are discussed based on personal interviews, electronic messages, minutes of meetings, various background papers, and briefings.

The second portion of this literature review will examine specific Department of Defense (DOD) and United States Air Force (USAF) regulations, policies, and programs that conflict with the goals of the Security Assistance Program.

Chapter IV is the Findings and Conclusions. It will summarize and discuss information resulting from interviews with Air Force officers and DoD civilian employees relating to the research objectives and questions. Officers and civilian employees from HQ AFLC, AFLC-ILC, the Pentagon and USAF depots provided this information.

Chapter V gives Recommendations and will discuss the findings and propose possible applications for the information developed in this study.

II. Methodology

Overview

The research objective was developed through a combination of literature review and personal interviews. According to Business Research Methods by Emory, a literature review is a valid research technique to relate previously published information, and is a starting point to discover other sources of information. A literature review, being secondary data, conserves both time and money. Information developed by other individuals and organizations is used to substantiate the current project. The collection of primary data is beyond the scope of many research projects. Government agencies purposefully collect and publish primary data to aid research efforts. The bibliographies of published research may provide road maps to guide new research in the same field (12:140).

Personal interviews, according to Business Research Methods by Emory, bring the knowledge and expertise of individuals working in the field to the research project. The quality of information collected through personal interviews is much better than that collected through mail surveys or telephone interviews. Greater depth and detail can be reached through personal interviews than by other interview methods.

The interviewer has the ability to control the time and setting of the interview. Respondents can be screened prior to the interview

to determine if they are qualified to provide adequate information. A prime advantage of the personal interview is that the interviewer can adjust the interview process to better match the characteristics of the respondent. The interviewer can observe the effects and problems that the questions are having and make adjustments to the interview process to compensate.

In personal interviews, the respondent should be capable of answering the questions, understand his or her role in the process, and be willing to cooperate. The interviewer should be careful not to bias the responses. However, the interviewer may explain what type of answer is desired, the level of detail, and in what terms the answer should be expressed (12:160).

Methodology

The following steps were taken to adequately identify the strengths and weaknesses associated with the 1988-89 "ramp to ramp" transfer of F-5 aircraft to the governments of Brazil, Honduras, Morocco, and Tunisia:

Research Question #1. (What offices and individuals were instrumental in the 1988-89 "ramp to ramp" sale of the F-5 aircraft?) was answered through a literature review.

The people chosen for experience surveys and interviews were directly involved with the 1988/89 "ramp-to-ramp" transfer or

were in positions to influence the planning process. In the case of the Pentagon interviews, the officers interviewed possessed corporate knowledge of "ramp-to-ramp" transfer, had extensive firsthand knowledge of the effectiveness of the concept, and had opportunities to view the "ramp-to-ramp" concept from several viewpoints.

Research Question #2. (What logistical considerations were involved in the 1988-89 sale of the F-5 aircraft and directly attributable to the "ramp-to-ramp" concept?) was answered by experience surveys, and personal interviews.

Research Question #3. (What DOD/USAF regulations, policies, and programs conflict with the goals of the Security Assistance Program?) was answered by personal interviews and literature review of DOD and USAF regulations.

Chapter Summary

Chapter II presented the methodology. It described the procedures employed in this thesis to develop the research objectives and answer the research questions. The next chapter presents the literature review. It will provide information concerning the sale of aircraft, support equipment, and associated articles under the Foreign Military Sales Program.

III. Literature Review

Introduction

The first portion of this literature review provides information concerning the sale of aircraft, support equipment, and associated articles under the Foreign Military Sales Program. More specifically, it relates documentation on the "ramp to ramp" concept and AMARC method of transferring aircraft to the governments of allied and friendly nations, and the different requirements for logistically supporting those two methods.

The second portion of this literature review examines Department of Defense (DOD) and United States Air Force (USAF) regulations, policies, and programs that conflict with the goals of the Security Assistance Program.

Topic Statement

The regulations and policies of the Air Force Logistics Command minimize surplus and promote the most cost effective use of scarce U.S. resources in support of U.S. requirements (22). The logistics required to accompany a "ramp to ramp" aircraft transfer run contrary to present Air Force Logistics Command regulations and policies (23:101).

Air Force Logistics Command did not have adequate lead time or regulatory flexibility to properly plan and provide spare parts and support equipment packages to complement the sale and delivery of aircraft from recently deactivated USAF inventories directly to the governments of allied and friendly nations (14).

Justification

The Air Force Logistics Command/International Logistics Center at Wright-Patterson AFB, Ohio, is responsible for supporting aircraft and aircraft subsystems of U.S. origin operated by the governments of allied and friendly nations. The Vice Commander and the Director of Plans and Policy of Air Force Logistics Command/International Logistics Center requested a study to document the strengths and weaknesses associated with the 1988-89 "ramp to ramp" sale of the USAF's remaining F-5 aircraft through the Foreign Military Sales Program (14).

AFLC-ILC and other DoD agencies will use the information developed or discovered by this study to help in planning future aircraft transfers (14).

Scope

This review presents documentation concerning the sale of the USAF F-5 aggressor squadron aircraft which were deactivated between February and September 1988 (2:2). Supporting and

clarifying information was extracted from Department of Defense (DOD) regulations and publications. USAF regulations. and military and professional journals. This thesis contains documented conversations and interviews with key participants who participated in the planning and execution of the F-5 aggressor aircraft sale within the USAF and Department of Defense. Any evidence of future sales with similarities to the F-5 aggressor squadron aircraft sale is also presented (8).

Method of Treatment and Organization

This review presents minutes of meetings. electronic messages. talking papers. and documented interviews in chronological order. to partially illustrate planning for the sale of the F-5 aggressor squadron aircraft. An article from the Defense Institute of Security Assistance Management Journal elaborates on the differences between the two methods of transferring aircraft to the governments of allied and friendly nations.

An examination of DOD and USAF regulations identifies policies and programs that affect and may conflict with goals of the Security Assistance Program.

Discussion of the Documentation

A background paper was prepared on 29 February 1988. as general information for the F-5 community. by Headquarters. USAF. This

paper detailed aspects of F-5 spares and equipment and made several observations on the management of the Foreign Military Sales Program.

-Logistics support for retiring USAF assets is achievable.
-Problems have occurred because the appropriate decision makers have not understood in detail how the system works....(25:6)

The text alluded to the reduced security assistance budgets and the Department of Defense's desire to offer "surplus" equipment to fill the gulf between budget shortages and the foreign government's perceived needs (25:1).

The process of curtailing spare parts and support equipment procurement prior to phase out was discussed. Conclusions indicated that the present system must change to incorporate the phase out of aircraft, Foreign Military Sales, and continued logistical support for the aircraft while operated by governments of allied or friendly nations (25:7). The entire text of the background paper is shown as Appendix A.

On 8 March 1988, Director, Material Management at the San Antonio Air Logistics Center issued a message which stated all that was known about the unprogrammed phase out of the F-5 aggressor squadron aircraft. The text of the message covered the announced force structure changes, aircraft status, financial commitments to F-5 modifications and spares, and a proposed meeting sponsored by AFLC/Logistics Operations Center. Topics for proposed meeting were as follows:

1. Future usage (of F-5 aircraft)
2. Aircraft Transfers
3. Long Term Storage
4. Aircraft Modifications
5. Aircraft Sales
6. Disposition of Damaged Aircraft
7. Longeron Repair Strategy (8)

The full text of this message is shown as Appendix B.

A message dated 18 April 88 from Air Force Logistics Command/MI acknowledged the need to find an alternative method, other than storage at the Aircraft Maintenance and Regeneration Center, of transferring aircraft to Foreign Military Sales countries. The need for high level USAF management decisions and directives was recognized due to the many agencies involved in such a policy change (16:1). This message is shown as Appendix C.

Minutes of F-5 Disposition Conference, San Antonio Air Logistics Center, Kelly AFB TX, dated 15-16 Nov 88, identified Honduras, Brazil, Thailand, Tunisia, and Morocco as the countries that would purchase the F-5 aggressor squadron aircraft. Large numbers of the aircraft were identified as needing upper cockpit longeron replacement at the depot maintenance facility located at RAF Kemble prior to delivery to the buying country. Problem areas discussed at this meeting were as follows:

1. F-5 Peculiar Spares
   a. Inability to identify F-5 peculiar spares
   b. Spares are not centrally managed
2. F-5 Peculiar Support Equipment
   a. Inability to identify F-5 peculiar support equipment
   b. Support equipment not centrally located
3. Depot Level repair prior to delivery to foreign government buyer
   a. Storage costs
   b. Point in time of ownership transfer
   c. Reimbursement of AFLC expenditures through the Foreign Military Sales Program
   e. Item management responsibility after the sale
4. Cartridge activated devices/propellent activated devices
   a. Long lead times
   b. Small production capability/few manufactures
   c. No supply replacement requests in the system for aircraft at phase out
   d. Plan to match/change delivery of CAD/PAD to follow aircraft to FMS country after the sale
5. Failure to bring all affected/involved agencies into information/planning loop (24:100-101).

A 15 May 1990 message provided Defense Logistics Agency organizations phase down information for the F-4 (Phantom) aircraft system. The USAF planned to reduce the numbers of operational F-4

aircraft from 1210 to 534 by Oct 90, to 94 by Oct 92, and to 5 by Oct 95. On hand stocks of all F-4 peculiar items were reduced to 50% and all procurement and contracting actions were reviewed for termination (8). The complete text of this message is shown as Appendix D.

In an article published in the Summer 1989 issue of the Defense Institute of Security Assistance Management (DISAM) Journal, Lt Col Paul Schonenberg described two different methods of transferring aircraft to the governments of allied and friendly governments (23:100)

The first, and currently favored, method involved storing the aircraft in the Aircraft Maintenance and Regeneration Center at Davis Monthan AFB AZ and then taking it out of storage when it was sold to a foreign government. The other, called a "ramp to ramp" transfer, was a new concept where aircraft are withdrawn from active USAF inventories, declared excess to the needs of the USAF, and delivered directly to the governments of the buying nation. The costs of storing and removing aircraft from storage at the Aircraft Maintenance and Regeneration Center were relatively expensive compared to the basic cost of the aircraft. Many times, the storage costs put the aircraft financially out of reach of the Foreign Military Sales Program countries. The "ramp to ramp" transfer bypasses the additional cost of storage at the Aircraft Maintenance and Regeneration Center, but has problems with adequate logistical

support to accompany the aircraft to the buying country (23:101-104).

When a decision was made to phase out an aircraft from the active inventory under the storage concept, procurement for spares and support equipment diminished and eventually ceased. The aircraft were transferred to the Aircraft Maintenance and Regeneration Center for storage. When these same aircraft were offered for sale under the Foreign Military Sales Program, there existed very limited or no peculiar spares or support equipment. The buying country then entered into a contract with the U.S. Government to buy the aircraft, pay the storage costs, and wait the lead time for the production of peculiar spares and support equipment (See Figure 1) (23:102-103).

The "ramp to ramp" concept eliminated the storage expense but suffered from the diminished procurement and replenishment policies experienced during the time period between the announced phase out and the actual offer for sale (See Figure 2) (23:102).

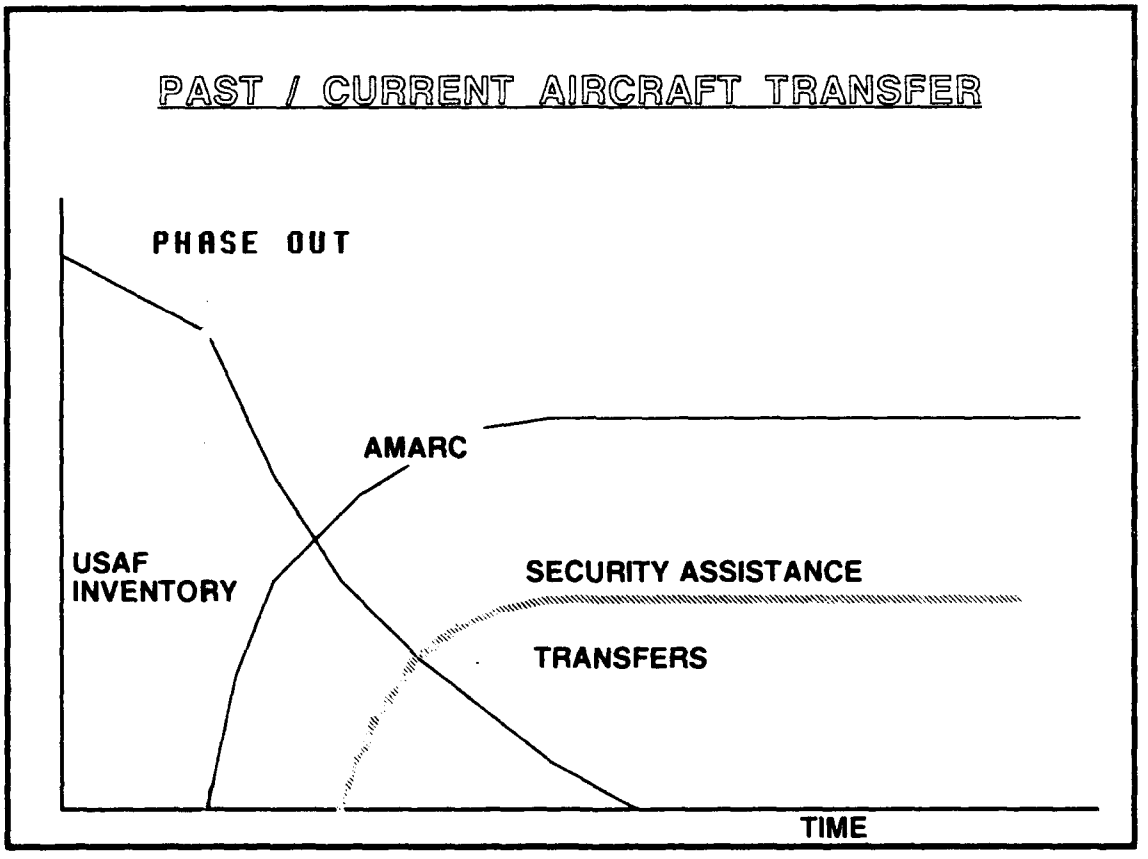

Figure 1. Past/Current Aircraft Transfers (23:102)

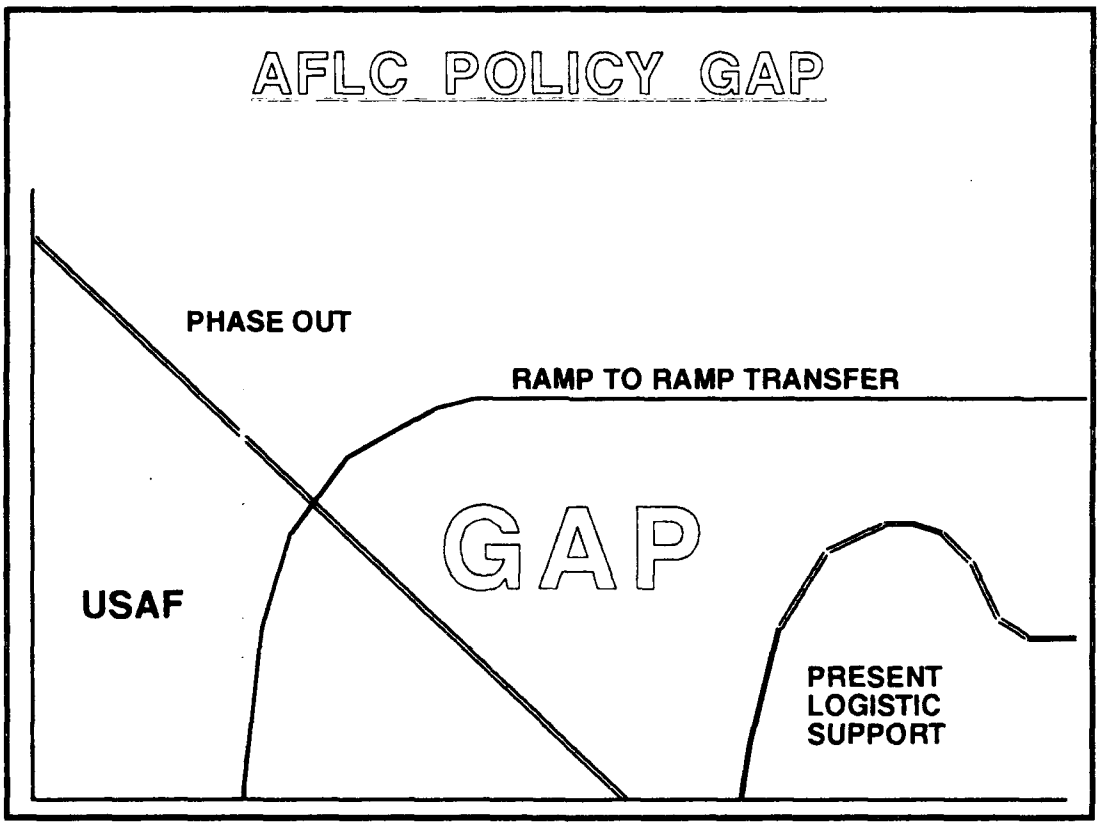

Figure 2. AFLC Policy Gap (23:102)

Regardless of the procedure for transfer, by the time an aircraft system was phased out of the active USAF inventory, all the support equipment was usually beyond its economically supportable lifetime (23:103).

The Implications and Effects of the DO-41 System on Inventory Availability to Support Foreign Military Sales

A major shortfall of the "ramp to ramp" concept is that prior to the withdrawal of aircraft from the active service, spare parts and support equipment inventory levels are forced downward to the absolute minimum. From the viewpoint of AFLC, this is the optimum position. A generic quote within AFLC describes the "best" thing to happen to "old airplanes" as:

> When each airplane makes its last flight and lands, the airframe turns to dust, the engines melt into scrap, there are no spares anywhere in the system, and all support equipment is compatible with and needed by other systems.

The requirement to reduce inventories and the mentality as quoted above creates a hardship for future Foreign Military Sales. This is true whether the aircraft are sold directly to foreign governments or processed through AMARC. In the case of direct sales, there are not enough spares or support equipment to support sales to multiple locations, or to governments not currently operating the particular aircraft. Eventual sales from AMARC encounter long leadtimes for

manufacturing and unusually high prices due to small order size and retooling/setup costs.

The entire process that culminates in levels of inventory inadequate to support FMS sales begins with the federal budget. Under the Biennial Programming and Budgeting System (BPPBS), every weapon system is evaluated on its capability to perform its mission relative to the threat it was designed to counter. As a weapon system loses its ability to counter a threat, or newer weapons systems come on line to counter the same threat, that weapon system can no longer justify continued expenditures for maintenance, upgrades, and other forms of support. A reduced threat, or a reduced capability to counter a threat, will translate into lessened levels of flying hours funded through the Program Objective Memorandum (POM) process (18).

Each military Department and Defense Agency prepares and submits its POM to the Secretary of Defense every two years. The period covered by each POM submission is for the following six years. Until the recent reorganization (April 1991), HQ USAF/PRP, acting as chairman of the Air Staff Board, consolidated the inputs of over 450 Program Element Monitors (PEM) into the AF POM (18).

After several iterations of review and approval within Air Force channels, the AF POM is submitted to the Office of the Secretary of Defense (OSD). Once reconciled between AF and OSD, the AF POM is submitted to Congress as part of the President's budget. Congress may or may not approve all spending requests by the AF, and under

present circumstances the odds are most likely that the AF will only receive a portion of what was requested (10).

Eventually, funding will be passed down to the AF in the form of obligation authority. HQ USAF/XO/PR establishes the flying hour programs for each individual type of aircraft according to the amount of money in the budget for aircraft operations. This information is then passed along to HQ AFLC in the Quarterly Flying Hour Report (Q-K008). The Q-K008 is produced three times a year and displays the Total Aircraft Inventory (TAI), or the total number of aircraft to support during the next four months (8). HQ AFLC/XRI uses this information to compute numbers of spares to be bought to support all Active, Reserve, and National Guard aircraft through the DO-41 (17). Item managers then check current inventory levels against what is authorized to procure and place replenishment orders as needed and supported. (18)

The availability of recoverable consumption-type replenishment spares, or Repair Cycle Assets, is of critical importance to the follow on support of Foreign Military Sales. The DO-41 Program is the USAF's management system for recoverable assets and believed by many to be the logical starting place to modify inventory procedures for future FMS sales (15). Air Force Logistics Command Regulation AFLCR 57-4 (Recoverable Consumption Item Requirements System [DO 41]) tells how to compute requirements for recoverable consumption-type spares. Requirements and inventory levels computed by the procedures as described in AFLCR

57-4 reflect average material support needs and requirements for USAF operations (4:1-2).

In an overall attempt to ensure that all available assets are used before new items are procured, all available DOD assets are screened to preclude unnecessary acquisitions. Before an item can be placed on contract for acquisition, all stocks must be screened to determine if the need can be satisfied by "modifying excess inventories or other items, assembling excess components, obtaining assets removed as a result of modification programs, or requisitioning next higher assembly (NHA) excess" (4:1-5.c).

The DO-41 uses forecasted factors in requirements computations. These factors are based on the number of demands as a function of programmed flying hours, and range between 0 (zero) and 1 (15). *AFM 66-1 maintenance data and maintenance generated demand* for spares are the source of usage data (4:9-1.a). Usage and Past Program Data are reported to the DO-41 through the G004L (organic repair) and GO19F (contractor repair) (4:9-2.a). Usage data is compiled by the DO-41 system in the form of an eight quarter moving average. A record is maintained in the DO-41 system for each type usage and updated each quarter by adding the latest of current quarter's usage data and dropping the oldest quarter of usage data (4:9-2.c). The factors process is designed to compute factors quarterly and become available at the same time as the usage data. An equipment specialist (ES) working a DO-41 program can override the automated factors computation and insert qualitative factor during any computation cycle other than the initial cycle (4:9-15.c.).

Computed or assigned forecast factors derived from historical demand/usage data and past programmed flying hour programs are applied to the first quarter of each succeeding fiscal year and interpolated factors are applied to intermediated quarters (4:7-4.a-d.) according to future programmed flying hours as reflected in the Q-K008. Appropriate factors are used to compute the various projected quarterly requirements. Each quarter's program is multiplied by the related factor to determine the requirements for that particular quarter. Quarterly results are accumulated, rounded up to the next whole unit, then "deaccumulated" (4:7-4.f.)

Factors used in quarterly computations, either determined by the DO-41 programming or inserted by the ES, are listed as follows:

(1) Total organizational intermediate maintenance (OIM) demand rate - Used to compute OIM operational requirements.

(2) OIM depot demand rate - Used to compute OIM depot stock level (fixed) and the order and ship time (O&ST) portion of the OIM base stock level.

(3) OIM base repair rate - used to compute the base repair cycle portion of the OIM base stock level.

(4) Base condemnation percent - used to compute the number of base condemnations.

(5) Depot overhaul condemnation percent - used to compute the portion of the OIM operating requirements that will generate to the depot and be repaired or condemned at the depot.

(6) Base-processed percent - used to compute the portion of the OIM operating requirements that will generate to the base and be repaired or condemned at the base.

(7) Programmed depot maintenance/job routed (PDM JR) condemnation percent - used to compute the number of condemnations that will occur during the accomplishment of the PDR.

(8) Engine overhaul JR condemnation percent - used to compute the number of condemnations that will occur during the accomplishment of an engine overhaul program.

(9) Management of items subject to repair (MISTR) JR condemnation percent - used to compute the number of condemnations that will occur during the accomplishment of a NHA MISTR program.

(10) PDM non-job-routed (NJR) replacement percent - used to compute the number of reprables generated that will be removed during the accomplishment of a PDM program and shipped not repairable this station (NRTS) to another facility.

(11) Engine overhaul NJR replacement percent - used to compute the number of reprables generated that will be removed during the accomplishment of an engine overhaul program and shipped NRTS to another facility.

(12) MISTR NJR replacement percent - used to compute the number of reprables generated that will be removed during the accomplishment of a NHA MISTR program and shipped NRTS to another repair facility (4:7-4.e.).

The final results of the DO-41 computations are the DO-41 worksheet. This worksheet displays data relevant to a particular item. Information displayed on the worksheet covers the entire spectrum of where an asset may exist. There are at least 60 separate conditions listed where an asset may be accounted. Assets are shown as authorized number of day's worth of stock on hand at bases, at depots, at organic and contractor repair facilities, in repair cycle, in the pipeline between locations, and in shop flow. The worksheet also displays transit days, days for turn-in action, repair leadtimes, serviceable assets, WRM assets, due-in serviceable assets, unserviceable assets, and other assorted information that may be helpful to the ES in determining buy quantities (4:7-9.b.29).

For each of approximately 60 computations that appear on the DO-41 worksheet, there are an equal number of formulas and procedures. A representative example is the computation of the OIM Base O&ST Requirement.

> OIM Base O&ST Rqmt. The OIM base O&ST line represents that quantity of material to be on hand at the base to support the operating program during the requisitioning and receipt of serviceable assets from the depot to replace base NRTS and base condemnations that occur during the number of days in the O&ST. The OIM base O&ST requirements are computed for each quarter of the computation through 25 quarters as follows:
>
> (a) Divide the number of days O&ST by 90 to arrive at an O&ST factor. The results are carried to six decimal places.
>
> (b) Multiply the deaccumulated future OIM installed program by O&ST factor. Round the result to the nearest whole number.

(c) Multiply the results by the interpolated OIM depot demand rate. The results are carried to six decimal places. The integer portion is the O&ST requirement. The decimal portion is retained as part of the OIM base repair cycle requirement.

(d) If there is no base repair cycle (base repair cycle days are zero), the O&ST requirements will be rounded using the decimal positions. (4:7-9.n.)

An item of particular interest to the FMS world is found in the section of the worksheet titled "Other Requirements at Buy." The FMS cooperative logistics (CLSSA) stock level case additive requirement, as reported by the HO51 system, is listed. However, the inventory management specialist (IMS) has the capability to manually add, change, or delete the reported data (4:7-9, k.(2)). Some FMS countries believe that the CLSSA merely subsidizes the USAF during times of budget shortages and that FMS countries never have the assets on the shelf when needed (1:13-14).

The Air Force Audit Agency (AFAA) reviewed the historical and future flying hour program reports sent from bases to major commands, HQ AFLC, and HQ USAF for the time period Jun 87 through Mar 90. The findings indicated that due to the failure of major commands and HQ USAF to forward reports to HQ AFLC, requirements were either understated or overstated. From AFAA's estimates March 89 requirements were overstated by $86 million and requirements in March 90 were understated by $1.5 million. HQ AFLC countered that with the current system now in place and operational, the problem is solved. ALFC additionally commented that the AFAA overstated the scope of the problem based only on a significant deviation within one month. Despite differences of

opinion concerning the scope of the problem. HQ AFLC concurred with the intent of the audit and supported the AFAA's position that accurate reporting of flying hour program data is essential to the quality of the DO-41(3:3-9).

Discussions with people who work in AFLC Headquarters revealed a diversity of thoughts and comments on the DO-41 and how it may or may not relate to increased support for FMS. It may be possible to artificially elevate the levels of inventory for aircraft that are being phased out and are having fewer flying hours allocated. This may be accomplished by interjecting a dummy flying hour level into the DO-41 computations. This method would flow through the system with no noticeable change to the system and require no additional manual intervention (20). If the flying hour program is inflated to increase the retention of spares and support equipment, who pays for it? If a FMS country is willing to fund dummy flying hours to provide future spare parts for its FMS procurement of the airplanes, what is to stop the USAF from exploiting the stockage of spares similar to the way CLSSA stocks are used to supplement stocks of critical spare parts (14)? Many countries are critical of the way the USAF manages the CLSSA. Unless there is some firm assurance that the spares that they invest in will be protected from appropriation by the USAF, there will be little enthusiasm for an inflated DO-41 level from the FMS community.

The DO-41 drives the levels of recoverable consumption-type replenishment spares in the system. If Foreign Military Sales countries are to overcome the shortage of serviceable spares and

support equipment. the DO-41 system should be considered in the final solution.

Special Defense Acquisition Fund

The Special Defense Acquisition Fund (SDAF) was authorized by Chapter 5 of the Arms Export Control Act. The purpose of the SDAF is to fund the procurement of defense articles in anticipation of their sale to foreign governments under the Foreign Military Sales Program. The basic objective of the fund is to procure articles in advance of their need and reduce or eliminate the normal procurement leadtime (9:140001 A-B). Many times, support equipment items have procurement leadtimes equal to and exceeding 48 months (19). Items procured and held by the SDAF provide a ready supply of selected items and enhances the U.S. Government's ability to meet the immediate military needs of allied and friendly nations without negatively affecting the capability and material strengths of U.S. Forces (9:140001 B)

The Defense Security Assistance Agency (DSAA) has overall management responsibility for the SDAF. DSAA prepares the annual procurement plan, allocates funds, and countersigns Letters of Offer and Acceptance (LOAs) for SDAF articles. Implementing Agencies (IAs), and Departments of the Air Force, Army, and Navy, recommend articles for procurement and manage SDAF contracts. The Security Assistance Accounting Center in Denver manages the accounting

function for the SDAF and is the only activity authorized to disburse SDAF funds (9:140002)

The SDAF was initially capitalized by allocation of miscellaneous FMS funds. Funds are returned to the SDAF through the payments made on SDAF contracts through the IAs. Costs to manage and administer the SDAF are included in the FMS Budget (9:140003)

Before purchase by the SDAF, an item must meet specific criteria. Particularly, it must be available from current production, have significant projected FMS demand, have a long (over 24 months) procurement leadtime, and "be required to meet established acquisition objectives of U.S. Forces, if not transferred to meet foreign requirements" (9:140005).

In early 1991, DSAA determined that critical parts and support equipment for the F-5 could be purchased using SDAF funds (7). AFLC, AFLC-ILC and Kelly ALC (F-5 System Manager) have not determined the items most critical to the FMS F-5 community that meet SDAF procurement criteria. Because of the inability to accurately identify those items needed by the FMS countries, no procurement action had taken place as of June 1991 (6). DSAA may withdraw the SDAF funding for the F-5 due to inactivity. The lack of forecasting capability where extensive consumption data exist limits the use of SDAF funds.

Chapter Summary

This chapter provided information concerning the sale of aircraft, support equipment, and associated articles under the Foreign Military Sales Program. More specifically, it related documentation on the "ramp to ramp" concept and AMARC method of transferring aircraft to the governments of allied and friendly nations. Different requirements for logistically supporting those two methods were discussed based on personal interviews, electronic messages, minutes of meetings, various background papers, and briefings.

The second portion of this literature review examined specific Department of Defense (DoD) and United States Air Force (USAF) regulations, policies, and programs that conflicted with the goals of the Security Assistance Program.

The next chapter will present the Findings and Conclusions. It will summarize and discuss information resulting from interviews with Air Force officers and DoD civilian employees relating to the research objectives and questions. Officers and civilian employees from HQ AFLC, AFLC-ILC, the Pentagon and USAF depots provided this information.

IV. Findings and Conclusions

Research Question #1

What offices were instrumental in the 1988 "ramp-to-ramp" sale of the F-5 aircraft?

Three areas of responsibility were apparent in the planning and execution of the F-5 sale. Headquarters USAF (HQ USAF/PR) had overall responsibility (16). The International Logistics Center (AFLC-ILC) was responsible for the writing of the contracts, contract management, and data input. San Antonio ALC determined requirements and exercised systems management responsibility.

Research Question #2

What logistical considerations were involved in the 1988-89 sale of the F-5 aircraft and directly attributable to the "ramp-to-ramp" concept?

Various logistical problems surfaced throughout the course of the research. The most recurring observation was the shortage of support equipment, and the long leadtime for procurement (26:19; 5: 13; 21). Honeycomb parts were of particular difficulty due to the

lack of manufacturers (27). The shortage of spare parts was considered a problem, but of a lesser nature (26).

The "ramp-to-ramp" transfer was a policy decision by the Air Force Chief of Staff. The intent was to provide aircraft, through Foreign Military Sales, to the governments of allied and friendly nations at prices they could afford. The implementation of this concept caused planners to approach the logistical problems in a different way than transferring aircraft from AMARC storage. All logistical problems had to be resolved or considered on a much shorter timeline (19). "Ramp-to-ramp" caused a review of policies and practices by each agency involved in FMS (5). The "ramp-to-ramp" transfer of the F-5s revealed problems in delivering the aircraft and support packages in a compatible timeframe. Lt Col Angus MacDonald (SAF/AIPPW) briefed the new Air Force Chief of Staff of those problems in mid 1990 and requested AMARC storage once again become an alternative prior to aircraft transfer (19). The prohibition on AMARC storage was lifted. According to which method is better, planners may now use either AMARC storage prior to transfer or "ramp-to-ramp" transfers

The Special Defense Acquisition Fund (SDAF) may be used to purchase specified long leadtime items in anticipation of sales (26: 5: 19). Support equipment is the item most often associated with the use of SDAF. Procedures for forecasting and control of assets must be developed before large sums of SDAF monies are invested in FMS inventories.

Spare parts are not a major constraining factor in the "ramp-to-ramp" concept. As long as more than one aircraft is transferred, some aircraft can be used as sources for spares to keep the others flying (26).

The USAF will have smaller numbers of aircraft available for transfer in the future. U.S. budget cuts are causing the USAF to reconsider the retirement time of many of its active aircraft. Foreign buyers are realizing that newer generation aircraft, particularly the F-16, are more capable than aged aircraft (F-4s). The maintainability and reliability of newer generation aircraft has made the sale or give-away of older aircraft a less desirable option from the perspective of the foreign buyer. The future of FMS is in the sustaining of systems of U.S. origin currently operating in the military forces of foreign governments and new production sales (5).

Research Question #3

What DOD/USAF regulations, policies, and programs conflict with the goals of the Security Assistance Program?

The Air Force Logistics Command's Recoverable Consumption Item Requirements System (DO-41) reduces the number of spare parts available to Foreign Military Sales. The major players, HQ AFLC, HQ USAF/SECAF, and AFLC-ILC, in the coordination and planning of Foreign Military Sales all have differing goals and objectives. An effort to establish procedures to add FMS funded flying hours into

the DO-41 system failed due to procrastination and inactivity within AFLC-ILC. The initiative had the backing of the AFLC commander. however the delegation of responsibility for coordination and action was unclear. The program was shunted back and forth until evervone lost interest and the initiative was tabled. The differing goals and perceived benefit or loss to organizations created conflict and an adversarial role between the agencies and diminished the effectiveness of FMS support (28).

Chapter Summary

This chapter summarized and discussed information resulting from interviews with Air Force officers and DoD civilian employees relating to the research objectives and questions. Officers and civilian employees from HQ AFLC. AFLC-ILC. the Pentagon and USAF depots provided this information.

The next chapter presents recommendations and will discuss the findings and propose possible applications for the information developed in this study.

Transcripts of Pentagon interviews are shown in Appendix E.

V. Recommendations

Special Defense Acquisition Fund (SDAF)

The Special Defense Acquisition Fund (SDAF) can be used to procure long leadtime items in anticipation of future FMS sales. Due to the constraining nature of certain spare parts and especially support equipment, the SDAF should be used to alleviate the leadtime burden on FMS.

The USAF needs to use better forecasting methods for SDAF procurement projections. The Security Assistance Office (SAO) in each country, representatives of the FMS country, and AFLC-ILC need to develop a country unique profile based on geographic location, type of aircraft, perceived threat, aircraft mission, aircraft configuration, and future needs. This profile will enable planners to better identify the items most critical for SDAF procurement.

In a case where the delivery of SDAF procurement items does not match the delivery date for the aircraft sale, the SDAF items will need to be stored. The FMS country may elect to purchase the SDAF property as it becomes available and have it shipped to country in advance of the aircraft, or arrange for storage in the U.S. The advantage of in country storage is that it avoids additional storage costs. The advantage of U.S. storage is the delivery of support equipment, spares, and aircraft at the same time. The Letter of Offer and Acceptance (DD Form 1348) should detail the coordination

of storage and delivery. The optimum solution is to have delivery dates from the manufacturer match the date needed in the buying country.

Shipment directly from the manufacturer to the FMS country in the same time period as the aircraft will eliminate the storage problem.

Support Equipment

The primary constraint in the planning and execution of aircraft sales, either by the "ramp to ramp" concept or transfer from storage, is the availability of support equipment.

When a few aircraft are taken from several USAF, Air Force Reserve, or Air National Guard units and offered for sale through FMS, the need for the support equipment still exists at the former locations. In this case, support equipment to accompany the FMS sale must come from active, Reserve, or Guard units through a command levy. The command levy reduces mission capability of the U.S. units. In a situation where an entire U.S. unit is drawndown, all the support equipment is also available for sale through FMS. In either case, all of the aircraft rarely go to one country. Each country receiving an allotment of the aircraft may need a full compliment of support equipment, depending on whether or not they already operate the same type of system and the number of operating locations. A multiplier effect is created on the need for support equipment for each FMS country not presently operating the aircraft and for each new operating location.

Support equipment may be unique to a particular aircraft or weapons system or it may be common to several. Some support equipment that is used on B-52s, or other systems that are not available for FMS, could possibly be used with F-4s, F-5s, or F-16s, with little or no modification. A database of support equipment that cross references usage between aircraft and weapon systems can help FMS planners lessen the impact of support equipment leadtimes on Foreign Military Sales. HQ AFLC and AFLC-ILC should immediately begin efforts to develop a consolidated database that cross references the usage and applicability of all USAF support equipment.

Command Structure and Organizational Goals

Organizational self-interest reduced the effectiveness of FMS planning. Leaders of all organizations are, or should be, concerned about the mission and about the people in the organization. The "ramp-to-ramp" concept uncovered varying degrees of organizational protectionism. HQ AFLC and AMARC may have had less enthusiasm for "ramp-to-ramp" because of the negative results it had on the number of aircraft stored in the "boneyard" and the possibility of reduced workload and reduced number of jobs. HQ USAF planners favored "ramp-to-ramp" because it was more responsive, in theory, to potentially fast changing political considerations. AFLC-ILC and San Antonio ALC wanted to provide the best support possible to the

systems in the FMS countries within established boundaries. but were caught in the middle between HQ USAF and HQ AFLC.

Foreign Military Sales should be viewed from a systematic viewpoint. AFLC is organized to optimize the support provided to the USAF. In some cases. such as the DO-41 drawdown. policy does not benefit FMS. The Pentagon. being more sensitive to the political aspects of FMS. may not have the opportunity to fully consider the logistical implications of all decisions. AFLC-ILC's mission is to get the support to the FMS customer and may overlook the effects actions have on domestic forces. Each organization in the FMS structure wants to optimize its performance relative to its goals or perceived mission. The optimization of individual organizational goals in the FMS system may reduce the effectiveness of FMS programs.

The responsibility of FMS planning should be moved from the Pentagon to AFLC-ILC. HQ AFLC should review regulations. policies. and programs to eliminate those that directly conflict with Foreign Military Sales programs. The USAF should develop the attitude that the weapons systems placed in the hands of friendly and allied governments are not a drain on logistics support. but rather an extension of U.S. foreign policy and a potential source of U.S. built weapon systems. many in the hands of U.S. trained pilots supporting common national security interests.

Modernization of Forces

The U.S. Government, through FMS, should encourage the modernization of weapons systems in the inventories of our FMS customers to promote supportability and interoperability. Newer generation aircraft are noted for their much higher degree of reliability and maintainability. The actual war fighting capability and effectiveness of newer aircraft, particularly the F-15 and F-16, provides FMS countries more deterrent power for the dollar spent. The USAF should make an assessment of all FMS countries and develop programs to modernize the air forces of FMS customers. Modernization will eliminate the problems of supporting aircraft no longer in the USAF inventory.

Recommendations for Additional Research

In the course of this research project, several areas of discussion created more questions than they answered. Certain factors influenced the effectiveness of the "ramp-to-ramp" concept of transferring aircraft to FMS countries. On a larger scale, these same factors affect the overall capabilities of the Foreign Military Sales program. Three areas of particular interest merit additional research.

Support Equipment Database and Cross Referencing. Support Equipment, due to shortages and procurement leadtime, is the most constraining factor in FMS planning. Research dedicated to the

development of a centralized support equipment database is needed. The database should monitor the location, availability, applicability across weapon systems, and procurement leadtimes of USAF support equipment.

Impact of Conflicting Organizational Goals on the Effectiveness of Foreign Military Sales. Various DoD and other U.S. Government agencies either plan, execute, or influence the FMS program. Each of these agencies have organizationally unique goals and objectives, many of which either limit or defeat their ability to support the goals of the FMS program. Some people feel that advancing the goals of the FMS program can only be done at the expense of domestic forces. FMS goals have not been fully integrated into the U.S. defense structure. Research is needed to clearly identify the extent that conflicting organizational goals affect FMS support.

Development of Foreign Military Sales Forecasting Model. Pentagon level planners need a tool to provide better information to the political process on short notice. Often, planners are tasked with providing a feasibility assessment on the transfer of weapon systems and given very little time to prepare. Development of a computer model with capabilities similar to, or incorporating, Dyna-Metrics and Requirements Data Bank (RDB), but designed to consider FMS country unique factors, should be studied. Such a model may provide near real-time logistical assessments and provide more realistic input to the political process.

Appendix A: Background Paper on Logistics Supportability of Retiring Aircraft

BACKGROUND PAPER
ON
LOGISTICS SUPPORTABILITY OF RETIRING AIRCRAFT

PROBLEM

Congressionally mandated reductions in security assistance funds have spurred DoD efforts to use FMS transfer of "surplus" equipment to assist US allies and gain/maintain influence and DoD access to foreign facilities. Desired US objectives can be achieved through these means only if the condition, serviceability, and US logistics support of the "surplus" satisfies the expectations of the recipient country. Internal procedures and policy guidance designed to prevent waste of US resources reduce the supportability of retiring systems as they are phased out of the US inventory. This paper will discuss supportability issues and ongoing corrective efforts in this context.

BACKGROUND

Two available programs available for security assistance transfers

--Foreign Military Sales (FMS) - Sales of vehicles/aircraft/equipment, either new or used , paid for by foreign customer using foreign assistance credits or recipient country funds.

--Southern Region Amendment (SRA) - Transfer of surplus US equipment to certain designated countries. Assets are free, however, recipient countries pay transportation charges and refurbishing costs (if required).

- Logistics Support Critical to Success of DoD Initiatives

-- Recipient countries expect US logistics support in a timely manner for transferred assets

-- Logistics support problems reflect badly on US and can eliminate goodwill/quid pro quos hoped for by US

-- Logistics supportability of retiring aircraft systems require lead time

-- Logistics supportability of retiring systems driven by Program Document (PD) and Program Authorization (PA), flying hour UTE rate, normal supply consumption rates, and supply stock levels. Phased reductions begins as soon as retirement phase out identified in PD (24 months prior to phase out of aircraft/equipment is the norm). If the projected level of support for USAF

and known FMS customers exceeds established stock levels parts requisition stops.

-- When aircraft/equipment identified for phase out of USAF inventory into ARMARC, AFLC works to reduce logistics support costs to conserve scarce resources and prevent waste.

--- Unnecessary maintenance deferred

--- Retiring aircraft identified as source of spares for remaining aircraft

--- Spares procurement phased out with goal of zero spares balance in conjunction with phase out

--- Repair/buy of support equipment phased down

- Unanticipated FMS sales of retiring aircraft/equipment shocks the logistics support system at a time of decreased and declining logistics support capability.

-- Aircraft - Condition deteriorating (time remaining to PDM, deferred maintenance) while capability to make repairs reduced

-- Spares - Surge in demand for spares (1-2 year spares package normally requested) while stock level is decreased and declining

-- Vendor - Increased flying hours generates increased ongoing spares demand while source for supplies have decreased and are declining

-- Support equipment (SE) - Demand may exceed USAF ability to support

--- Support equipment in short supply worldwide

--- SE pooled within USAF flying wings insufficient, if dispersed, to support geographically separated locations

F-4 and F-5 are most likely candidates for FMS/SRA transfers near term

- F-4 transfers have already occured with more pending

-- 40 F-4E aircraft delivered to Turkey under SRA

-- 24 F-4D aircraft delivered to Korea under FMS

-- 69 F-4C aircraft offered to Greece under SRA

-- F-4E aircraft offered to Korea under FMS

- F-4 Support Equipment Summary

USAF Active/Guard/Reserve units 95% equipped

-- Average age of F-4 SE 20 years

-- Repair money limited

-- Conditions of assets in storage unknown

F-4 Surplus Support Equipment Availability

-- All-Aircraft Common (118 items required to support aircraft regardless of type) - no surplus, no projected surplus

-- F-4 Common (650 items common to all variants of F-4 aircraft) - sufficient surplus to support 4 squadrons now - surplus to support seven squadrons to become available after Guard/Reserve transfers 1989-1991

-- MDS Peculiar (450 items + or - 10% required by specific aircraft variant i.e., F-4C, F-4D, and F-4E) - no surplus presently available - surplus available only after complete deactivation or conversion of existing Guard/reserve squadrons

- F-4 Spares Status

-- 54 items presently in critical supply

-- No surplus spares available or projected to become available

--- Because of DPEM funds cuts reprable assets are only being repaired to fill USAF MICAP

--- Spares levels have been adjusted to reflect known USAF and FMS requirements. Requisitions have been curtailed to prevent excess items surplus to known requirements

- F-5 Surplus Support Equipment Availability

-- No present surplus

--No all-aircraft-common SE projected surplus (required by present users to support new weapon system after unit conversions)

-- F-5 Common and MDS peculiar SE to support 4-6 squadrons of geographically separated squadrons projected to become available dependent on unit deactivations

- F-5 Spares Status

-- No present surplus

-- Surplus may become available resulting from accelerated unplanned phase out of F-5 Fleet

Logistics Supportability Analysis for F-4E transfer to Turkey

- $50M equipment/spares required to support initial set up and Flying of 40 F-4E aircraft at location designated within Turkey

--AF/LE position has consistently been that there were insufficient spares and support equipment surplus to USAF requirements to logistically support this security assistance transfer

-- Sufficiency/Availability of $20M in assets identified by ILC/PRI questionable

--- No F-4E MDS peculiar support equipment included in ILC/PRI offer of "surplus"

--- Turkey has not received requested spares of support equipment to date

--- No all-aircraft-common support equipment available or projected at any time in the future

--- Reparable assets requisition delayed by USAF MICAP fills because of DPEM funds cuts

-- Spares/support equipment may be up to 36 months lead time away (if vendors can be found)

-- No F-4E MDS peculiar support equipment available until present US F-4E units deactivate

-- Four squadrons F-4 common support equipment are only equipment items available "surplus" at the present time

Logistics supportability analysis for proposed transfer to Greece

-- AF/LE has advised AF/PR this transfer can not be fully logistically supported until after deactivation/conversion of existing USAF F-4D units and has urged AF/PR to make sure all communication in this regard to Greece clearly makes this point

-- No support equipment offered by AF/PRI

- No all-aircraft-common support equipment available surplus or anticipated available in the future

-- Up to 4 squadrons of F-4 common support equipment could be made available to Greece if not obligated to Turkey

F-4D MDS Peculiar and additional quantities of F-4 common SE available only in conjunction with the deactivation of present Air Force/Guard/Reserve Units

- No spares available

Logistics supportability analysis for proposed transfer to Korea

- No all aircraft common support equipment available or projected.

- Complete set of common and MDS peculiar support equipment not assigned to USAF unit in Korea. F SE assets presently in Korea available for transfer after unit conversion unless designated for other use (i.e. transfer to Turkey to fill Turkish shortages) but are insufficient to fill Korean requirements.

-- Requested 12 month initial spares package and SE will require 36 months leadtime at a minimum to procure

-- AF/LE has strongly advised AF/PR this proposed transfer will not be completely logistically supportable as a turn key operation at the time of the conversion of the USAF unit in Korea to new aircraft. AF/LE strongly suggested the Korean government be so advised to prevent misunderstandings.

Status of subsystems -- no problems during past aircraft retirements

- Subsystems as old as aircraft

-- No USAF requirement for subsystems

Complete aircraft transferred with no need tp remove subsystems for other USAF uses

- No internal USAF policy to require AF/PR to consult AF/LE or AF/XO before AF/PRI offered aircraft for FMS sale

-- Status of subsystem can cause problems for current/future retirements of aircraft

--- Major upgrades have been made to avionics/electronic systems on aircraft during past decade

--- Some subsystems on retiring aircraft are more current that systems in the active forces (Example: retiring F-4Ds have AN/ALR 69 Radar Warning Receivers but active USAF A 10s have AN/ALR 46)

While airframes may be "surplus", subsystems on the aircraft are not necessarily "surplus"

USAF requirements to upgrade avionics

- SOF requirements for AN/ALR 69

A 10 requirements for AN/ALR-69

Other requirements under discussion

- Fiscally prudent to retain selected subsystems

- Bottom line - Not smart to give away items that USAF needs

Potential problems can be caused by subsystem removal for other use or USAF requirement for replacement-in-kind (RIK)

- Recipient country doesn't want aircraft with "holes"

- Recipient country may be unable to afford to pay for replacement systems for subsystems removed for AF use even if offered "replacement-in-kind"

- Competing requirements exist for some subsystems within the active USAF with no mechanics presently in place for resolving those issues

DISCUSSION

Logistics support for retiring USAF assets is achievable. Problems have occured because the appropriate decision makes have not understood in detail how the system works, what was achievable, and what factors needed to be worked to ensure logistics support of a given undertaking. AF/LE is working fixes based on these assumptions.

- Actions to date

- AF/LE Msg DTG 061816Z Jan 88 was first to put in writing the concept that subsystems on retiring aircraft need to be considered for "save" lists before being offered for FMS need

- AF/PRI is revising HOI 11-5. AF/LE has made substantial comments to include AF/LE in appropriate decision making efforts with sufficient leadtime to ensure logistics supportability

- AF/PRI has begun coordinating potential Security Assistance transfer programs (SRA and FMS cases) with AF/LE

Actions in work

- AF/LE working with AF/PR to promote a better understanding of how the logistics systems works, to identify limitations on support capabilities, and cost required to improve support

AF/LE analyzed F-4 support capability to quantify USAF capability to support squadron size units at geographically separated locations and provided the results of that analysis to AF/PR for consideration during planning meetings for security assistance transfers

- AF/LE working with AF/PR to identify options to support Turkey, Greece, and Korea

- AF/LE working with AF/PR to insure supportability problems are identified and addressed for security assistance transfers

- AF/LE anticipated the potential early retirement of F-4 aircraft in sufficient time to do a preliminary analysis of USAF capability to support security assistance transfer of USAF F-5 assets with the results used during ongoing planning for accelerated F-5 phase-out

- AF/LE, AF/PR, and AF/XO discussing new procedures to identify assets earmarked for FMS in the PD at the time the assets are identified for phase out of the USAF inventory to give AFLC the necessary tie and information to appropriately support the retiring system

- AF/LE and AF/PR discussing Logistics Supportability Analysis (LSA) requirements during the decision process leading to a FMS offer, to ensure identification/resolution of logistics support issues prior to decisions on FMS sales

- AF/LE, AF/PR and AF/XO developing procedures to plan, prioritize, and direct redistribution of subsystem assets on "surplus" aircraft to insure needed subsystems ate identified and appropriate actions taken during aircraft retirement to guarantee the cost efficient use of Air Force assets

CONCLUSION

FMS/SRA transactions projected and underway are frequently difficult to support logistically because the present system is designed to minimize surplus and promote the most cost effective use of scarce US resources in support of US requirements. While the system is somewhat flexible, it is not always able to respond rapidly to unprogrammed security assistance transfers which occur after decisions (undertaken appropriately at the time to conserve constrained US budget resources) have been made to draw down or phase out logistic support capability for retiring systems. AF/LE is working with AF/PR to provide the best possible support for security assistance transfers that are already on the books. Joint AF/LE, AF/PR, and AF/XO actions are underway to change bureaucratic procedures which have in the past impeded effective security assistance support and to improve future support.

RECOMMENDATION

None, for information only

Lt Col Schonenberg
AF/LEYYC, 74688
29 February 1988

Appendix B: F-5 Programming Action

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MSG 1186484                ************************
                           * UNCLASSIFIED*E F T O  *   DATE: 069
                           ************************   TIME: 1703

AFLC LOC WRIGHT PATTERSON AFB OH
OPR    TL-1
                                        THIS AGENCY TOTAL COPY COUNT
                                        THIS MESSAGE TOTAL COPY COUNT
PTTEZYUW RUVKAA7906 0691647-EEEE---RUVACMB
ZNY EEEEE
P 081300 MAR 88
FM DIR MAT MGT KELLY AFB TX//MMS
TO RUVAFLC/AFLC LOC WRIGHT PATTERSON AFB OH//TL//
INFO RHFGAAA/OLBC AFLC RAMSTEIN AB GE//LOC-LO//
RHDIAAA/HQ TAC LANGLEY AFB VA//LGM/LGS/XPP//
RUHUPAC/HQ PACAF HICKAM AFB HI//LGM/LGS/XPP
        /HQ USAFE RAMSTEIN AB GE//LGM/LGS/XPP
        /AFLC SGE RAF KEMBLE UK//CC//
        /HQ USAF WASHINGTON DC//LEYY/PRIA/PRIM//
        /TACSAO LANGLY AFB VA//PAF//
        /12AF BERGSTROM AFB TX//LGM/LGS//
        /3AF RAF MINDENHALL UK//LGM//
        /13AF CLARK AB RP//LGM/LGS//
        /AMARC DAVIS MONTHAN AFB AZ//CC//
        /DIR MAT MGT TINKER AFB OK//MMI//
        /DIR MAT MGT HILL AFB UT//MMI//
        /DIR MAT MGT MCCLELLAN AFB CA//MMI
        /DIR MAT MGT ROBBINS AFB GA//MMI//
        /405TTW LUKE AFB AS//CC/MA//
        /82FTW WILLIAMS AFB AS//LGS//
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PAGE 2 RUUKAAA7906 UNCLAS E F T O

/57FWW NELLIS AFB NV//CC/MA//

/5540SW NELLIS AFB NV//LGS//

/3TFW CLARK AB RP//CC/MA/LGS//

/10TFW RAF ALCONBURY UK//CC/MA/LGS//

/NAVAIRSYSCOM DET WSM NOTH ISLAND CA

/COMLATWINGPAC LEMORE CA

/STRKFITRON ONE TWO SEVEN NAS FALLON NV

ACCT AF-AC/JRF

UNCLAS : E F T O

SUBJECT: F-5 PROGRAMMING ACTIONS

1. WE ARE ALL ACUTELY AWARE OF THE RAPID CHANGES GOING ON IN THE F-5 WORLD. OUR INTELLIGENCE (GATHERED FORM VARIOUS UNCLASSIFIED SOURCES, BOTH FORMAL AND INFORMAL) HAS GLEANED INFORMATION ABOUT F-5 FORCE STRUCTURE WHICH BEGS SOME IMPORTANT QUESTIONS. THIS MESSAGE WIL SURVEY THE ANNOUNCED FORCE STRUCTURE CHANGES AND AIRCRAFT STATUS, SUMMARIZE FINANCIAL COMMITMENTS TO F-5 MODIFICATIONS AND SPARES, AND RECOMMNED A CONFERENCE IN WHICH ALL THE PLAYERS COULD PARTCIPATE IN DEVELOPING A STRTATEGY TO IMPLEMENT THE FORCE STRUCTURE DECISIONS NOW BEING MADE INDEPENDENTLY

2. FORCE STRUCTURE AND AIRCRAFT STATUS

A. TAC HAS ANNOUNCED CONVERSION OFONE AGGRESOR SQUADRON FROM F-5E TO F-16S. THEY ARE NOW DECIDING WHAT TO DO WITH 19 EXTRA F-5E AIRCRAFT TO BE AVAILABLE 1 APR 88. TAC WILL PROBABLY RETAIN 9 OF THSE AT NELLIS FOR SUBSEQUENT TRANSFER TO PEACE BONITO, WHILE PROPOSING TO TRANSFER 10 F-5E TO AMARC 4-8 APR 88. THREE NELLIS F-5E AIRCRAFT ARE GROUNDED FR LONGERON CRACKS. TWENTY ONE AIRCRAFT WILL REMAIN AT WILLIAMS THROUGH APR 89. ONE WILLIAMS AIRCRAFT IS GROUNDED FOR DAMAGE INCURRED DURING AN

INFLIGHT FIRE. FUNDS FOR THE REPAIR OF THE FIRE DAMAGE ARE NOT AVAILABLE. DISPOSITION OF THE WILLIAMS AIRCRAFT IS UNKNOWN.

B. USAFE HAS ANNOUNCED PLANS TO TERMINAT F-5 AGGRESSOR FLYING 1 APR 88. THREE OF 17 USAFE AIRCRAFT ARE GROUNDED FOR LONGERON CRACKS. DISPOSITION OF AIRCRAFT IS UNKNOWN.

3. MODIFICATIONS, REPAIRS, AND SPARES

A. SEVEN SAFETY MODIFICATIONS ARE IN VARIOUS STAGES OF DEVELOPMENT THESE MODS INVOLE $3.5 MILLION IN BP11 AND $1.0 MILLION OPEN FUNDS. SINCE THESE ARE SAFETY MODS AND THE FUNDS ARE ALREADY OBLIGATED TO BUY KITS, THE SPM RECOMMENDS WE INSTALL THE R7 MODS IN THE REMAINING ACTIVE USAF INVENTORY AND STORE THE REMAINDER WITHTHE INACTIVE AIRCRAFT

B. NINE MISION ESSENTIAL MODIFICATIONS COSTING $5.6 MILLION (.$2.2 MILLION UNOBLIGATED) ARE IN PROGRESS.

C. SIX MODIFICATIONS COSTING $16 MILLION ARE PROGRAMMED FOR THE OUT YEARS. WE RECOMMEND THESE MODIFICATIONS BE TERMINATED.

D. TO REPAIR COCKPIT LONGERONS WE NOW HAVE EMERGENCY PURCHASE REQUESTS IN PROGRESS TO BUY 21 KITS WORTH 911 THOUSAND. INSTALLATION OF THESE KITS WILL COST $590 THOUSAND. IN ADDITION, THE FINAL KITPROOF IS SCHEDULED FOR APRIL AT RAF KEMBLE, IT WILL COST $48 THOUSAND

E. IN THE F-5 SPM DIVISION ALONE, EOO SPARES WORTH OVER $6 MILLION AND INVESTMENT SPARES WORTH $2.2 MILLION ARE IN PROCUREMENT. THESE INCLUDE SUPORT FOR OVER 1000 FMS AIRCRAFT. PROPORTIONATE QUANTITY FOR USAF AIRCRAFT SCHEDULED TO STAND DOWN IS UNKNOWN AT THIS TIME. THESE NUMBERS DO NOT INCLUDE REQUIREMENTS BEING WORKED IN THE MMI DIVISIONS ACROSS THE COMMAND

4. DUE TO THE UNPROGRAMMED EARLY PHASE OUT OF THE F-5 AND THE MANY QUESTIONS ARISING FROM IT, REQUEST AFLC LOC HOLD A CONFERENCE TO DISCUSS

BOTH IMMEDIATE AND LONG TERM REQUIREMENTS FOR THE F-5 DURING THE CONFERENCE. THE TOPICS OF DISSCUSSION SHOULD INCLUDE AT LEAST THE FOLLOWING:

A. FUTURE USAGE

B. AIRCRAFT TRANSFERS

C. LONG TERM STORAGE

D. AIRCRAFT MODIFICATIONS

E. AIRCFART SALES

F. DISPOSITION OF DAMAGED AIRCRAFT

G. LONGERON REPAIR STRATEGY

5. POC IS DIR MAT MGT/MMSMA, CAPT CHUTCA, AUTOVON 945-3070

|| 7906

PRIORITY

****
* UNCLASSIFIED E F T O *
****

Appendix C: Support of Retiring F-5 Aircraft

01 1815442 APR 88 RR RR UUUU DOUG121355

HQ AFLC WRIGHT PATTERSON AFB OH//MI//

HQ USAF WASHINGTON DC//PRI/PRP//

INFO HQ PACAF HICKAM AFB HI//CV//

HQ USAFE RAMSTEIN AB GE//CV//

SA-ALC KELLY AFB TX//MM//

OO-ALC HILL AFB UT//MM//

HQ USAFE WASHINGTON DC//LEV/PRI//

ZEN HQ AFLC WRIGHT PATTERSON AFB OH//CV//

UNCLAS

SUBJ: SUPPORT OF RETIRING F-5 AIRCRAFT (HQ USAF/PRI MSG 0512022 APR 88)

1. REFERENCE HQ AFLC/MI MSG 0717452 APR 88, F-5 PROGRAMMING ACTION.

2. WE CONCUR WITH THE IDEA EXPRESSED IN PARAGRAPH 5(U) OF SUBJECT MSG THAT, PENDING DETERMINATION OF QUICK SALE TO FMS CUSTOMERS, RETIRING AIRCRAFT TRANSFER TO AMARC SHOULD BE DELAYED. WE WILL BE EXPLORING ALTERNATIVES TO AMARC STORAGE AT THE F-5 PROGRAMMING ACTIONS CONFERENCE, 21 APR 88.

PAGE 2 1815442 APR 88 RR RR UUUU

3. TO ALLEVIATE FUTURE PROBLEMS, WE RECOMMEND A REVIEW OF THE EXISTING POLICY OF AUTOMATICALLY MOVING AIRCRAFT TO AMARC UPON PHASEOUT. THE USE OF AMARC FOR AIRCRAFT WITH FMS POTENTIAL NEEDS TO BE A MAJOR CORPORATE DECISION. HQ USAF/PRI, WITH ITS ACCESS TO FMS CUSTOMER REQUIREMENTS, AND HQ USAF/PRP, WITH ITS KNOWLEDGE OF ASSET AVAILABILITY, ARE IN AN EXCELLENT POSITION TO MAKE TIMELY DECISIONS AS TO WHETHER AMARC STORAGE IS ADVISABLE OR WHETHER MOVEMENT DIRECT BY LOSING ACTIVITY MAKES MORE SENSE. WE IN HQ AFLC REMAIN VERY COMMITTED TO PARTICIPATING IN THIS DECISION PROCESS. HOWEVER, THE AIR STAFF OFFICES INVOLVED ARE IN A UNIQUE POSITION TO ENSURE A BALANCED VIEW.

MARVIN RODIN, XOMA, 75066, DO

UNCLASSIFIED

Appendix D: Status of F-4 Aircraft Program

*****UNCLASSIFIED*****

151657Z MAY 90 RR RR UUUU

FROM: DLA CAMERON STATION VA//DLA-O//

TO: CDR DCSC COLUMBUS OH//O/OPW//

CDR DGSC RICHMOND VA//O/OPW//

CDR DESC PHILADELPHIA PA//O/OPW//

CDR DPSC PHILADELPHIA PA//ZSA//

UNCLAS

SUBJ: STATUS OF F-4 AIRCRAFT PROGRAM

A. DLA-O POLICY MEMORANDUM 90-1, STOCK FUND ITEM MGT POLICIES.

1. DEFENSE LOGISTICS AGENCY (DLA) WEAPON SYSTEMS SUPPORT OFFICE (DWSSO) HAS OBTAINED AIR FORCE (AF) PHASE DOWN INFORMATION FOR THE F-4 PROGRAM (WSDC 02F). SUBJECT INFORMATION IS CURRENTLY THE BASIS FOR VARIOUS AF SUPPLY AND FINANCIAL MANAGEMENT DECISIONS.

2. AF PLANS TO REDUCE NUMBER OF F-4 AIRCRAFT FROM 1210 TO 534 BY OCT 90, PHASING DOWN TO 94 AIRCRAFT BY OCT 97. THESE AF PROJECTIONS MAY BE REVISED DOWNWARD SO THAT BY OCT 95 ONLY 5 AIRCRAFT WILL REMAIN. FLYING HOUR PROGRAM FOR THE F-4 WILL ALSO BE REDUCED COMMENSURATELY FOR A 30 PERCENT DROP FOR FY90 AND A 87 PERCENT TOTAL DROP BY FY 97.

3. NAVY AVIATION SUPPLY OFFICE (ASO) HAS ADVISED DWSSO THAT THE NAVY'S 25 F-4S (SIDEWINDER) AIRCRAFT (WSDC 61N) WILL BE CONVERTED TO QF-4M DRONES.

4. FOR ITEMS UNIQUE TO THE F-4 (WSDC 02F OR 61N BUT NO OTHER WSDC, AND NO SIGNIFICANT DEMAND FROM OTHER THAN AIR FORCE OR NAVY):

A. REDUCE QFD/QFD-NEW BY 50%. VERIFY ALL NON-RECURRING REQUIREMENTS (SSRS, SPRS, OTHER) WITH APPROPRIATE PROGRAM MANAGERS IN WRITING.

B. AT THE TIME OF THE BUY, REDUCE SAFETY LEVEL TO NO MORE THAN 60 DAYS.

C. ALSO, THE TIME OF THE BUY, REDUCE PROCUREMENT CYCLE TO HALF THE LEVEL SHOWN IN THE RECOMMENDED BUY, BUT TO NO LESS THAN 3 MONTHS.

D. REDUCE NSO QUANTITIES TO HALF OF THEIR PRESENT VALUE AND APPLY THE POLICY OUTLINED IN REF A

E. REVIEW ALL OPEN PROCUREMENT ACTIONS (PR AND CONTRACT) FOR POSSIBLE TERMINATION OR REDUCTION. DECISION SHOULD BE MADE ON THE BASIS OF REDUCED QFD, PROCUREMENT CYCLE, SAFETY LEVEL AND NSO LEVELS DESCRIBED ABOVE

F. ALL RETENTION AND RETURN DECISIONS SHOULD BE MADE OF THE BASIS OF THE EDUCED REQUIREMENTS DESCRIBED ABOVE

5. DWSSO WILL CHANGE AF WSDC AND NAVY WSDC FROM LEVEL B TO C

6. IDENTIFY AND RECORD THOSE BENEFITS, COST SAVINGS AND COST AVOIDANCES ATTRIBUTED TO ACTIONS TAKEN IN RESPONSE TO F-4 PHASE DOWN.

7. POC IS MILE POUV, DLA-DSF, AV 284-7975

*****UNCLASSIFIED*****

Appendix E: Pentagon Interviews

Interview 1

Schonenberg, Lt Col Paul M., Policy/Management Branch Chief of the Office of the Deputy Secretary of the Air Force for International Affairs (SAF/IAPPM). Personal interview. Pentagon. 19 June 91.

Q: Since you wrote your article in the DISAM Journal (Summer 1989), what has developed with the "ramp to ramp" concept?

A: I think that the circumstances, as they originally existed back at that time when the article was written, remain the same. I'm disappointed that we haven't made more progress than we have made. In some regards, I think it is probably accurate to say that we have been kind of treading water, rather than making any progress. I'm troubled by that. The idea of a "ramp to ramp" transfer was a good idea. It is a good idea from the standpoint of both the (FMS) country and the (U.S.) Air Force in that a "ramp to ramp" transfer gives an opportunity to provide a quality aircraft without incurring the additional cost of storage and repair. That is the principal advantage of it. With a "ramp to ramp" transfer, the airplane was in use one day in the United States Air Force, you transfer it, and the next day they (the FMS country) get an operational aircraft.

Whereas, if you put it into AMARC, or you put it into some other kind of storage capacity, you incur additional cost for the customer. These costs may include the maintenance of the aircraft until such time that it is transferred. You also have cost associated with some deterioration of the condition, which is pretty well unavoidable. The principle reasons for doing the "ramp to ramp" transfer are to save money, and insure the condition of the aircraft. The historic problem with doing a ramp to ramp transfer has been the non-availability of the support equipment and spares at the time the transfer took place. What we have ended up doing is transferring an aircraft which cannot be fully logistically supported at the time of the sale. I firmly believe that the reason why we have not been able to fix that problem of having a fully supported aircraft at the time of the sale is because we have not done proper logistic support analysis ahead of time. This means we can't go to the country and tell the country what they need to have in order to logistically support the sale. There is a variety of reasons for that. I think there has been a reluctance on part of the logistics command to front end load the work and do that analysis in advance. I also think part of the reluctance on the part of Air Force Logistics Command to do that work in advance is because they don't really see any benefit for them in doing that advance work in an area where there are scarce resources. That type of work has just a too low of a priority to get done. Unless you have that kind of analysis done in advance you can't tell the customer what he needs to buy for him to get it on order in time for logistics leadtime. We have looked at what kind of

automated systems are available that will enable us to do that and found out that the analysis that we're looking for doesn't exist in existing data bases. It is something that has to be done. There is no reason why it can't be loaded into a database once it was done. but to date that analysis has not adequately been done and the database has not been created. That makes it a labor intensive effort.

Q: What kind of databases do you think we need to have?

A: I think first and foremost. we need to have a database built on aircraft type and configuration. In addition to the configuration of the aircraft. mission profiles of the aircraft that apply. In other words. you are going to have a F-5. which model of the F-5 it is going to be. what equipment it is going to have on it. and what mission is it going to be doing. Based on that information. you then need to have an analysis of what kind of support equipment. You need to have your support equipment requirements broken out both by common and peculiar. and you need to be able to have it cross referenced to other weapon systems that use the same support equipment. In terms of spares you need to have information on spares packages that include...that would support packages consisting of different numbers of aircraft for different periods of time. lets say up through one year. That analysis needs to be done manually and then loaded...and then a database created. Once that database is created it needs to be linked into the other databases

that are available within the Air Force that give you availability of that data. and the lead times associated with procurement for those pieces of equipment. which are not available. If you had that. if you knew what the requirements were. if you knew what the availability of the support equipment and spares were. and you knew what the lead time was. then you would have a device that you could use for planning purposes to figure out if a sale was logistically supportable. what the long poles in the tent were that would prevent the recipient country from buying the aircraft. and what actions you needed to take. either by coming up with count' funds in advance to purchase stuff or for planning purposes for use of Special Defense Acquisition Fund monies buy in anticipation of the sale. But. you have a vehicle you can use for planning purposes to develop your logistical support package and solve those problems which have effectively kept us from supporting ramp to ramp sales.

Q: You mentioned use of the Special Defense Acquisition Fund. Have there been recent changes that allow use of this fund to actually stockpile spare parts and support equipment in anticipation of a (FMS) sale?

A: Well. we have gotten the people who run the Special Defense Acquisition Fund sensitized that the long pole in the tent for the Air Force is not the availability of end items. like aircraft. but the availability of support equipment and spares that you need to

support those things. We have gotten them to give us. I believe. $10 million to buy F-4 spares and support equipment and $4 million to buy C-130 support equipment. both prior to actual signed LOAs. In that regard. I think that we have been successful. We have also submitted a package in support of F-16s which we were turned down on because they didn't think that we had sufficiently done our homework to quantify the requirements. Having said all that. what i am telling you is that the Air Force has gotten approximately $14 million worth of SDAF money to buy in anticipation of Foreign Military Sales. The Air Force has not been able to spend any of that money. The reason why we haven't been able to spend any of that money is because when we went out to buy stuff. the Air Force had not been able to figure out what to buy. The reason we couldn't figure out what to buy was because the front end logistic support analysis wasn't properly done. It is all back to the same thing. if you don't do your proper front end analysis you can't adequately execute (the sale).

Q: The front end analysis consists of mission requirements and particular configurations under different mission conditions?

A: Yes....along with some linkage that gives you availability within the system and your lead time to buy it. If you know what your requirements are. but you don't know what you have in the warehouses. and you don't know what the lead time is. you can't

know how to properly spend your money. You might have a need for something which you know that you don't have in the warehouses. but the lead time is three weeks. Why waste SDAF money to go out and buy something which you can commonly procure with 3 weeks lead time. That's stupid. It is a waste of money. In like manner. if you need something. but you have 500 of them in the warehouse. you sure as heck don't want to spend money to buy them regardless of wether the lead time is one year or three years. You might have something that has a three year lead time. but you have 500 in the warehouse and your demand level is 2 a month. It would be dumb to go out and buy any of those. You need to have all three pieces of the pie. You need to have your requirements. you need to have your present availability. and you need to have your lead time. Only if you have those three can you make an intelligent decision for planning purposes of what you would need to buy. long term. in advance.

Q: Looking at our supply and logistics system. what type of accounting and reporting procedures do we use now that will best fit that need? Are there existing procedures that we can extract pieces of that will fill these needs? Could the DO-41 play a part?

A: The DO-41 could do part of it. the problem is having an automated system that could give you the feedback. you know. a type that automatically pulls together the data and automatically does a cross referencing.

Q: What you're looking for is a type of a system you could tell, for example, you have 24 airplanes, specific operating environment, mission profile, and the system would come back and tell you the requirements?

A: What invariably happens is that most of these sales end up getting pulled together on relatively short notice. I mean they might be, hypothetically, in discussion for some period of time. When push comes to shove, it usually is that the Prime Minister is coming to the United States for a meeting with the President and there's some discussion on about base access. They need to do something as a quid-pro-quo. If the time is right, we may offer them twelve aircraft, and to do it near term. Or, there is a sudden decision to drawdown a unit somewhere or another and aircraft are going to become available. There are three competing people (countries) who would all like to get those aircraft. Who do we give them to, can we make it happen? You've got a time crunch and you have a relatively short period of time to figure out what you can do, what makes sense to do, and what your problem areas are. Invariably, the decision is made without the benefit of a logistics analysis, other than a seat of the pants analysis, because you can't get the information that you need in the window of opportunity that you have in time to influence the decision. Now....once that gets done you're already into a problem because we've already made the decision. The Unites States is committed and we've got to figure out

how to make it work. What I'm saying is, we need to develop some kind of analysis system that gives us information adequately in advance...so that we can influence the outcome. What I would like dearly to do is to sit here at my desk and get into the Air Force computer systems and into the SAMIS System. I'd like to have some automated system that I could get into. I would first call up and say, It looks like our best guesstimate is that we're going to have 24 aircraft, they're going to be F-16s A&Bs, they're going to fly the following air-to-air mission and the following sortie rate. Country "X" wants to put them into a bare-base environment where there is no existing support equipment at all, brand new base. What do we need to have, from scratch, to make that work. I'd like to be able to call that up. I'd like to be able to know what the dollar amount is, total dollar amount for the equipment involved in terms of minimum requirements, and then I'd like to be able to pull up a secondary package of nice-to-have items that would be like icing on the cake. But, the first thing is, can they (the FMS country) launch and recover sorties, and fly around the flag pole? What is the minimum amount of requirements that they've got to have. Otherwise, they're not going to do anything at all. And then, as a secondary thing, if they have more money to spend and they would like to have some gee-whiz, nice-to-have stuff that would make their job easier, what are some other things that they can get which would be...not need-to-have, but nice to have. It's kind of like, you don't need to have power windows on your car, but you do need to have windows, otherwise you're going to get wet when it rains. Well...power windows are an

option. which are nice. but if you're looking for basic transportation. the absence of power windows is not going to keep you from driving the vehicle from point A to point B. That kind of a deal. you don't need to have a sunroof. it is a nice-to-have. but you don't need to have it. So. you're going to have the basic requirements list first and then a secondary requirements list of nice-to-have stuff. if they can afford it.

Comment: If a super hot radar is not available. then the next one down will do?

Response: Yes. right. I'd like to call that up on my screen and then play some "what-if" games with it. If they're going to co-locate with a F-4 unit that is already there. what support equipment do they likely have in order to support the F-4s they already have? So...they could make some of it available. possibly to support the F-16s. I mean. it may slow down their overall sortie rate. but they'd at least have the equipment there so that it's not going to be a show stopper. It wouldn't keep them from taking the aircraft off. I would like to be able to play with that and play with the availability. What is the availability of the stuff? What is the lead time? Where are the aircraft coming from? Are the aircraft all going to come from the same squadron? Is it a National Guard squadron in South Carolina? Is that National Guard Squadron going out of existence? It would be nice if all the support equipment they presently have is

going to become excess and I can use it for this purpose. Or...are we going to take two aircraft from each of six squadrons. no aircraft squadron is going to be drawn down (out of existence)... In that case there will be no excess support equipment. I've got to figure out how can we do the support. figuring that there's no excess support equipment. Or...maybe there is a National Guard F-4 squadron and we are going to sell their F-4s and replace them with F-16s. There is common support equipment that is used both on F-4s and F-16s. So. they (the Guard Unit) are going to want to keep that common support equipment and only buy the F-16 support equipment that they need and the F-4/F-16 common support equipment is not going to be available for use as part of the sale. So... I have to figure out another place to get that from. I'd like to sit down at the screen and work all those kinds of scenarios and then be able to come up with a pretty reasonable game plan. Say. for example. Morocco wants to have "X" number of aircraft and it looks like they're going to come from the following source. As a result of those two facts. they're going to get this number of aircraft to put in this place and the aircraft are coming from this location. I can give you an analysis indicating what support equipment is required. what support equipment is available. and what we need to do to make it work. ...I'd like to be able to give that information within the window of opportunity that people are using to make decisions about whether or not to offer the aircraft to Morocco. or any other country. If I could give that. and you know that the countries that we deal with are not stupid. they are perfectly willing to buy support equipment

with long leadtimes. and give us money to buy it now. They are willing to do that if we can explain to them what it is that they have to have and why they have to have it. Our problem in the past has always been that we've never been able to do that. Invariably. what we've said is. "we think you'll need $10 million worth of support equipment. undefinitized. and we'll definitize after the contract is written and signed." Then the definitization conference usually takes place long after the decision's been made to sell the aircraft. In some cases. the definitization conferences for support equipment and spares take place after the aircraft have arrived in the (FMS) country. By the time you've done that. if there's something that was a critical piece of support equipment or critical spares. you are now adding three years to your logistics leadtime. That is really dumb. it makes us look really bad to our customers. It causes America to lose face. It sharply increases the cost of supporting the transaction and greatly increases the turmoil. It's a bad deal for everybody. but it's a bad deal that could be avoided if we did better front end planning.

Q: There are two points I would like to clarify. The first concerns the use of SDAF monies to buy parts for C-130s and F-4s. How would we sequester parts purchased with SDAF money to segregate them from normal U.S. Air Force Stocks?

A: That's another problem which we currently have and which we have asked AFLC to work. There are at least two ways you can do that. Obviously, one way is that you just have a warehouse and you have everything delivered into one warehouse and you lock it up. Its sealed and separately located. AFLC has not wanted to take that approach. The approach that AFLC has wanted to do is to commingle the SDAF stocks with other (USAF) assets and have it computer coded. It is identified as being a reserve stock, but it is just located at the same place as other stocks. They have not been able to, yet, figure out a way that they can insure that it will be done in such a manner. When it comes time to get the asset, is the asset still there, sitting on the shelf.

Q: Is this similar to the CLSSA arrangement?

A: Its similar, with Cooperative Logistics Supply Support Arrangements (CLSSA) what you do is to have the country buy in (to the USAF logistics system), and their buying in gives them better drawing rights. It gives them a better priority for drawing rights. By-in-large, CLSSAs work OK. Now, ...the problems with CLSSAs are that when a country buys in on their drawing rights and they say "OK, we're going to give you the money. We can draw one unit every three months over the span of a year". The Air Force doesn't necessarily buy, over the span of a year, four units and put it on the shelf. The Air Force will their computer analysis. It indicates in order (for the

FMS country) to have drawing rights for one asset every three months. considering the turn time for repair and other things. rather than buying four units and have them sitting on the shelf. we only need to have an additional one and one half units sitting on the shelf. So. ...we'll only buy an additional one and one half units. The Air Force doesn't buy all the assets that one would think we would as a layman. You know. ...buy four units and put them on the shelf. It doesn't quite work out that way. The good news about that is the country doesn't get charged for buying four units. They buy drawing rights. but they don't pay the full price for four units. There is a little quid-pro-quo in there. Granted. we don't put everything on the shelf that we say they can have drawing rights for. The other side is that we don't charge them to buy four units either. There are occasions when a country doesn't always get everything. immediately. when they say they want it. That happens sometimes. Actually. CLSSAs workout fairly well. I think

That's not quite the same problem as we're talking about here though. Because ...with CLSSAs. the assets are obviously co-mingled and they are not fenced. they are just drawing out of a pot. Whereas. what we were talking about on this other thing. buying in anticipation of sales. we don't want those to be co-mingled. I mean we really want those to be fenced assets. By definition. we wouldn't be buying them if they weren't already in short supply and they weren't long leadtime. If we know they're short supply and long leadtime. we'd darn well better fence them. otherwise we can pretty

well guarantee that they aren't going to be available for the country when the country needs them.

Q: When a country submits a LOA for purchase of some of this equipment that we have sequestered for them, will they pay all storage costs associated with the items up to the time of delivery?

A: Yes...that would be a reasonable assumption. But, the other thing that you need to remember is we are not going to buy items that are not long leadtime. There are a couple ways to look at it. One way is how are you going to aggregate the assets? Are you going to say, "You need this total package, we're going to aggregate it, hold it, and then ship it to you all in one fell swoop". That's one possibility. The other possibility is we'll order stuff and as it comes in we'll send it to you. That way the FMS country will have it in advance and store it in their own facility. There are advantages and disadvantages to both of those. If we store it, we know where it is, hopefully, but there is a cost associated with storing it. If we ship it to the country, we run the risk of that when the country receives it, they won't know what to do with it. Their supply systems are not that wonderful either. Frankly, in most cases theirs is worse than ours. We can ship it to them, then 3 years later when the aircraft arrive and they need it to support the aircraft, they can't find it. That's a whole different problem. In this business, the solution to one problem usually creates an opportunity for another problem to occur.

You have to figure out a matrix solution that will solve it all. But, the real issue on the long leadtime stuff is there should not be that much of a storage problem associated with it. You're ordering stuff that, by definition, is long leadtime. We're saying "you can buy aircraft from us three years from now, we won't have the following specific pieces of support equipment, or specific spares that you will need, and they are long leadtime for acquisition items." It is going to take us two years to acquire those for you. If you want to buy those aircraft three years from now, have those aircraft delivered, and have those aircraft logistically supportable at the time of delivery, you're going to have to give us some money three years in advance for us to buy those long leadtime items. Because of the leadtimes, we're not overly concerned about the aggregating together of a whole lot of extra storage costs. We're just trying to get the money in advance to satisfy the leadtime requirement.

Q: If we knew the type of aircraft, would we try to stagger our requests, or buying, of this long leadtime equipment, i:, order for it to arrive at a point in time where it could be shipped to the FMS country close to the delivery time of the aircraft?

A: If we were doing things smart that is the way we would do it. Now ...we also live in an imperfect world. There has to be some flexibility there. If we're going to err, I'd prefer that we err on the side of being conservative. I would argue that we would be better

off incurring a little storage costs in order to be sure that we could fully support the sale in the future. I'd build a little bit of a fudge factor in: to make sure that we didn't have a problem. That's just my opinion, and I'm a conservative guy. The premise, and the goal, would be to stagger the ordering, based on the leadtime, so that you'd pretty well have everything showing up at the same point in time. That point in time would be right before the shipment of the aircraft.

Q: Has the country actually bought the aircraft? Are the aircraft stored at AMARC? Or is this something that happens after we have pledged to sell a specific number of aircraft to a particular country at a future point in time.

A: It would be... we actually sell this number of aircraft to this country at this time. As a general rule, what ends up happening is we program aircraft phasing out of the inventory and we do a pretty good job of it. We have a kind of game plan laid out of what is to be coming out of the inventory during any given quarter or year. That's kind of programmed a couple of years in advance. Although things change a little bit based on conventional forces negotiations, budget considerations, and things like that. By-in-large, the plan has stayed reasonably steady. You've got kind of a phase out game plan that is reasonably steady and we're not going to sell everything that's coming out of the inventory anyway. We don't want to, that's

not necessarily a good idea. To segregate out a certain portion of assets that we're going to make available to FMS. we can be pretty safe that it is feasable and it is feasable at a certain quarter. at a certain timeframe.

Q: In some conversations with people at AFLC headquarters. there was some discussion. on their part. of the potential of allowing a FMS country to fund an artificial level of flying hours. for example the F-4s. through the DO-41 system. If they were to fund an artificial level of flying hours. it would translate into an increased level of spare parts that would remain in the inventory rather than those parts being drawn down as the aircraft were phased out. Are you familiar with any plans to use an existing system. such as the DO-41 system. to keep spare part inventories up to an acceptable level prior to the sale?

A: That's not a bad idea. But.... spares are not the real problem. The real problem is support equipment. While that is not a bad idea. ...it is not the long pole in the tent. The major thing is... when you put 6 aircraft in somewhere or another. if need be. they can cannibalize two of them in order to keep the others flying. So. spares are not really the problem. And again. foreign countries do not fly anywhere near the aggressive flying schedule that we fly. Spares are a problem and it is worth working. but they are not the critical problem. The critical problem is the support equipment. The

problems associated with the support equipment are: (1) We don't know what we really have and where it is. (2) we don't know what we really need. (3) we don't know what it costs. and (4) we don't know what the procurement lead time is. We usually act in a bind and we do things that are stupid. Like for example. ...I'm aware of some cases where we have sold countries in tropical climates de-icers. because we use them. But. based on where they are geographically located. the types of missions. and based on the fact that they are really poor. they don't have a lot of money in the first place. I view it as almost criminal that we could do that. Its stupid. its certainly a bad call. a bad decision. Obviously. it makes us look very unprofessional and it is a waste of money. There is no excuse for selling a country in a tropical climate de-icing equipment. But. ...our systems are such that you have someone who has a stack of paper two inches thick that has a whole lot of number on it. and they don't have any idea what the numbers are. what the numbers represent. if they are needed or not. if they are critical or if they are not. You can't take a computer list that is two inches thick that has a lot of numbers on it and ask a computer to solve your problem. You need to have a human interface with someone who has some common sense and knows a little bit about aircraft maintenance and knows a little bit about that particular weapons system to go through that list and figure out if those requirements are good requirements or bad requirements.

Q: Is that list something like an Initial Spares Support List (ISSL)?

A: Yes, and you know, ...I doubt that you could go to any two bases and find the same ISSL, because each base has a different requirement, based on slightly different equipment on their aircraft and slightly different mission considerations. There are some things which are common requirements on all of them. You're going to find some kind of a dash 60 equivalent on any ISSL that you go to. There are some things that are core requirements and you've got to have and there are other things that are going to depend on what kind of radar you've got, what kind of bomb release systems you've got, or any of a number of differences. But, there are some things that will always remain the same. You can't just load an ISSL into a computer and think that you've got your job done. You need to have a better analysis of what your requirements are.

Q: Earlier you said that we don't do our job of collecting data on the front end. At what point in the life cycle of an aircraft does the data need to be collected and what types of data do we specifically need?

A: We do a pretty good job on the spares side of the house on collecting data for failure and usage rates. ...If I knew what aircraft a foreign country was going to fly and I had a reasonable idea of how the aircraft was configured, what mission it was going to fly, and

how many hours a month they were going to fly. I could go to some people and get a pretty good analysis of what kind of spares consumption they were going to have on a monthly basis. From that we could build a pretty good spares package. The biggest place where we have deficiencies is on the support equipment side.

Q: Do we need to develop a collection system on how we use support equipment, based on failure rates, replacement rates, and other factors, similar to the way we do for spare parts?

A: That's true, except that, frankly most support equipment doesn't wear out. ...Most support equipment just really doesn't wear out. We've got twenty to thirty year old support equipment out there that is still doing just fine and its almost impossible to destroy. Its been upgraded and modified. Sometimes... its hard to keep track of what we really have, where its located, and what kind of condition its in. That's what we really don't have good visibility of and we really don't have a good indication of.... for different pieces of support equipment, what the commonality of it is. For example, we have done some phase out of B-52 aircraft and we are never going to sell a B-52 to a foreign country. I don't think so. However, there may be some support equipment used in support of the B-52s that is common and could also be used in support of F-4s. Or, with minor modifications could be used to support F-4s, A-7s, or F-16s. I don't know any place where you could go to get the information needed to

identify and cross reference in order to see the commonality. and to then see if through B-52 phase out we're generating support equipment that could be useable in support of F-16 sales. It may well be that a country like Greece who's buying F-16s. no let's say Morocco. Morocco may be buying some used F-16s and they need some support equipment. It might be that we're asking them to go out and buy it new with a three year leadtime when there may be something available due to B-52 deactivations. But. we don't know about it. The deficiencies. ...we do a pretty good job on the spares side of the house for being able to do demand rates and things like that. I think the suggestion of creating an artificial utilization factor for projections is not a bad idea. The principle problem and the principle long pole in the tent in making (FMS) sales work is. by-in-large. the support equipment side. Now. having said all that. there are some occasional cases on the spares side ...where there are some critical spares lists. There are some spares that are in critically short supply. but we have much better visibility of them. I'm not altogether sure that using some SDAF money for spares is not a bad idea. Let's say. based on an analysis that we're going to continue to stay in a bad posture on certain spares for some period of time. We know that we're going to have some FMS sales that will take place two years down the road. We'd better see if we can acquire some of these critical spares in advance. We'll use some SDAF money to do that. If you use SDAF money like that. you've got to have a fencing mechanism to make sure the parts are there for use by the FMS country. For example. the part finally comes in after

a three year wait in the pipeline and then the next day an (U.S.) Air Force unit sucks it up to satisfy a MICAP requirement. That would not be fair. That would also crutch along the (U.S.) Air Force when the Air Force has underfunded spares. That really doesn't help the (U.S.) Air Force either. Our FMS countries would kill us if we used their money to buy long leadtime spares and then they were not available when they needed them. And that is similar to the CLSSA problem that we talked about earlier.

Interview 2

MacDonald. Lt Col Angus. Program Officer. Weapons Branch/Plans & Programs Division of the Office of the Deputy Secretary of the Air Force for International Affairs (SAF/AIPPW). Personal Interview. Pentagon. 19 June 91.

Q: What did the U.S. Air Force hope to accomplish by "ramp-to-ramp" transfers?

A: The reason that we originally tried "ramp-to-ramp" transfers was so we could put airplanes into countries. have them met by qualified maintainers. and backed up by an adequate logistics stream. The supplies would be enroute. the contracts in place. and the support equipment on the ramp. The aircrews would also be trained. To do all that requires some leadtime. It was initially figured that if we

were able to calculate the leadtime to generate all that. then we would be able to better program airplanes into a country. It seems logical. In an ideal world it would be logical and it would work. Unfortunately. academicians live in a perfect world. but we don't. We've got to work this thing from a standpoint of aircraft coming out. based on budgetary. as well as political constraints. We've got transfers that are made or promised. based on political considerations. by political appointees. elected officials. and people who have worked in those (FMS) countries. Where a country. in 1991. can be a friend of ours. an ally. on our good guy list. and eligible to receive this equipment. It could. as in the case of Thailand and as in the case of Pakistan. in a few years. be on our bad guy list over just one incident. The budgetary problems we have. although we try to predict how many airplanes are going to be programmed as excess four years from now. are a mess. They can be as political as this: a state that wants fighters to stay on its soil because the congressman happens to like fighters. He doesn't want heavy airplanes parked on his ramps. He has this macho thing about fighters. It may be that he will delay the decision to make those fighters excess. He can steam-roll a vote in Congress to prevent those fighters from becoming excess in the time frame that we need them. Or. ...it could be that a congressman wants a heavy aircraft because it gives more jobs. more maintainers. more hours. He will fight to keep those airplanes in place rather than transitioning to a fighter aircraft. That keeps the heavy aircraft from coming out of the inventory. Its very simplistic. but those are the things that can

happen. Budget drawdowns. early retirements of aircraft. and airplanes breaking at a much higher rate than we had predicted. affect the numbers of assets available. Damage indices really get up there to the point that aircraft we programmed out in flyable condition in 1994 are no longer flyable assets in 1993. They become so bad that they need major modifications to make the airplane flyable. Take the T-37 for example. they will be coming out of the inventory shortly. however they will be within 10 hours of grounding. What can you do?

Q: Can we repair the T-37?

A: They are repairable. but it will cost at least $150.000 per aircraft. The kit alone will cost $50.000. if we can find the kits anywhere. We have to go buy that kit. find a source for that kit. to give the airplane what is called a SLEP. Structural Life Extension Program. This program gives the airplane an additional 8000 hour life. Its a great airplane after you put the $150.000 into it. However. you must always remember that the countries that we are "giving" these aircraft to need them at bargain basement prices. Additional monitary requirements cause problems. Where do these countries get this money? We're asking them to make commitments four years in advance on aircraft that are as tenuous as these are. Its a big problem because many of these (FMS) countries have no budget that go out that far. Most of these countries are new to the

idea of democratic government and new to the process of budgeting. Remember also, governments change in these countries quite a bit. We have all these problems to deal with. What the drive toward "ramp-to-ramp" transfers has done is that it has caused us to really scrub the kinds of factors that are important. To make it work better, we still shoot for "ramp-to-ramp" transfers because it makes us go through all the iterations of getting smart. For example we have to ask ourselves what kind of training are we going to need, what kind of logistics are we going to need. We have to bump that up against a generic model of the minimum amount of logistics that is required to support those aircraft in a country that has never operated those aircraft before. Or, ...in a new bare base situation. A bare base requires a whole new concept, probably more training because they will have to train more people. Those are the kinds of things that we have to consider. Once we have a generic model of the types of logistics, training, and infrastructure requirements, then we have to find out the type of infrastructure the country already has. Are we talking about a country that wants F-15s and have flown Mirages, and we will only have to help them make the transition? Are we talking about a country that has never flown modern aircraft? If so, we'll have a large problem in training both the maintainers and the air crews. All of those factors extend the leadtime and must be considered. "Ramp-to-ramp" transfers is what we shoot for, but we have recently gotten a lifting of the restriction of using AMARC as an interim storage facility. Other things that we do to insure that we have supplies on hand in the near term is to

take a certain number of aircraft and stick them into AMARC, then cannibalize them to make-up an initial support capability. Everytime we do a transfer it is a special case. There is no such thing as boilerplate in this business. There is some foundation and a track to run on. There are some people with lots of experience that you can go to, but there are no two transfers that are alike.

Q: You mentioned a lifting of the restriction on using AMARC. Can you tell me about that?

A: I briefed the Chief (of Staff) in September of last year (1990) and asked him to allow us to use AMARC. He agreed that AMARC was a viable possibility and that we would be able to do that. We can stick airplanes in AMARC. Why don't we want to do that? Because it runs the price of airplanes up.

Q: Prior to September of last year, could we not put airplanes, destined for FMS, into AMARC for storage?

A: We were forbidden from doing that. It was a policy not to do that. General Welch told us, specifically, that it will be "ramp-to-ramp" transfers. Regardless. It made it very difficult. It made command levies more palatable to the Chief, compared to putting airplanes into AMARC and then pulling them out later.

Interview 3

Cherry. Capt Lee. Logistics Officer. Weapons Branch/Plans & Programs Division of the Office of the Deputy Secretary of the Air Force for International Affairs (SAF/AIPPW). Personal Interview. Pentagon. 19 June 91.

Q: What do command levies do to the active air forces?

A: In many cases it devastated their ability to perform their mission. Varying degrees of hurt were felt because what we would have to was to go out and take serviceable support equipment from active Air Force units and give it to our foreign customers. AFLC tries to spread the hurt around and take only one or two pieces from each base. In many cases that was a critical decision and it impeded their ability to do their work. Its not a good solution and it should be avoided. Sometimes. when necessity dictates. it can be used as a last resort.

Q: Command levies were used to provide enough support equipment to accompany sales of aircraft.

A: Yes.

Q: Can you give me an example of a transfer that used command levies?

A: Yes, one that I remember that used it on a massive scale was the sale of F-4s to Turkey and Greece. It involved squadron size numbers of aircraft.

Q: How much of the support equipment was taken from our (USAF) units?

A: All of it. At that time, when we were drawing down the numbers of aircraft, we were not closing down any bases. We didn't have any excess support equipment to support the planes that were sold. We didn't have any leadtime because the decision was made very quickly. We couldn't go out and buy the support equipment, it came out of somebody's hide. We took it out of the Air Force's hide.

Q: Lt Col Schonenberg considers support equipment as the thing that limits our ability to use the "ramp-to-ramp" concept effectively. How would you compare the spares situation to that of support equipment?

A: With spares you have several options. One is to use some of the airplanes as cann birds. You fly the majority of the airplanes and use the parts off of the others. The leadtime for spares packages is

usually not nearly as long as that for support equipment. If you don't have the support equipment to test or repair certain items as the fail, you don't have anywhere to go. Lack of support equipment puts an additional strain on spares inventories. You have to have the support equipment to support the concept that you're flying under. If you're only doing launch and recover operations you'll have to have support equipment for organizational level maintenance. If you plan to go to an intermediate level maintenance, then you're talking about more support equipment.

Interview 4

Burch, Col Thomas, Chief, International Affairs Regional/Saudi Division of the Office of the Deputy Secretary of the Air Force for International Affairs (SAF/IARS) and Chief, Morocco-US Liaison Office (MUSLO), Rabat, Morocco, Dec 1988-Nov 1990, Personal Interview, Pentagon, 19 June 91, (BURCH)

Q: What are the advantages/disadvantages between "ramp-to-ramp" transfers and AMARC storage?

A: I don't see any advantages in sending aircraft to AMARC. If you send them to AMARC, the FMS country, eventually, has to pay the transportation charges going to AMARC, the storage charges while they are there, the charges for long term storage preparation,

maintenance charges while in storage, and charges to take them out of storage. I can't see any advantage in taking an aircraft out of AMARC if they are available anywhere else.

Q: If we want to do business where we send the aircraft directly to the country, what procedure do you envision that could make the support equipment and spares available to the country at the same time that we deliver the airplanes?

A: That is really a tough problem. When I was in the Pentagon during the 1985-1987 timeframe, working in the Defense department, we transferred about forty F-4Es to Turkey. That's when the F-4E was a really hot item and everybody was standing in line to get them. Turkey got them under the Southern Region Amendment. That was the same problem then, we could get them the airplanes for free, but the support equipment and spares were difficult to find. AFLC, the ILC (AFLC-ILC), and a project officer on the Air Staff spent about six months going to almost every base, talking to super-sergeants and compiling lists of what was available. They found out what it would take, support equipment and spares, to support F-4Es, and this is how much that was available from Seymor-Johnson, Nellis, or wherever these airplanes were coming from. There was a difference that had to be funded for long leadtime support equipment and long leadtime spares to make sure that when the airplanes arrived that everything dove-tailed together and you had a fully supportable package. That was supposed to have been a test case. It looked really good on paper, everyone gave briefings and patted each other

on the back. The airplanes were delivered. then after the two year sitting period everything was a bucket of worms. Nothing was as it seemed to be. A large portion of the excess support equipment was not useable or evaporated before it got to Turkey. It was just a mess. The only way that I can see doing it successfully is to do it the way we're trying to do with Morocco with the F-16s that we're selling them. You identify them soon enough and put together a full-up two year support equipment and spares package. have a definitization conference. and get it on contract. They're buying the stuff from production. leadtime away.

Q: When will the airplanes be delivered? Will we deliver the support package first?

A: Theoretically. yes. that is the plan. I think it will be more successful than the previous F-4 sale to Turkey. In that case. they were trying to get into the USAF supply system and get excess spares and support equipment. In Morocco's case. they're just getting the airplanes. they're not getting one item of spares or support equipment from the USAF inventories. They're buying everything leadtime away. Those items that have very long leadtimes and can't be produced before the airplanes arrive. they're

going to use work-arounds. General Dynamics. Westinghouse. Pratt & Whitney. and other contractors have work-around support equipment to fill the gap.

Q: What type arrangements will exist between the contractors and Morocco?

A: Some of the support equipment will possibly be leased. or it may be just some temporary equipment that the contractor can provide. They may build something from specifications. or move something from another country. When the genuine article with a national stock number arrives. they'll either have two of them or return one. depending on the condition of the equipment and the arrangement with the contractor.

Q: Recently. policy concerning the Special Defense Acquisition Fund (SDAF) was changed to allow the purchase long leadtime support equipment and long leadtime spares in anticipation of sales. How may this affect sales of this nature?

A: It could do nothing but good if it works out that way. It depends on our forecasting capability. How can we look into our crystal ball and predict what we'll need two. four or more years from now. It's only as good as your programmer's ability to forecast what the SDAF will need to buy. Originally. SDAF only bought end items and no

spare parts. DSAA would send out a letter to all the SAOs asking for recommendations on things to buy. Now we've pushed it down to the ILC and the Air Logistics Centers to make a more scientific estimate of what we need based on previous consumption rates.

Q: Lt Col Schonenberg suggested that support equipment is the constraining factor in many sales. Do you have any ideas on how we may reduce the effect of support equipment shortages or offset the effects of the long leadtimes?

A: Some countries are more experienced or more knowledgeable on how to field or integrate a system. You would have to go to each individual country and establish what support equipment they have and how they use it. For example. Israel buys a bunch of F-16s. They are smart enough. or experienced enough. to know how much support equipment and spares to lay in. They may not benefit very much from SDAF procurement. Egypt. who is not as far along or advanced. buys the same types of aircraft. and in almost the same numbers. Yet. they want to get rubber on the ramp. They go in more for the systems and not so much for the spares and support equipment. They. Egypt. would be more of a beneficiary of SDAF procurement than would Israel. But. you know. there is a hidden agenda in SDAF. The program is only about eight to ten years old. The reason it was set up is that you can't use U.S. Government funds appropriated to DoD to buy in anticipation of future requirements. To get around

that restriction. General Gast. he was director of DSAA from about 1983 to 1987. started SDAF. It took special legislation through Congress. an amendment to the Arms Export Control Act. to get it established. It started out with about $200 million a year to buy short items. It was intended to prevent the services from being raped when there was a crises somewhere. like when Libya invaded Chad and the Chadians needed some C-130 engines. Instead of stealing them form the USAF. hopefully they were available from SDAF assets. That is why SDAF was started. When we buy things through SDAF. we've learned through the years. we've bought things that just sat there. If your forecasting was wrong. no one ever wanted it and the U.S. Government didn't need it because it was obsolete. One of the prime considerations for current SDAF purchases is if no one else wants it. can we use it?

Q: To make this SDAF idea work. do we need better forecasting and better requirements computations?

A: We need those. We also need to have people in the SAOs close enough to their counterparts in the foreign air forces that they can advise them on their forecasting techniques. To do that you've got to know them personally and understand their environment. and political restrictions. You also need to know their philosophy. mode of operations. and flying hours per month. It starts in the foreign country. in the SAOs.

Q: When we plan for WRSK. for example a kit for 30 days at a bare base location. how much different would our WRSK be from a 30 days of support for a FMS country? Could we extend that same logic out to 12 months?

A: We probably could. except for one thing. In Desert Storm we operated our F-15s alongside the Saudi's F-15s. They either didn't have WRSK or theirs were not like ours. They could not fly like we did. They couldn't maintain the same rates. the number of hours. or the same operational ready rate. ...Let's say. for the sake of argument. that we fly our fighters 50 hours per month per aircraft. I know that the operational ready rate for F-16s is approximately 90%. Our philosophy is that we train like we fight. We use our pilots and airplanes at a pretty high usage rate. A U.S. fighter pilot gets somewhere around twenty-five to thirty hours per month depending on the O&M budget. Other countries are completely different. The Egyptians. for example. may get ten hours per month. They believe that their airplanes are warfighting assets and you don't want to break them. or wear them out during peacetime. So. their usage rates are a lot different form ours. You can't have a standard support package or WRSK for different countries. Each case is different and has a unique set of characteristics.

Q: Is there any existing USAF programs that we can use to forecast a better support package to go along with Foreign Military Sales of aircraft?

A: Every country believes that they can better determine their needs than we can. Morocco believes that we initially sold them things that they will never use. and in fact have never used. It all goes back to the USAF applying our criteria to the FMS buyer. In the six months that I've been in this job. I've been involved in two definitization conferences. One for Israeli F-16s spares and one for the Egyptian F-16s. In each case it was the countries third buy. They have very definite ideas about what they want to do and believe that they know their situation better than we do. They see the teams come in from the ILC with their reams of computer printouts. They throw up their hands and tell us that they don't want a lot of stuff that they'll never use. They'll take their time and hand massage each list to their satisfaction. We can't tell them what to do.

Q: What do you see in the immediate future for USAF Foreign Military Sales?

A: First of all. we're not going to be retiring and replacing as many airplanes as we thought we were. Until just recently we had planned to retire about six hundred A&B models (F-16s) in the next three to

five years. Now, rather than building one hundred and eighty F-16s each year, we're only going to build, maybe thirty each year. There just isn't going to be a lot of airplanes for sale. All of our foreign customers are smart enough to know the newer generation aircraft have much greater capabilities and reliability and maintainability is much better. A few years ago, about five to be exact, the F-4Es were the hottest thing going. Now we can't give them away. If we retire the A-10, no one will want them. We've tried to sell them through FMS. Fairchild tried unsuccessfully for ten years to sell them as new airplanes all over the world. No one wanted a single role airplane such as the A-10. Right now every country in the world who can remotely afford the F-16 is jockying for position to acquire them. The future for FMS is to support the airplanes currently in the field and possibly new production aircraft. However, the economies of scale that has made airplanes like the F-16 so attractive to foreign buyers is likely to go away as the USAF reduces its requirements. The future of FMS is to support the aircraft currently in position around the world.

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Vita

Captain Lewis J. Edwards was born 12 June 1952 in Memphis, Tennessee. He graduated from Ripley High School in Ripley, Tennessee in 1970. He enlisted in the U.S. Army and served with both the 3d and 11th Armored Cavalry Regiments. He separated from the U.S. Army in June 1978 and entered Dyersburg State Community College, Dyersburg, Tennessee. He graduated from Memphis State University, Memphis, Tennessee with a Bachelor of Business Administration and was commissioned in the U.S. Air Force Reserve in December 1982. He served first at Carswell AFB, Texas and then at Dyess AFB, Texas as Material Management Officer in Base Supply. In January 1987, he was assigned to the Presidio of Monterey, Monterey, California for six months of foreign language training in preparation for an assignment to the Morocco/U.S. Liaison Office (MUSLO), Rabat Morocco as the USAF Logistics Officer working with the Royal Moroccan Air Force. In this position, he was responsible for 67 Foreign Military Sales contracts with a value exceeding $264 million. Upon completion of his tour in Morocco, Captain Edwards entered the School of Systems and Logistics, Air Force Institute of Technology, in May 1990.

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13. ABSTRACT *(Maximum 200 words)*

This thesis examined the concept of "ramp-to-ramp" aircraft transfers in the Foreign Military Sales Program. Avoidance of storage costs was the major benefit of this concept, and the lack of support equipment and spare parts are the major drawbacks. Planning and coordination, logistical problems, and conflicting USAF regulations, programs, and policies were examined to determine the effect each had on the "ramp-to-ramp" transfer of the last remaining F-5 aircraft to FMS countries. A study of background papers, electronic messages, minutes from meetings, and published articles was used to develop an understanding of the organization and planning process involved with the "ramp-to-ramp" transfer of aircraft. Personal Interviews described strengths, weaknesses, and problems. The concept worked better in theory than in practice. The lack of sufficient support equipment to accompany delivery of the aircraft was the most constraining factor. Political considerations, lack of logistical planning tools, and conflicting organizational goals reduced the effectiveness of "ramp-to-ramp" transfers. The problems associated with the "ramp-to-ramp" concept may be alleviated through better management of support equipment, elimination of individual organizational goals, a systematic view of FMS, and a modernization of the weapon systems in the forces of allied and friendly nations.

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