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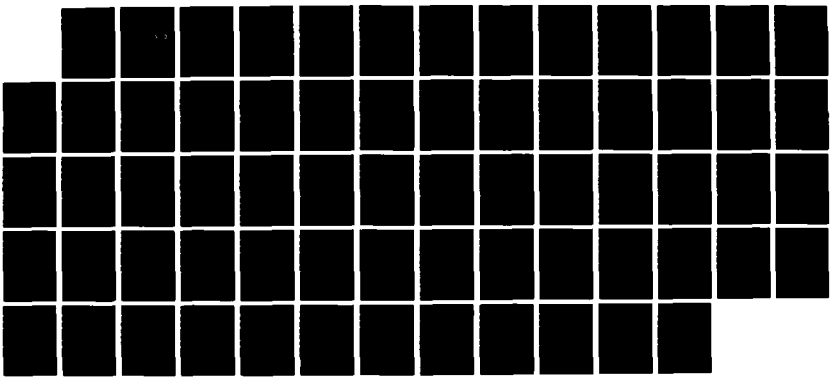

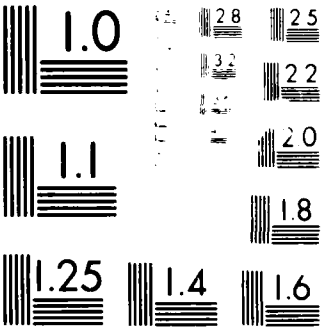
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AIR FORCE LOGISTICS MANAGEMENT CENTER

DIRECTORATE OF SUPPLY

1987 MASTER PLAN

JANUARY 1987

AIR FORCE LOGISTICS MANAGEMENT CENTER

GUNTER AFS, AL. 36114-6693

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INTRODUCTION

OBJECTIVE

Our job in the Supply Directorate of the AFLMC is to fix base-level supply problems. Formally stated, our mission is to increase readiness and combat capability by developing, analyzing, testing, evaluating, and recommending new or improved concepts, systems or procedures to enhance supply effectiveness. Informally stated, we attempt to solve today's supply problems and thereby help to shape tomorrow's supply environment.

This process can lead to many avenues, and in this paper we want to help focus on which are the best routes to take. The purpose of this master plan is to briefly outline which problems we should address, how we plan to address them, and what approximate priority they should be studied within each master plan subject area.

This plan will also serve to inform the Air Force Supply community of our projects, both active and planned. This will help avoid duplicate research, provide a means to solicit inputs from the community and help ensure a systematic approach to problem solving.

This 1987 Master Plan is an update from the original AFLMC Supply Master Plan dated March 1986.

RELATIONSHIP TO OTHER INITIATIVES

The "White Paper" on the Future Direction of Air Force Supply System," dated March 1983, outlined the Air Staff's concept of operation and direction for future supply systems. The Harvest Resource (HR) initiatives were established to serve as a means to better focus on the objectives of the "White Paper". The previous HR initiatives, plus the new HR '87 inputs, outline specific projects and responsible agencies for improving supply systems.

The projects in our Master Plan reflect the general guidance of the White Paper and attempt to dovetail with the Harvest Resource initiatives. They also support the improvement concepts outlined by AF/LEYS in Harvest Excel, Harvest 2000 and Harvest Technology. The projects reflect the concerns of members of our Board of Advisors, the Air Force Stockage Advisory Board (AFSAB) and the SBSS Advisory Group. Inputs from other agencies, such as the Chapter 14 and MICAP Improvement Workgroups are also valuable sources for our studies. Further, many of our projects complement each other either directly or as spinoff studies.

WORKLOAD PRIORITY

Estimated completion dates are shown for each active project currently being studied. The pending projects in each subject area are listed in the approximate priority we plan to study them. We do not plan to finish all pending projects by the end of 1987; resources preclude that from happening. Also, priorities may shift for a number of reasons. Future events in the

Supply world may dictate some projects be modified, delayed, or even canceled altogether; related projects may be worked together; and special skill requirements of project managers often dictate rearrangement of project start dates. Nevertheless, this plan attempts to focus on those issues that should be worked first, given resource limitations.

MASTER PLAN SUBJECT AREAS

OVERVIEW

Because of the many and varied issues facing the supply community, we've found it beneficial to work from an overall master plan. Each of our projects fall into one of five different master plan subject areas: Contingency Planning, Repair Process, Productivity Enhancements, Fuels, and Stockage Policies. Each subject area will be addressed in the following paragraphs, along with the current and pending projects in that subject area. We'll begin on the next page with the first subject area, Contingency Planning.

CONTINGENCY PLANNING

The Air Force's primary supply mission is to provide timely and accurate support to combat operations. In this first subject area, we are examining selected problem areas dealing with the effectiveness and efficiency of that support.

Many of the studies, both active and pending, involve WRSK/BLSS support. Early next year we'll begin an overall look at this critical area to help focus on which WRSK/BLSS topics should be tackled first. More details on this overall study, entitled "WRSK Master Plan" are provided later in this section.

ACTIVE PROJECTS

1. Title: WRSK/BLSS Review Cycle

2. Project Sponsor: HQ TAC/LG

3. Project OPR: HQ TAC/LGSW

4. Project Co-Sponsor(s): HQ AFLC/MMM

5. Project Manager: AFLMC/LGS, Capt Burleson, AUTOVON 446-4165

6. Problem Statement: We were tasked by HQ TAC/LG to analyze the WRSK review cycle. Existing systems require extensive manual effort. The annual WRSK review cycle often consumes a year of coordination prior to publication of DO40 WRSK authorizations. The annual reconciliation of individual WRSKs can take as long as three months. Inventory manager supportability reviews and coordination with the WRSK System Program Managers often exceed 3 months. Both procedures (wholesale and retail) are antiquated and manpower intensive to the point that WRSK authorizations often lose their credibility by the time they get to the field.

7. Project Objectives: Conduct a complete analysis of the WRSK review cycle to: 1) Streamline the process, 2) Identify improvement areas, and 3) Identify automation requirements. The analysis will include processing at the wholesale, MAJCOM and base level.

8. Technical Approach: Review stockage policy, data base design, management information systems, and system interfaces. Learn the current system, analyze it, and identify the functional requirement(s) the system satisfies. Analyze existing and alternative stockage policy for both the entire WRSK and the formulas used to tailor the WRSK to a specific base. Develop a systems architecture (data bases, data interfaces, and management reporting) which will satisfy the functional requirement.

9. Anticipated Completion Date: February 1987.

1. Title: Supply Wartime Planning and Execution Guide

2. Project Sponsor: HQ USAF/LEY

3. Project OPR: HQ USAF/LEYS

4. Project Co-Sponsor(s):

5. Project Manager: AFLMC/LGS, Capt Burleson, AUTOVON 446-4165

6. Problem Statement: Planning is fundamental to the supply wartime mission at both the MAJCOM and base levels. The task of the supply planner is to draw together from a myriad of sources all the guidance and information needed to assemble an effective and executable supply plan or annex. This task is complicated by the fact that there is no comprehensive source of information applicable to supply planning. The average supply planner spends the majority of his/her tour as a planner just becoming familiar with all the sources of guidance and information he/she needs to develop effective and executable supply plans. What is needed is a comprehensive source of information that draws all this material together, boils it down to its bare essence, and spells out in step by step manner the procedures to follow when doing predeployment plans, when preparing to actually deploy, and while deployed.

7. Project Objectives: Develop a single comprehensive document that will serve as a guide to the many and varied tasks and responsibilities of the base-level supply planner.

8. Technical Approach: This project will draw heavily on the efforts of others, specifically the "Supply Wartime Planner's Guide" which was prepared by HQ MAC/LGS and the "Wartime Supply Concept" which was prepared by HQ USAF/LEYS. The "Combat Supply Concept of Operation," AFLMC report number LS820801 will also be used as a source. Our first step will be to combine the information in these three sources into one comprehensive, logically organized document. We will reformat and rewrite as necessary to improve readability and comprehendibility. Our second step will be to develop in a checklist format the tasks a typical base supply planner would have to follow when doing predeployment supply planning, when preparing to actually deploy, and while deployed. These checklists will be general enough in nature to apply to most base-level supply planners and yet specific enough to give the base-level planner who only plans on a part time basis a logical and easy to understand guide to the process of planning and of executing those plans.

9. Anticipated Completion Date: April 1987.

1. Title: Mobility Bag Inventory System

2. Project Sponsor: HQ TAC/LG

3. Project OPR: HQ TAC/LGSE

4. Project Co-Sponsor(s): AFESC/DEMG

5. Project Manager: AFLMC/LGS, Capt Antalek, AUTOVON 446-4165

6. Problem Statement: During base visits, AFLMC personnel found that inventory control of mobility bags is a time-consuming manual effort which is prone to error. The primary problem is the dynamic nature of the bags, which are frequently used in deployment--both real and practiced. There are about 9,000 bags at most bases, with an average of 10-15 line items in each bag, numerous different sizes, and multiple substitute or interchangeable items.

7. Project Objectives: Develop an automated capability to improve the inventory control of mobility bags and their contents to improve capabilities to support deployment missions.

8. Technical Approach: Develop generic (prototype) programs to be used in all MAJCOMs using high-level COBOL language. Evaluate the prototype system and user's guide for operation and user satisfaction at Hill AFB, UT and HQ TAC.

9. Anticipated Completion Date: June 1987.

PENDING PROJECTS

1. Title: WRSK Master Plan

2. Project Sponsor: AFLMC/LGS

3. Project OPR: AFLMC/LGS

4. Project Co-Sponsor(s):

5. Project Manager: AFLMC/LGS, Capt Burleson, AUTOVON 446-4165

6. Problem Statement: There are a myriad of WRSK/BLSS problems facing the WRM community. Many of these issues have been formally identified to us for study and are pending review. Still others have not been formally identified and are currently not scheduled for study. We don't have the resources to tackle all the topics at once; therefore, we need to develop a prioritized approach to working these critical issues.

7. Project Objectives: Develop a "game plan" for the study of WRSK/BLSS problems, and assign the approximate priority in which they should be studied.

8. Technical Approach: Review the WRSK/BLSS problem topics currently awaiting resources. Also, by contacting Air Staff and MAJCOM WRM representatives, add any other major WRSK/BLSS topics requiring study. Define the nature and scope of each of the problems, plus determine the resources required to complete the study. Finally, after a review by the WRM community, prioritize them for study and publish a master plan outlining our approach.

[illegible] Determination Processes for Nonairborne WRSK

[illegible]

[illegible]

[illegible]

. Project Manager: AFLMC/LGS, Capt Burleson, AUTOVON 446-4165

. Problem Statement: Currently, nonairborne WRSK are computed based on [illegible] rather than demand factors. A valid requirement system has not been developed for these low density systems. This area has been looked at and a AFIT contracted out for a mathematical model. However, HQ USAF/LEYS and the WRM Chapter 14 Workgroup asked the AFLMC to review the contract model and provide comments and/or alternative solutions.

. Project Objectives: Review a contractor provided model to forecast low density communication items WRSK requirements. Provide comments and recommend alternative solutions. Also, review how to best determine requirements for other nonairborne WRSK, such as for vehicles.

. Technical Approach: The mathematical model developed by the contractor is based on demand (or failure) per operational hour, per on/off switch and per standby hour. Failure of electronic items tends to be based on the number of times turned on and off rather than hours the equipment is used. We will examine this model to see how well it fits actual demand usage. We will also try to use or modify Dyna-METRIC to provide an estimate of parts failures and requirements determination. We'll further develop criteria to be used to determine other nonairborne WRSK requirements, as for vehicles.

1. Title: WRSK vs BLSS Requisition Priorities

2. Project Sponsor: AF/LEX

3. Project OPR: AF/LEX

4. Project Co-Sponsor(s):

5. Project Manager: AFLMC/LGS, Capt Burleson, AUTOVON 446-4165

6. Problem Statement: Overseas units have expressed concern that CONUS WRSK shortages are filled before overseas BLSS stocks are replenished. With the premise these overseas units are "first to fight," they believe they should have a higher stock replenishment priority in order to compete with WRSK.

7. Project Objectives: Review current requisition replenishment priorities for WRSK and BLSS.

8. Technical Approach: Using the supply data bank and Dyna-METRIC, examine alternative replenishment approaches. Make recommendations for change, if appropriate.

1. Title: Requirements Determination Processes for EOQ Assets in WRSK/BLSS

2. Project Sponsor: HQ USAF/LEY

3. Project OPR: HQ USAF/LEYS

4. Project Co-Sponsor(s):

5. Project Manager: AFLMC/LGS, Capt Burleson, AUTOVON 446-4165

6. Problem Statement: Currently, each MAJCOM computes their own range and depth of EOQ assets to place in WRSK/BLSS. Although most MAJCOM programs are a variation of a TAC program, procedures vary widely. As a result, similar type units may have widely dissimilar EOQ assets authorized. The various MAJCOM programs and other alternatives need to be evaluated to come up with a standard method of computing EOQ WRSK. This subject was brought up at the April 1984 Chapter 14 Work Group Meeting, and the proposal was submitted by HQ USAF/LEYS.

7. Project Objectives: To provide a standard method to compute EOQ asset requirements in the WRSK/BLSS.

8. Technical Approach: We will use Dyna-METRIC to determine requirements and test alternatives.

1. Title: AFCC WRM Program Management

2. Project Sponsor: HQ USAF/LEY

3. Project OPR: HQ USAF/LEYS

4. Project Co-Sponsor(s): HQ AFCC/LG

5. Project Manager: AFLMC/LGS, Capt Burleson, AUTOVON 446-4165

6. Problem Statement: The AFCC combat support mission is performed by the Combat Communication and EI units, both active and ANG. While WRM assets have been allocated to meet these missions, there is some doubt as to whether the assets can support missions as currently configured. Questions repeatedly raised: Can the AFCC WRM program support these units and the equipment they employ? Are the WRKSs configured properly? Is the level of support realistic in light of funding constraints? Should there be only WRSK or should there also be BLSS?

7. Project Objectives: To determine if the requirements for AFCC WRM kits should be changed for improved support of communications equipment while deployed.

8. Technical Approach: The model we tentatively have selected to use is the Dyna-METRIC model. HQ AFCC/LGSO has agreed to provide the necessary data. This study may be linked to one entitled "Requirements Determination Processes for Nonairborne WRSK" mentioned earlier.

1. Title: Impact of Cannot Duplicate (CNDs) Repair Actions on WRSK Storage

2. Project Sponsor: HQ USAF/LEY

3. Project OPR: HQ USAF/LEYS

4. Project Co-Sponsor(s):

5. Project Manager: AFLMC/LGS, Capt Burleson, AUTOVON 446-4165

6. Problem Statement: Currently, demand data resulting from turn-ins marked with maintenance action taken Code B, Cannot Duplicate (CND), is not included in determining demand levels. The logic is since there was no failure, there was no demand. However, the "Cannot Duplicate" asset is not available to put on a weapon system while in the repair cycle. As a result, there is no stock level computed for the period of time it takes to test an item and determine whether or not it is broken. It also may be causing the depth of stock computed for WRSK kits to be understated. We intend to measure the cost and mission impact of including CND in both RR and RRR WRSK kit computations and POS stock computations.

7. Project Objectives: Determine the impact of CNDs on POS and WRSK stock levels with respect to cost and mission capability. Recommend changes to reparable stockage policy for either peacetime or wartime or both.

8. Technical Approach: Use the transaction history tapes in the supply data bank to measure the percent of TINs marked with maintenance action taken code B (CND). Using simulated data, compute some repair cycle demand and RRR WRSK levels assuming CND is counted as a demand. Measure the cost, stockage and operational performance with and without the demand data using CND demands. Compare the results of this and make conclusions and recommendations.

1. Title: Variance-to-Mean Ratio for Mini Dyna-METRIC

2. Project Sponsor: HQ AFLC/XR

3. Project OPR: HQ AFLC/XRS

4. Project Co-Sponsor(s): HQ TAC/LGS

5. Project Manager: AFLMC/LGS, Capt Burleson, AUTOVON 446-4165

6. Problem Statement: Our Mini Dyna-METRIC model does not include the capability to assume a variance-to-mean ratio other than 1. Recent AFLMC AWP and RAND studies have shown investment items can have variance-to-mean (VTM) ratios greater than 1. Underestimating the VTM ratio overstates our capability.

7. Project Objectives: Modify our Zenith Mini Dyna-METRIC model to have a VTM ratio greater than 1.

8. Technical Approach: Add the code to allow Mini Dyna-METRIC to build demand patterns with a VTM ratio greater than 1. This means using a negative binomial distribution to model demand. The big Dyna-METRIC has the negative binomial code; however, we will have to fit it onto the Zenith microcomputers. The user's guide will also have to be modified.

REPAIR PROCESS

In this second master plan subject area, we'll work closely with our AFLMC Maintenance and Transportation counterparts to study the issues that hamper our base-level repair efforts.

ACTIVE PROJECT

1. Title: Special Purpose Reparables Authorized Maintenance (SPRAM) Enhancements

2. Project Sponsor: HQ USAF/LEY

3. Project OPR: HQ USAF/LEYS

4. Project Co-Sponsor(s): HQ USAFE/LG, HQ SAC/LG

5. Project Manager: AFLMC/LGS, CMSgt Hargrave, AUTOVON 446-4165

6. Problem Statement: There is a question as to whether current procedures are adequate for identifying Special Purpose Recoverables Authorized Maintenance (SPRAM) assets for both new and existing weapons systems. There is no standard procedure to identify SPRAM items, especially for existing weapons systems. The type and number of SPRAM assets required can vary from base to base depending upon type of maintenance organization and maintenance concepts employed. Lack of SPRAM assets impacts on the troubleshooting and repair capability at base level. Inadequate identification of SPRAM needs also impacts the Air Logistics Centers (ALCs) relative to computation of total SPRAM requirements.

7. Project Objectives: Study SPRAM management from both the supply and maintenance perspective and develop standardized procedures for identifying SPRAM assets, as appropriate.

8. Technical Approach: Research existing policy and procedures at all levels to include ALCs and base level. Talk with people closely involved with SPRAM procedures, to include ALC provisioning experts as well as maintenance and supply personnel in the field. Gather data on SPRAM assets to determine standardization feasibility.

9. Anticipated Completion Date: August 1987.

PENDING PROJECTS

1. Title: Not Reparable This Station (NRTS) and Condemned Time for Critical Items

2. Project Sponsor: HQ USAF/LEY

3. Project OPR: HQ USAF/LEYS

4. Project Co-Sponsor(s): HQ TAC/LG

5. Project Manager: AFLMC/LGS, Maj Matthews, AUTOVON 446-4165

6. Problem Statement: When an item goes critical we immediately begin taking extraordinary actions to expedite repair actions. The effect of these extraordinary actions is to move critical items through the system much faster than normal. This causes NRTS/condemned time on these items to be significantly lowered which reduces the base-level requirement. This, in turn, reduces the worldwide requirement for that part. The problem is when the item is taken off the critical list the extraordinary maintenance actions cease, causing NRTS/condemned time to rise along with the worldwide requirement. This can immediately put the item back in short supply until it again becomes critical.

7. Project Objectives: Determine the impact of reduced NRTS/condemned time for critical items. Determine the impact of putting a floor on NRTS/condemned time for critical items. Select a floor that best limits the effect of extraordinary maintenance for critical items without inflating the true requirement, if deemed appropriate.

8. Technical Approach: Use supply data bank item transaction and repair cycle record tapes. Compute average NRTS/condemned time and demand level for items before and after they become critical. Count the number of these items that go critical again. Examine the data characteristics of these items to see if reduced NRTS/condemned time contributed to the return. Determine if putting a floor on the NRTS/condemned time would have prevented the return of these items to the critical item list. Select the floor that prevents the most repeats without over-inflating the requirement.

PRODUCTIVITY ENHANCEMENTS

As the title suggests, these are projects designed to improve the productivity of our base-level supply operations. The projects in this third subject area cover a myriad of topics, and the solution of many of the problems under study involve the use of microcomputers. Many of these projects reflect the concept outlined in Harvest Excel, explained earlier.

ACTIVE PROJECTS

1. Title: Enhanced Listings Management - Stock Control

2. Project Sponsor: HQ SAC/LG

3. Project OPR: HQ SAC/LGS

4. Project Co-Sponsor(s): SSC/SMS

5. Project Manager: AFLMC/LGS, Ms Kendall, AUTOVON 446-4165

6. Problem Statement: Many listings and card decks are used within stock control for management and monitoring purposes. There is a need to evaluate and develop microcomputer capability to perform these time-consuming tasks.

7. Project Objectives: Place Exception Code Control (ECC) and Funds Requirements Card (FRC) data on the Z100/Z-248/Sperry PC and make the software available Air Force wide.

8. Technical Approach: Research, evaluate, and discuss with the users in the field the processes involved with both card decks. Develop the microcomputer capability to streamline the processes and eliminate manual, time-consuming work. Include the interface with the Sperry S1100-60 mainframe. Develop interim interface procedures with the Sperry 1100-60 to be used until Standard Systems Center (SSC) workload permits SSC development.

9. Anticipated Completion Date: January 1987.

1. Title: Enhanced Equipment Management

2. Project Sponsor: HQ USAF/LEY

3. Project OPR: HQ USAF/LEYS

4. Project Co-Sponsor(s): ANG SC/LGS

5. Project Manager: AFLMC/LGS, Mr Edwards, AUTOVON 446-4165

6. Problem Statement: A problem exists in reporting the Daily Equipment Transaction Report (D16). This is a daily, base-level generated S1100/60 report of authorized and in-use equipment to the central bank at McClellan AFB, California. Edits for errors are performed at McClellan and not the base. When errors are detected, an error report is returned to the base and generally no future reports may be processed until the error is corrected and transceived back to the central bank. Further, since this information interfaces with other reports in the central bank this also causes processing and content problems with these reports. Therefore, since the D16 data influences decisions concerning such things as equipment buys, equipment available to deploy and other key facets of AF equipment management, decisions are being made using potentially inaccurate information.

7. Project Objectives: (1) From a systems perspective, examine and identify problems in the D16 reporting procedures from time of base supply generation to the time the report reaches the equipment central bank. (2) Examine and identify problems resulting from the D16 interfacing with other equipment central bank reports. From both of these objectives, recommendations will be made to correct problems identified.

8. Technical Approach: In this project we will perform a systems analysis of the D16 reporting system. By studying the who, what, when, where, why, and how of data currently contained in the system, we will define the functional requirement. With this understanding we can then compare the needs of base, MAJCOM and ALC managers to the data now in the D16 reporting and interfacing processes and make recommendations for system improvement.

9. Anticipated Completion Date: April 1987.

1. Title: Commanders Guide for Resource Discipline

2. Project Sponsor: AFLMC/LGS

3. Project OPR: AFLMC/LGS

4. Project Co-Sponsor(s):

5. Project Manager: AFLMC/LGS, Capt King, AUTOVON 446-4165

6. Problem Statement: Commanders are responsible for resource discipline. The problem is the guidance, information, references, and other sources of help needed in maintaining resource discipline comes from a myriad of sources. This project would consolidate this information for commanders to aid in resource protection, supply discipline, and fraud, waste, and abuse.

7. Project Objectives:

a. Determine the need for a handbook on resource discipline by identifying guidance/directives currently provided to commanders.

b. Describe common physical security and resource protection problems and provide suggestions to solve these problems.

c. Outline basic supply requirements and procedures that a new commander needs to know.

d. Outline basic procedures covering a fraud, waste, and abuse program with emphasis on how to identify common problem areas and where to go for help.

e. Provide a glossary of common acronyms, terms, and definitions, and references for further information.

8. Technical Approach:

a. Establish a baseline of available information and level of knowledge. Extract and consolidate known requirements and official guidance that impacts commanders.

b. Describe in layman's terms the basic supply system, emphasizing those functions a commander needs to know or be familiar with.

c. Extract and consolidate known requirements and guidance that impacts commanders. Describe a methodology to establish a fraud, waste, and abuse program.

d. Use data and information to form an easy to follow guide to enhance understanding.

e. Provide a glossary of useful terminology common to this topic and provide a list of references for further information.

9. Anticipated Completion Date: May 1987.

1. Title: Supply Officer Recruitment

2. Project Sponsor: AFLMC/LGS

3. Project OPR: AFLMC/LGS

4. Project Co-Sponsor(s):

5. Project Manager: AFLMC/LGS, Capt King, AUTOVON 446-4165

6. Problem Statement: In the past several years there has been an increasing concern over the quality of officers entering the supply career field. While supply has recruited many quality officers, the perception is many other quality officer candidates are not choosing supply as their career choice. Assuming this perception is correct, the question is, "Why?"

7. Project Objectives:

a. Study the perception and attitudes of officer candidates and Supply officers to determine what attracts an officer candidate to a career field and what attracted Supply officers to the Supply career field.

b. Draw conclusions from officer candidates and Supply officers' responses to determine what could be done to make the Supply career field more appealing to ROTC and Air Force Academy officer candidates.

c. Make recommendations to HQ USAF/LEYS on what could be done to improve the appeal of the Supply career field.

8. Technical Approach: Use an interviewing technique with officer candidates, as well as officers from all sources of commissioning, to answer the concern expressed in the problem statement above.

a. Via interviews, determine:

(1) What influences a candidate's decision to enter a selected career field.

(2) Why the supply career field is often not viewed as an attractive career choice for officer candidates.

(3) What can be done to make the supply career field more attractive.

(4) What methods would best "sell" the supply career field to officer candidates.

b. Draw conclusions from interview responses and develop recommendations on what could be done to enhance the appeal of the Supply career field to ROTC and Air Force Academy officer candidates. (The deliverable will be an AFSC report summarizing interview responses, and the student's conclusions and recommendations on this subject.)

9. Anticipated Completion Date: May 1987.

1. Title: MAJCOM M32 Data Improvements

2. Project Sponsor: HQ SAC/LGS

3. Project OPR:

4. Project Co-Sponsor(s): HQ USAF/LEYS, SSC/SMSF

5. Project Manager: AFLMC/LGS, SMSgt Eldridge, AUTOVON 446-4165

6. Problem Statement: The present method of transferring M32 data from base level to MAJCOM is error prone, time consuming, and in need of improvement. Bases transfer this data via tape or card to their MAJCOM. Besides the time it takes to get the data to MAJCOM, there are usually problems loading the data to the MAJCOM data bank (D013/DW system) on the Honeywell 6000 computer. When dealing with cards, there is always the possibility of misreads, mispunches, or mishandling of large card decks resulting in lost cards or cards out of sequence. The transfer by tape is more accurate than cards, but is slow. A more viable and reliable data transfer method is needed.

Once the data arrives at MAJCOM, procedures for scheduling and updating the MAJCOM data bank are time-consuming and cumbersome. It sometimes takes the monitor up to 4 or 5 days to get a completed analysis product depending upon the workload on the Honeywell 6000 computer. It is a frustrating system that is not very responsive to the needs of the user.

7. Project Objectives:

a. Develop a methodology for base-level supply accounts to transfer M32 data accurately and timely to MAJCOMs.

b. Develop a methodology or system for the MAJCOMs to load the M32 data to a data base for easy access and performing selective analysis.

c. Provide an analysis capability for MAJCOM staff personnel to use with this transferred M32 data.

8. Technical Assessment:

a. AFLMC/LGS will provide copies of the HQ TAC/LGS M32 download and analysis program to all MAJCOMs for review. This will be primarily an AFLMC/LGS effort during which the TAC program will be reviewed and instructions developed so MAJCOMs can install and run the program on a Zenith Z-100. Sample report output will also be provided to the MAJCOMs so those MAJCOMs who do not have a Zenith Z-100 microcomputer can still analyze the types of outputs the program will produce.

b. After MAJCOM evaluation of the TAC download and analysis program, if extensive modifications are required, AFLMC/LGY assistance will be needed to modify the software prior to providing the product to the field. The product ultimately developed will be generic in nature to allow different MAJCOMs to customize it for their use. Further, this product will be developed to run on the Zenith and Sperry series microcomputer.

c. AFLMC/LGS will provide functional expertise on the types of data MAJCOM/LGS staff personnel will require for analysis. LGS will also provide a user's guide for the final analysis program. If the final analysis program is the result of extensive modifications, AFLMC/LGY personnel will complete a programmer's guide; otherwise the TAC system documentation will be used.

9. Anticipated Completion Date: June 1987.

1. Title: Improved Inventory Analysis Program

2. Project Sponsor: HQ TAC/LG

3. Project OPR: HQ TAC/LGS

4. Project Co-Sponsor(s):

5. Project Manager: AFLMC/LGS, Capt Antalek, AUTOVON 446-4165

6. Problem Statement: Analyzing inventory adjustments provides an indication of whether or not significant problems exist and if increase management attention is required. Processing the M10 blanks the inventory adjustment record monthly. Data required for a thorough analysis cannot be made based on one month's data. There is currently no automated capability to identify inventory adjustment trends within the SBSS.

7. Project Objectives: Develop a microcomputer package to:
a. Retain the data needed for in-depth inventory analysis.
b. Provide base-level managers the statistical tools necessary to analyze the inventory data.

8. Technical Approach: Analyze the functional requirements using AFLMC Report LS850352, "Enhanced Inventory Procedures," as a guideline. Develop program(s) to improve base-level inventory analysis.

9. Anticipated Completion Date: August 1987.

1. Title: Air Force Management of Non-Catalogued Items

2. Project Sponsor: AFLC/XR

3. Project OPR: AFLC/MMLIC

4. Project Co-Sponsor(s): HQ SAC/LGS

5. Project Manager: AFLMC/LGS, Ms Kendall, AUTOVON 446-4165

6. Problem Statement: An Air Force IG Report (PN 84-608, 1 Dec 83 - 14 Jun 84) indicated the Air Force is disposing of needed assets, particularly locally manufactured or locally purchased items. The problem is especially acute for non-catalogued (part, or 'P' numbered and locally assigned, or 'L' numbered) items because there is no central review of non-catalogued items. Current criteria to catalogue these items seems overly restrictive (3 demands in 180 days). The IG report also documented multiple stock numbers loaded for the same item at the same base. The Air Force procedures for non-catalogued items need review.

7. Project Objectives: Evaluate alternative policies to: 1) research non-catalogued items, 2) Stock list non-catalogued items, 3) Report non-catalogued items excess.

8. Technical Approach: Conduct a system analysis of Air Force procedures for non-catalogued items. Then, using the Supply Data Bank, analyze the demand patterns of non-catalogued items to determine when to catalogue L and P numbers. Determine if using the new criteria provides increased mission capability at a reasonable cost.

9. Anticipated Completion Date: August 1987.

PENDING PROJECTS

1. Title: Enhanced Materiel Storage and Distribution

2. Project Sponsor: HQ TAC/LG

3. Project OPR: HQ TAC/LGS

4. Project Co-Sponsor(s): HQ USAF/LEYS

5. Project Manager: AFLMC/LGS, Capt King, AUTOVON 446-4165

6. Problem Statement: Materiel storage is a labor intensive, mostly manual process. There is a potential for improving processing efficiency.

7. Project Objectives: Conduct a systems analysis of all the materiel storage and distribution functional areas. Identify inefficient practices and recommend improved policy or procedures as appropriate.

8. Technical Approach: A detailed systems analysis will be conducted, to include a review of the flow of forms and property, a functional review of the tasks, and the computer processes and reports. Base-level personnel will be interviewed on specific issues. The study will be divided functionally to include inspection, receiving, LP receiving, pick up and delivery, and storage and issue.

1. Title: Improved MICAP Management

2. Project Sponsor: HQ SAC/LG

3. Project OPR: HQ SAC/LGS

4. Project Co-Sponsor(s): SSC/SMS

5. Project Manager: AFLMC/LGS, CMSgt Hargrave, AUTOVON 446-4165

6. Problem Statement: While the Air Force has made considerable efforts to improve MICAP management, the concern of senior Supply leadership is that efforts to date have not fully satisfied MICAP base-level, functional needs. SAC has recommended the development of a microcomputer program to help manage MICAP items. Problems with the current automated MICAP system is MICAP data is not maintained long enough and not readily accessible for analysis, there is not enough computer file space to record actions taken to resolve MICAP conditions, and there are no tools to link MICAPs to possible causes--like failures of stockage policy.

7. Project Objectives: Analyze and document the base-level functional need for MICAP management. If appropriate, develop a microcomputer program (or programs) to improve base-level management of MICAPs.

8. Technical Approach: Conduct a thorough systems analysis of the base-level system and the functional requirements. This would include a review of existing Sperry 1100/60 software, MAJCOM-developed microcomputer systems, and any other locally developed systems. Document the functional requirement and jointly develop with SSC a base-level MICAP management system utilizing the features and capabilities of the S1160 and microcomputers.

1. Title: Supply Accountability Rules

2. Project Sponsor: HQ USAF/LEY

3. Project OPR: HQ USAF/LEYS

4. Project Co-Sponsor(s): SSC/SMS

5. Project Manager: AFLMC/LGS, Capt King, AUTOVON 446-4165

6. Problem Statement: The current supply system has a myriad of accountability rules. In many cases, these rules were established years ago and may no longer apply. Examples of these accountability rules include: 1) equipment accountability, 2) repair cycle accountability for XF3 assets, and 3) line item accounting in the retail outlet.

7. Project Objectives: Identify all supply accountability rules. Identify the basis for the rule (for example; public law or Air Force policy) and answer the following questions: What is the source of the current rules? What is the impact of the current rules? Do we comply with the original intent of the accountability rule? Should we change some or all accountability rules?

8. Technical Approach: The study will be conducted in two phases: Phase I will be a literature search to identify the rules of accountability and the basis for the rules. Phase II will be to determine whether rules are still required. The AFLMC data base will be used to determine the scope and impact of these rules. A functional analysis will be conducted by the Supply Directorate (with coordination from SSC) with system and data analysis performed by AFLMC Analysis Directorate.

1. Title: Problem Item Tracking

2. Project Sponsor: HQ TAC/LG

3. Project OPR: HQ TAC/LGS

4. Project Co-Sponsor(s): HQ USAF/LEY

5. Project Manager: AFLMC/LGS, Ms Kendall, AUTOVON 446-4165

6. Problem Statement: The Requisitioning Unit in base supply annotates 'problem item' data (not limited to MICAP items) by handscribing data onto manual files. To provide status, stock control personnel must sort through the file manually. Often times, the problem item must be grouped (for example, aircraft brakes, runway barrier system, or tires) then typed or consolidated for review. We need to determine if there is a better way to manage this workload than handscribing, sorting, typing and maintaining a manual file.

7. Project Objectives: Analyze the current requirements for keeping manual files and recommend changes. Develop a microcomputer application, if appropriate. Include recommended methods to identify the cause and solve the problem.

8. Technical Approach: Discuss the use of these manual files with base-level users. If appropriate, determine the applicable data base management system and develop a microcomputer application to eliminate manual, time-consuming work. Provide capability to extract by 'group' of items. In addition, provide tools to help stock control personnel determine the cause of the problem.

1. Title: Streamlining Equipment Procedures

2. Project Sponsor: HQ SAC/LG

3. Project OPR: HQ SAC/LGS

4. Project Co-Sponsor(s): HQ USAF/LEYS

5. Project Manager: AFLMC/LGS, Ms Kendall, AUTOVON 446-4165

6. Problem Statement: Equipment Management in base-level supply uses many listings and card decks. Thumbing through these listings and card decks is a time-consuming task. The Air Force needs to determine if there are better ways to manage this area than through the use of card decks and listings.

7. Project Objectives: Determine information requirements for Equipment Management. Analyze current methods and recommend changes. Develop microcomputer applications where appropriate to eliminate manual, repetitive work.

8. Technical Approach: Identify the listings and/or card decks used. Identify the information requirements. Research, evaluate, and discuss with the users in the field their use of card decks or listings. If appropriate, develop the capability on a microcomputer to eliminate manual, time-consuming work. Coordinate effort with SSC/LGS and the Worldwide Keypunch Replacement Program (WKRP).

1. Title: Supply Officer Career Counseling

2. Project Sponsor: HQ USAF/LEY

3. Project OPR: HQ USAF/LEYS

4. Project Co-Sponsor(s):

5. Project Manager: ALFMC/LGS, Capt King, AUTOVON 446-4165

6. Problem Statement: Discussions during the Supply Officer Force Management Working Group emphasized that one of the most important things that we can do to help build a strong supply officer corps is to provide appropriate career counseling. The concensus of the working group was that no amount of extraordinary recruiting efforts, even including 100 percent accession of volunteers, can offset a bad initial introduction into Supply. Furthermore, even after that initial introduction our supply officers need continuous career counseling to, in some cases, offset misconceptions about the supply career field. Reference HQ USAF/LEYS message, 151806Z Sep 86, "Supply Officer Career Counseling."

7. Project Objectives: The objective of this project is to identify effective career counseling techniques and ideas. These techniques/ideas will be reviewed and a Supply officer career counseling program developed for the Supply community. This program will offer career counseling guidance for the Supply Squadron Commander and MAJCOM staff supervisors. It may be in the form of a career counseling pamphlet or checklist to be included in AFP 67-6.

8. Technical Approach: HQ USAF/LEYS has surveyed the MAJCOMs and provided MAJCOM responses to the AFLMC for review. The AFLMC will review, investigate as needed, and consolidate MAJCOM responses for development of the Supply communities career counseling program. Other military and civilian career counseling references will also be used, as appropriate.

1. Title: Report of Discrepancy (ROD) Program Enhancement

2. Project Sponsor: HQ USAF/LEY

3. Project OPR: HQ USAF/LEYS

4. Project Co-Sponsor(s):

5. Project Manager: AFLMC/LGS, Ms Kendall, AUTOVON 446-4165

6. Problem Statement: Three (new, open and closed) Report of Discrepancy (ROD) files currently must be "rummaged through" to locate a particular report. If and when the desired report is found, pencil notations must be made concerning follow up or recurring problems. The reports are often smudged or illegible, making them difficult to read and find. All analysis to identify causes and trends are manual. As a result, trends are seldom identified and long term corrective action is not taken.

7. Project Objectives: Analyze current methods to manage Reports of Discrepancy and recommend changes, if appropriate. Develop microcomputer application to eliminate manual repetitive work, if practical.

8. Technical Approach: Identify the files used and information requirements. Research, evaluate and discuss with users in the field. If appropriate, develop microcomputer applications to eliminate manual time consuming workload.

1. Title: Base Supply Reports Review

2. Project Sponsor: HQ USAF/LEY

3. Project OPR: HQ USAF/LEYS

4. Project Co-Sponsor(s):

5. Project Manager: AFLMC/LGS, Capt King, AUTOVON 446-4165

6. Problem Statement: Base supply generates many management reports which take considerable processing time. A detailed analysis should be conducted on these reports to determine if: the report is required, data can be attained from another available source, or on-line exception reports could replace current management listings.

7. Project Objectives: Determine if any of the management reports currently being processed by the Base Supply computer system can be: deleted, processed less frequently, or consolidated with other reports in order to reduce reports processing time and provide more on-line time.

8. Technical Approach: We will review current base supply reports processing and attempt to identify reports that can be deleted or consolidated with other reports. Inputs from MAJCOMs will be solicited and evaluated.

FUELS IMPROVEMENTS

Fuels is an area often neglected by the supply community. In this fourth subject area, we plan to continue to expand our efforts to improve fuels operations. We'll work SSC and AF/LEYSF to ensure our fuels improvement projects dovetail.

ACTIVE PROJECTS

1. Title: Fuels Capability Assessment Functional Description

2. Project Sponsor: HQ MAC/LG

3. Project OPR: HQ MAC/LGS

4. Project Co-Sponsor(s): SSC/SMS

5. Project Manager: AFLMC/LGS, Capt King, AUTOVON 446-4165

6. Problem Statement: Base-level fuels managers need to know if they can support a sortie generation schedule. The assessments done today are on a macro level, consider few input variables, and depend upon the judgment and experience of base fuels managers and the robustness of the system. Using current assessment methods, unforeseen problems, such as trucks queuing at the fillstand, have prevented timely fuels support. Base fuels managers need an objective analytical tool to assess sortie generation support. Our proposal first develops a functional description for Air Force fuels to review and coordinate. A follow-on project will develop software necessary to satisfy the functional requirement.

7. Project Objectives: Develop a functional description for computer software to assess fuels sortie generation support capability.

8. Technical Approach: Define the need for a refueling Capability Assessment Model in terms of what questions such a model will be used to answer. Identify any existing models which could serve as the basis for development of a Fuels Capability Assessment Model. Flowchart, understand the input and output, review the logic and behavior of existing models (especially the Refueling Capability Assessment Model - RCAM). Develop a functional description for Air Force review and coordination.

9. Anticipated Completion Date: February 1987.

1. Title: Fuels Automated Inspection Program

2. Project Sponsor: HQ MAC/LG

3. Project OPR: HQ MAC/LGS

4. Project Co-Sponsor(s): SSC/SMS

5. Project Manager: AFLMC/LGS, Capt King, AUTOVON 446-4165

6. Problem Statement: AFR 144-1 is the primary governing directive for fuels operations, and it generally lists required inspections. There are so many documents requiring inspections it is difficult for fuels supervisors to manage the inspection system. In addition, the method to track and document inspections is manual and not conducive to management analysis.

7. Project Objectives: Design a user-friendly, generic program on the Z-248/Z-100/Sperry PC to maintain general POL and POL inspection information. Design and develop an information system to allow inspection scheduling and the daily updating of the data base. Write a user's manual.

8. Technical Approach: Research and identify the inspection requirements of POL operations. Design a data base on the Z-248/Z-100/Sperry PC to maintain desired information. Design and develop a user friendly program which will allow the data base to be easily maintained and information presented in a usable format. Develop an information system which would funnel inspection accomplishments into the Operations Section. Write a user's manual to accompany this package.

10. Anticipated Completion Date: April 1987.

1. Title: Base Level Fuels Management Indicators

2. Project Sponsor: HQ USAF/LEY

3. Project OPR: HQ USAF/LEYSF

4. Project Co-Sponsor(s):

5. Project Manager: AFLMC/LGS, Capt Loden, AUTOVON 446-4165

6. Problem Statement: The base-level fuels community does not have a generally recognized series of management indicators to accurately measure base-level fuels performance. Each account develops its own indicators individually and, normally, in isolation from other accounts. Without a complete set of indicators it is difficult for Chiefs of Supply (COS) and senior base fuels management personnel to identify potential problem areas, measure variability in workload and gauge performance on a month-to-month basis.

7. Project Objectives: Develop a generic set of base-level fuels management indicators which could be used as a baseline by the COS and fuels management to identify problem areas, measure workload, and track servicing performance.

8. Technical Approach: We will use the survey method to gather data. MAJCOMs will be asked to make their inputs for a set of indicators. These responses will be consolidated and presented as a "strawman" for MAJCOM review. This package will serve as a baseline, and MAJCOMs can add/delete as they determine necessary.

9. Anticipated Completion Date: May 1987.

PENDING PROJECTS

1. Title: Fuels Capability Assessment Program

2. Project Sponsor: AFLMC

3. Project OPR: AFLMC

4. Project Co-Sponsor(s):

5. Project Manager: AFLMC/LGS, Capt King, AUTOVON 446-4165

6. Problem Statement: Within a Base Fuels Branch, a method does not exist to objectively assess the support capability of a fuels operation. Generally, any assessment of what an operation could support is now based on the judgment and experience of the fuels officer and his senior staff. Thus, any capability assessment done is nothing more than experienced guesswork lacking any degree of verifiable confidence.

7. Project Objectives: Improve fuels capability assessment for sortie generation.

8. Technical Approach: Using a functional description previously completed, identify all potential POL inputs which contribute to sortie generation. Design a fuels assessment model to provide base-level sortie generation capability outputs.

1. Title: Improved Fuels Training Management Program

2. Project Sponsor: HQ MAC/LG

3. Project OPR: HQ MAC/LGS

4. Project Co-Sponsor(s): SSC/SMS

5. Project Manager: AFLMC/LGS, Capt King, AUTOVON 446-4165

6. Problem Statement: Currently, all POL training requirements are identified, scheduled, and documented on an AF Form 623, Personnel Training Record. Using AF Forms 623 poses several problems. Updating the forms is time-consuming and is often forgotten. Verification of an individual's training accomplishments or identifying a group with particular training is also time-consuming. AFR 144-1 requires the establishment of a rotational training program, but this is not included on the AF Forms 623.

7. Project Objectives: Develop a POL information and control system on a microcomputer to monitor and track the training status of fuels personnel.

8. Technical Approach: Research and identify the training requirements, by skill level, of all POL personnel. Design a data base to maintain desired information. Use a systems approach to design an easy-to-use program which personnel can use to track training status and produce a hard copy of training accomplishments. Write a user's manual to accompany this training package.

1. Title: Improved Fuels Dispatch Procedures

2. Project Sponsor: HQ USAF/LEY

3. Project OPR: HQ USAF/LEYSF

4. Project Co-Sponsor(s): SSC/SMS

5. Project Manager: AFLMC/LGS, Capt King, AUTOVON 446-4165

6. Problem Statement: Within a base fuels operation, all flightline refueling activity is controlled from the Fuels Control Center (FCC). Currently, the Fuels Controller manually tracks the status of flightline operations on the AF Form 824, the Fuels Dispatch Log. While this methodology has worked in the past, it's a time consuming and redundant process that becomes especially difficult in a surge atmosphere. Consequently, the process needs to be reviewed and enhanced. And, with the advent of Petrol-Ram efforts, possibly adapted as a microcomputer application.

7. Project Objectives:

a. Understand the existing process in terms of what data REPOL reporting involves, where this data comes from and how this data is used.

b. Understand the Petrol-Ram concept in an effort to reconcile Petrol-Ram available data with data used in the REPOL reporting process.

c. Determine if the existing process needs to be enhanced and how it could be enhanced. This could involve development of a microcomputer application or integration with the Petrol-Ram concept. If a microcomputer application is involved a Functional Description would be developed to outline proposed enhancements.

8. Technical Approach:

a. Research the existing process and Petrol-Ram initiatives.

b. From a systems perspective, determine if the existing dispatch process could be improved upon, and, if so, develop a Functional Description to improve it.

1. Title: Review of REPOL Procedures

2. Project Sponsor: HQ USAF/LEY

3. Project OPR: HQ USAF/LEYSF,

4. Project Co-Sponsor(s): SSC/SMS

5. Project Manager: AFLMC/LGS, Capt King, AUTOVON 446-4165

6. Problem Statement: The REPOL (RCS:HAF-LEX(D&AR)7108) is a classified report which must be submitted to MAJCOM fuels NLT 3 hours after DEFCON 1 is declared, a HQ USAF request or following an attack or peacetime disaster. Further, once the initial report is submitted, follow-up reports must be submitted daily. The REPOL is a difficult report to prepare. Inventory data must be gathered from a variety of sources on every POL product maintained at a base, existing inventory levels calculated, remaining available storage calculated, days of support remaining calculated and fuels usage projected.

7. Project Objectives:

a. Determine if the existing system can be improved upon, and if so, determine how to improve it.

b. Outline system enhancements as appropriate. If a microcomputer application is involved, develop a Functional Description outlining proposed system enhancements.

8. Technical Approach: Define the requirements (considerations, assumptions, limitations, and exceptions) needed for completing the REPOL. Determine if the existing system can be improved upon. If so, develop a Functional Description outlining enhancements. (If a microcomputer application is involved this would be opened as a follow-on project.)

STOCKAGE POLICY

One of the primary objectives of this key area is to review Air Force stockage policy from cradle to grave, which includes the range and depth of stock for XB, XF and XD items. This is a complex and broad area; in fact, the basic stockage policy objectives and methodology were outlined in a separate "AFLMC Supply Stockage Policy Master Plan" dated August 1984. While much of the overall effort has been completed, there is still much to do. Many of our other stockage policy studies result from the concerns of the Air Force Stockage Advisory Board (AFSAB). This key group serves as the primary source and approval agency for these types of study efforts. The stockage policy active and pending projects are listed on the following pages, starting with active studies.

ACTIVE PROJECTS

1. Title: Multi-echelon Inventory Policy for Consumables

2. Project Sponsor: HQ USAF/LEY

3. Project OPR: HQ USAF/LEYS

4. Project Co-Sponsor(s): HQ AFLC/MM, Mr Cazel

5. Project Manager: AFLMC/LGS, Capt Burleson, AUTOVON 446-4165

6. Problem Statement: We have performed a number of studies on consumables, or EOQ stockage policy. These studies indicate many of the assumptions inherent in an economic order quantity (EOQ) model do not strictly hold in an Air Force environment. Demand tends to be erratic and orders are in lumps. Depots also use an EOQ system to support bases' requirements. Each base orders EOQ items and the depot replenishes its own stocks using an EOQ. Bases ordering EOQ to a central point create erratic and lumpy demand patterns.

7. Project Objectives: Review existing consumable stockage policies to ensure consistency between levels of inventory management. Build a multi-echelon model for Air Force consumable items. Verify and validate the assumptions of the current consumable policy. Where appropriate, recommend improvements to the existing system.

8. Technical Approach: Build a multi-echelon model that simulates the Air Force Supply System for consumables using the SBSS and DO62 requirements computations. Once the model is built, measure the effectiveness and efficiency of the current system and compare it to alternative approaches. Performance criteria will include: operational impact (MICAP occurrences), backorders, backorder days, and average on-hand inventory.

9. Anticipated Completion Date: February 1987.

1. Title: D028 Problem Item Analysis

2. Project Sponsor: HQ USAF/LEY

3. Project OPR: HQ USAF/LEYS

4. Project Co-Sponsor(s):

5. Project Manager: AFLMC/LGS, Capt Ham, AUTOVON 446-4165

6. Problem Statement: Few people understand the current Air Force requirements, distribution and allocation policy for reparable items. Within the Air Force Recoverable Item Central Leveling System (D028), three conditions may reflect a problem in the requirements computation or levels distribution. First, D028 levels are greater than the worldwide requirement (D041). Second, D028 and the worldwide requirement are aligned, but the worldwide requirement is too low (when compared to the Standard Base Supply System levels). Finally, the D028 levels and the worldwide requirement are aligned, but the requirement is too high.

7. Project Objectives: Determine the range, scope and characteristics of items that fall into the three areas. Identify when items in each category are problem items. Recommend corrective action and improvements to the D028 system.

8. Technical Approach: Obtain worldwide D028 data from AFLC and identify how many items currently fall into the three areas. Conduct statistical analysis on these items to determine why they fall into each category and their characteristics. Build a model which replicates D041 and D028 to determine if the problem is data collection or the model itself. For example, if our model computes a level much higher than provided in D028, then probably not all of the base-level demand data was fed to D041 (and hence to D028). Use this model to determine the stockage and cost impact of incorrectly stocking these items.

9. Anticipated Completion Date: February 1987.

1. Title: Excess Accounting, Reporting, and Redistribution Procedures

2. Project Sponsor: HQ USAF/LEY

3. Project OPR: HQ USAF/LEYS

4. Project Co-Sponsor(s): HQ SAC/LGS

5. Project Manager: AFLMC/LGS, Capt Ham, AUTOVON 446-4165

6. Problem Statement: We have completely changed the Air Force's retention policy. We are no longer excessing and disposing of assets too soon. However, the Air Force has not changed its excess accounting and reporting procedures. On-hand inventory is still stratified to identify on-hand quantities above the demand level as excess, rather than identify excesses as items for which the Air Force no longer has a need. In addition, we redistribute low-cost assets from one base to another, even though there will probably be a need at the original base. The current Air Force excess accounting and reporting procedures need to be reviewed.

7. Project Objectives: Determine the proper inventory stratification for excesses. Determine effective and efficient redistribution policy for excesses. Determine when and how often excesses should be reported for redistribution. Evaluate wholesale policy for excess accounting and redistribution.

8. Technical Approach: Conduct a system analysis. Determine what the current system does, what the constraints are, and how it works. Examine what should be done and make recommendations to change the current system, if appropriate.

9. Anticipated Completion Date: April 1987.

1. Title: Statistical Performance Measures

2. Project Sponsor: HQ ATC/LG

3. Project OPR: HQ ATC/LGSPA

4. Project Co-Sponsor(s): Air Force Stockage Advisory Board

5. Project Manager: AFLMC/LGS, Capt Ham, AUTOVON 446-4165

6. Problem Statement: There is a need to relate supply indicators to operational performance or operational hours to supply performance measures. In order to effectively manage, supply managers need to know what supply factors will improve operational performance. Another way to look at the problem is to relate operational data, such as flying hours and operational hours, to supply performance measures. For example, if the flying schedule increases, can supply expect a decrease in the fill rate over some period of time?

7. Project Objectives: Relate supply performance measures to operational performance or operational hours to supply performance measures.

8. Technical Approach: Conduct a statistical correlation and time series analysis using worldwide supply performance data and base-level supply and operational data. Use sophisticated statistical techniques to relate supply indicators to operational performance.

9. Anticipated Completion Date: May 1987.

1. Title: EOQ Cost Factor Update

2. Project Sponsor: HQ USAF/LEY

3. Project OPR: HQ USAF/LEYS

4. Project Co-Sponsor(s):

5. Project Manager: AFLMC/LGS, Ms Kendall, AUTOVON 446-4165

6. Problem Statement: DODI 4140.45 requires the cost factors used in the Standard Base Supply System (SBSS) to compute levels for Economic Order Quantity (EOQ) assets be revalidated and updated at least every two years. The cost to order, holding cost, cost to add, maintain, and delete, backorder-end-use order cost, and LP cost to order, must be updated.

7. Project Objectives: Provide current cost factors to computer SBSS levels for EOQ assets.

8. Technical Approach: The last update was done on the Apple microcomputer; we plan to develop an updated procedure on the Z-248 to have a current, easily used update program.

9. Anticipated Completion Date: August 1987.

1. Title: SBSS Reparable Simulation Capability

2. Project Sponsor: HQ USAF/LEY

3. Project OPR: HQ USAF/LEYS

4. Project Co-Sponsor(s):

5. Project Manager: AFLMC/LGS, Capt Loden, AUTOVON 446-4165

6. Problem Statement: Our charter is to analyze base-level stockage policy. We need the capability to quantitatively evaluate the impact of SBSS reparable stockage policy changes.

7. Project Objectives: Develop the capability to simulate reparable stockage policy and repair processes.

8. Technical Approach: Have contractor develop a model that simulates stockage policies and repair processes for reparable items. This model will be for internal use by AFLMC to determine Air Force stockage policies.

9. Anticipated Completion Date: May 1987.

1. Title: Low Density Spares Support Levels

2. Project Sponsor: HQ MAC/LG

3. Project OPR: HQ MAC/LGS

4. Project Co-Sponsor(s): HQ USAF/LEYS

5. Project Manager: AFLMC/LGS, 1Lt Reynolds, AUTOVON 446-4165

6. Problem Statement: MAC personnel developed a spares support list to support the transfer of C-141 aircraft to Andrews AFB. They were displeased with the results of the SBSS program that uses mission change data and a set of formulas to determine spares support levels. Both range and depth of the items in the spares support list seemed inadequate. The comparison was based on the ISSL, which contains several thousand items, and the mission change list, which only contains several hundred. HQ MAC, Air Staff and the Air Force Stockage Advisory Board asked us to review the formulas to determine the range and depth of stock for spares support list using mission change data.

7. Project Objectives: Compare the current SBSS method of computing the range and depth of stock for low density spares support lists with alternative methods. Recommend the best method for Air Force use.

8. Technical Approach: Learn how the current system computes the range and depth of spares support lists. Use mission change data from MAC along with data currently in the LMC data bank to replicate the current system of generating levels. Develop alternative methods to determine the range and depth. Measure the performance of the current and alternative methods to determine the best. Use the mission change and item record data to simulate demand and measure the operational impact, fill or usage rate, and cost.

9. Anticipated Completion Date: September 1987.

1. Title: XD Range

2. Project Sponsor: HQ TAC/LG

3. Project OPR: HQ TAC/LGS

4. Project Co-Sponsor(s): HQ AFLC/MMM

5. Project Manager: AFLMC/LGS, Capt Ham, AUTOVON 446-4165

6. Problem Statement: Previous studies on analyzing when to stock XB items indicated the Air Force could significantly improve performance at a modest cost by using a scientific method to determine when to stock items. Studies on retention policies for reparable items show we are not maintaining demand levels (and therefore assets) at the base long enough. The current system for XD states an XD item is stocked after 2 demands in 365 days. It does not consider mission impact. There are other methods to determine when to stock XD items which may improve performance. We want to compare alternative range criteria to the current system for XD items.

7. Project Objectives: Compare the stockage, cost and operational impact of alternative methods to determine when to start stocking XD items at base level.

8. Technical Approach: Use the same approach used to complete EOQ Range Model Study. Use actual item record data to compare alternative range models. Use item records to decide whether to stock an item and determine the model's performance using subsequent item record data. Test models which consider demands, cost and mission impact.

9. Anticipated Completion Date: September 1987.

1. Title: Analyze Mission Change Data (MCD) Collection System

2. Project Sponsor: HQ TAC/LG

3. Project OPR: HQ TAC/LGS

4. Project Co-Sponsor(s): HQ MAC/LG

5. Project Manager: AFLMC/LGS, Capt Loden, AUTOVON 446-4165

6. Problem Statement: In the Sep 86 AFLMC Contingency Requirements Forecasting Report (LS821101), we found mission change data was erroneous for many items used to determine follow-on spares kits stockage levels. This causes some stockage levels based on MCD to be lower and unable to provide the required level of support. Additionally, at the Oct 86 Stockage Advisory Board, HQ TAC/LGS briefed a study which indicated errors in the MCD collection system. Usage by SRD was being grossly understated. However, these studies did not go far enough. This project will determine how widespread is the problem of faulty MCD and how the MCD collection system can be changes to improve data collected.

7. Project Objectives: Analyze and determine the impact of faulty MCD. Analyze the current MCD collection system. Recommend improvements to the MCD collection system. Document the reasons for the recommended changes.

8. Technical Approach: Use supply data bank item transaction records tapes with a model that simulates current MCD collection in the SBSS. Identify extent of errors in MCD. Identify and test improvements to the system.

9. Anticipated Completion Date: June 1987.

1. Title: MICAP Allocation

2. Project Sponsor: AFLC/XR

3. Project OPR: HQ AFLC/MML

4. Project Co-Sponsor(s): HQ USAF/LEYS

5. Project Manager: AFLMC/LGS, Capt Ham, AUTOVON 446-4165

6. Problem Statement: AFLC does not have worldwide visibility of XB and XF assets. Currently, when the AFLC on-hand levels drop below the reorder point some form of asset allocation takes place. Usually the allocation is first come first served. Since AFLC does not have worldwide visibility, they cannot redistribute assets. The AFLMC was asked, along with HQ AFLC/XR, to develop and test a MICAP allocation system to meet this requirement.

7. Project Objectives: Determine the point where the AFLC on-hand level is critical and an allocation scheme should begin. Develop a scheme(s) to allocate limited items considering time, mission impact, and priority. Develop a method for AFLC to obtain worldwide visibility of EOQ items when the AFLC on-hand reaches the 'critical' point. Determine the impact of implementing a MICAP allocation system.

8. Technical Approach: We are developing a multi-echelon EOQ model in conjunction with another AFLMC project, LS840402. We will modify it for this project and test the performance of allocation schemes. We will first use simulated data and later use real AFLC data.

9. Anticipated Completion Date: November 1987.

PENDING PROJECTS

1. Title: Demand Forecasting for Reparables

2. Project Sponsor: HQ TAC/LG

3. Project OPR: HQ TAC/LGS

4. Project Co-Sponsor(s): HQ USAF/LEYS

5. Project Manager: AFLMC/LGS, Capt Burleson, AUTOVON 446-4165

6. Problem Statement: The current Standard Base Supply System method to forecast the mean and variance of demand for repair cycle assets is similar to the method we found ineffective for consumables. The current method to forecast demand for reparables uses even less data than the Air Force uses for consumables. It appears the variance of demand is not accurately measured and the pipeline variability (order and ship and repair pipelines) is not considered at all.

7. Project Objectives: Evaluate the stockage and operational impacts of forecasting the mean and variability of demand for repair cycle assets. Determine accuracy of the current method and evaluate alternatives.

8. Technical Approach: Evaluate the accuracy of the current and alternative methods to forecast the mean and variance of demand. Using the reparable simulation model, evaluate the stockage and operational impact of the current and alternative forecasting techniques.

1. Title: XF3 Range Model

2. Project Sponsor: HQ USAF/LEY

3. Project OPR: HQ USAF/LEYS

4. Project Co-Sponsor(s): HQ SAC/LGS

5. Project Manager: AFLMC/LGS, Capt Ham, AUTOVON 446-4165

6. Problem Statement: In our study of XF3 Retention Policy, we noted 'excess' field level reparable items had significantly fewer demands than nonexcess items. It appeared we may begin to stock field level reparable assets before there is any significant demand history. Currently, we stock field level reparable items after two demands in a one year period. In some cases, these items are never ordered again. Currently, the only criterion we use to determine to stock an XF3 item is the number of demands. We do not consider the importance of that item to mission, nor do we consider the cost.

7. Project Objectives: Analyze alternative range models for XF items. Develop alternative models to determine when to stock XF items using models which consider essentiality. Compare the stockage, operational, and cost performance of alternative models to the current model.

8. Technical Approach: The methodology will be similar to the one we used to compare EOQ range models. We will develop the alternative models and compare their performance. The criteria for selection of the best model will be operational impact, stockage performance, and variable cost levels.

1. Title: European Distribution System (EDS) Forward Stockage Criteria

2. Project Sponsor: HQ USAF/LEY

3. Project OPR: HQ USAF/LEYS

4. Project Co-Sponsor(s): HQ AFLC/MML

5. Project Manager: AFLMC/LGS, Capt Burleson, AUTOVON 446-4165

6. Problem Statement: Part of the European Distribution System (EDS) is the forward stocking of wholesale AFLC, DLA and GSA consumable items. The GAO has raised a concern over the current stockage policies applied by the three wholesale activities who all use different criteria. The depth of the stock computations is equally inconsistent. In addition, there is no scientific basis to justify the current range and depth policies. HQ USAF/LEYS, at the prompting of HQ AFLC/MML, asked us to review the current policies and recommend improvements.

7. Project Objectives: Review and analyze the EDS stockage policy for both the range and depth of XB and XF items. Recommend improvements to the current system.

8. Technical Approach: Obtain demand data from the D062 to test various criteria for selecting items, and then use the second year to see how well various criteria performed. Measure performance by the number of items stocked correctly (later had a demand) versus the number of incorrect decisions (no later hit). Run a simulation to determine the stockage and operational impact of reducing order and ship time (O&ST). This will give an idea of the readiness of the impact by stocking overseas. Examine retail procedures to determine the impact reduced O&ST will have on SBSS demand level.

1. Title: Repair Cycle Time Computation

2. Project Sponsor: HQ USAF/LEY

3. Project OPR: HQ USAF/LEYS

4. Project Co-Sponsor(s):

5. Project Manager: AFLMC/LGS, Capt Burleson, AUTOVON 446-4165

6. Problem Statement: Repair cycle time (RCT) is collected and used to compute demand levels for reparable items at both the base and depot level. Repair cycle time is the amount of time to process and return an unserviceable repair cycle item to serviceable status. A stock of additional assets is required to fill the repair pipeline. Currently, there are 'blocks' of repair cycle days that are not included in RCT. Thus, there are no assets to fill the repair pipeline for these 'blocks' of time. There are two RCTs recorded--one for base level and one for depot. The effect of the difference between these two needs to be examined.

7. Project Objectives: Examine the current method of computing and reporting repair cycle time. Determine the impact of alternative methods of computing RCT. Determine the difference in depot and base RCT and their impact on operational support.

8. Technical Approach: The study will be done in two steps, data collection and simulation. Data collection will determine what is currently being computed versus what is sent to AFLC and percent of occurrences and number of days that repair cycle time is excluded from base-level demand computation. The second step will simulate various methods of recording RCT and determine their operating characteristics.

1. Title: MICAP Hours for Cannibalizations

2. Project Sponsor: HQ USAF/LEY

3. Project OPR: HQ USAF/LEYS

4. Project Co-Sponsor(s): MICAP Improvement Workgroup

5. Project Manager: AFLMC/LGS, Maj Matthews, AUTOVON 446-4165

6. Problem Statement: The June 1986 MICAP Improvement Workgroup raised the issue of adding 100 hours to the total MICAP time for MICAP conditions satisfied by a cannibalizations action. No one knew why 100 hours or what the impact would be of changing the 100 hours. The theory is cannibalizations don't really solve the parts shortage and require valuable maintenance resources so there should be some "penalty" associated with a cannibalization. The critical item program is the only time the 100 hours affect management policy. Is 100 hours the correct "penalty?"

7. Project Objectives: Analyze and determine the effect of the current policy of adding 100 MICAP hours as a result of a cannibalization. Recommend improvements to the current policy. Document the reasons for the recommended policy.

8. Technical Approach: The 100 hours policy only affects selecting critical item program. The approach would be to collect MAJCOM D165 data and analyze it to determine the scope and impact of adding 100 hours for cannibalizations. Other methods could be tried to determine the effect on the priority rank of items in the critical item program.

1. Title: Review of Mission Impact Code Migration

2. Project Sponsor: AFSAB

3. Project OPR: HQ USAF/LEYS

4. Project Co-Sponsor(s): HQ TAC/LGS

5. Project Manager: AFLMC/LGS, 1Lt Reynolds, AUTOVON 446-4165

6. Problem Statement: Mission Impact Codes (MICs) identify high mission impact items. They are based on priority (Urgency Justification Code) of demands against an item. The MIC is upgraded as transactions occur, but never downgraded. The Air Force needs to determine if upward migration is causing their usefulness as a mission-impact discriminator to diminish.

7. Project Objectives: Identify any trends in MIC migration and determine impact of those trends on stockage policies.

8. Technical Approach: Build a model to simulate assignment of MICs to see if upward migration is a problem. Develop and evaluate alternative coding, editing, and reviewing schemes to find one that resolves the problem.

1. Title: Centralized vs Decentralized Stockage Policy

2. Project Sponsor: HQ USAF/LEY

3. Project OPR: HQ USAF/LEYS

4. Project Co-Sponsor(s): AFLC/MMM

5. Project Manager: AFLMC/LGS, Capt Burleson, AUTOVON 446-4165

6. Problem Statement: Theoretically, centralized inventory systems perform more efficiently and effectively than decentralized inventory systems. This is because the assumption is increased demand information provides a better 'systems' perspective. The problem with theoretical studies is they assume perfect demand information, uninterrupted communication flow, and simultaneous requirement determination. These assumptions don't hold in the Air Force environment.

7. Project Objectives: Build a simulation model to replicate a multi-echelon inventory environment and then use the model to examine a centralized 'push' system versus a decentralized 'pull' system. The analysis will include theoretical work as well as the impact of real life constraints on both systems.

8. Technical Approach: Build a model to replicate a multi-echelon inventory environment. Alternative stockage concepts will be tested under numerous environments. Analysis will be done on determining requirements and stockage policy at the base level and the depot level. Additionally, a combination of the two will also be analyzed.

1. Title: Inventory Policy for Seasonal Items

2. Project Sponsor: HQ TAC/LG

3. Project OPR: HQ TAC/LGS

4. Project Co-Sponsor(s): HQ USAF/LEYS

5. Project Manager: AFLMC/LGS, Capt Burleson, AUTOVON 446-4165

6. Problem Statement: We need a method to identify and determine effective inventory levels for seasonal items. There are procedures to load adjusted levels for seasonal items, but there are no guidelines for how to determine the levels. Further, there is no way to automatically identify seasonal items. Now that we are collecting variance data, we should have the capability to identify seasonal, highly variable items, which could benefit from a tailored inventory policy.

7. Project Objectives: Develop an automated method to identify seasonal items. Develop an inventory policy for seasonal (or highly erratic) items.

8. Technical Approach: Using the Supply Data Bank, we will examine the demand histories for seasonal (and highly erratic) items. Once the factors that identify seasonal items are identified, we will try alternative stockage policies. The performance will be determined using the operational criteria (reduced grounding incidents), stockage criteria (fill rates), and cost criteria (inventory investment).

FUTURE DIRECTION

We don't see a radical departure from our current direction. We'll continue to emphasize solving the major problems facing the base supply community. However, four areas deserve further comment:

1. The study of stockage policy issues will continue to be one of our main objectives. While we want to maintain our retail charter, most of the base supply community's major stockage policy problems involve some degree of interface with wholesale systems and procedures. We'll work within the wholesale arena to the extent necessary to resolve stockage issues.

2. The large number of WRSK/BLSS related issues call for a relook at how we plan to tackle them. We'll begin a WRSK Master Plan study in February 1987 in an effort to focus in on the most critical WRSK/BLSS issues and prioritize them for examination as appropriate.

3. We want to work more in the repair process category, paying particular attention to the repair cycle flow at base level. These studies will be interdisciplinary, i.e, will be conducted with our AFLMC maintenance and transportation counterparts.

4. Resources permitting, we hope to be able to take on additional equipment - related problems. This is a new area for us, but we see a need to continue these efforts.

We have a significant opportunity to shape tomorrow's supply environment by resolving today's supply problems. We'll continue to work those issues deemed most critical to the supply community.

END

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