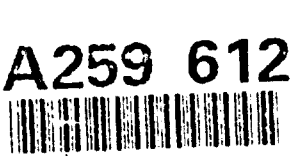
AD-A259 612



DTIC
ELECTE
JAN 2 2 1993
S D
C

ILS ELEMENT E13
RELIABILITY, AVAILABILITY, MAINTAINABILITY AND DURABILITY

Distribution Program and User's Manual Version 1.0

APJ 966-678

APJ

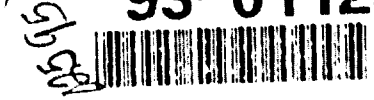
MILITARY & SCIENTIFIC RESEARCH

DISTRIBUTION STATEMENT A
Approved for public release;
Distribution Unlimited

AMERICAN POWER JET CO. RIDGEFIELD N.J.

93 1 22 016

93-01129



SECURITY CLASSIFICATION OF THIS PAGE

REPORT DOCUMENTATION PAGE

Form Approved OMB No. 0704-0188

1a. REPORT SECURITY CLASSIFICATION UNCLASSIFIED	1b. RESTRICTIVE MARKINGS
2a. SECURITY CLASSIFICATION AUTHORITY	3. DISTRIBUTION/AVAILABILITY OF REPORT
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE	UNLIMITED
4. PERFORMING ORGANIZATION REPORT NUMBER(S)	5. MONITORING ORGANIZATION REPORT NUMBER(S)
6a. NAME OF PERFORMING ORGANIZATION: AMCCOM, A RMY 6b. OFFICE SYMBOL (If applicable): AMSMC-MAE-EA	7a. NAME OF MONITORING ORGANIZATION
6c. ADDRESS (City, State, and ZIP Code) Rock Island Arsenal Rock Island, IL 61299-6000	7b. ADDRESS (City, State, and ZIP Code)
8a. NAME OF FUNDING/SPONSORING ORGANIZATION 8b. OFFICE SYMBOL (If applicable)	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER
8c. ADDRESS (City, State, and ZIP Code)	10. SOURCE OF FUNDING NUMBERS PROGRAM ELEMENT NO. / PROJECT NO. / TASK NO. / WORK UNIT ACCESSION NO.

11. TITLE (Include Security Classification) E13, Reliability, Availability, Maintainability and Durability, (APJ 966-678).

12. PERSONAL AUTHOR(S)
DULCOS, RONALD SHEPHERD, NED kmk

13a. TYPE OF REPORT	13b. TIME COVERED	14. DATE OF REPORT (Year, Month, Day)	15. PAGE COUNT
FINAL	FROM _____ TO _____	April 1991	144

16. SUPPLEMENTARY NOTATION

17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)
FIELD	GROUP	SUB-GROUP	STRUCTURED ANALYSIS, INTEGRATED LOGISTICS SUPPORT, ILS, STRUCTURED ANALYSIS AND DESIGN, APPLICATION SOFTWARE, AUTOMATED ASSESSMENT TECHNIQUE, over

19. ABSTRACT (Continue on reverse if necessary and identify by block number)

This User's Manual is the complete user documentation package, and is provided for guidance in using the APJ software. This User's Manual refers to Version 1.0 of the ILS Assessment software. The software permits you to carry out a coherent, orderly and reproducible assessment of ILS Element E13, Reliability, Availability and Maintainability (RAM). The software automates the assessment of ILS Element E13, Reliability, Availability and Maintainability (RAM) and follows the requirements of APJ Report 966-226, Structured Design - ILS Review Element E13 - RAM. It is designed to assess ILS performance as defined in AR 700-127. ILS software guides the user through the assessment by providing a series of questions which may readily be tailored to the weapon system and life cycle stage.

20. DISTRIBUTION/AVAILABILITY OF ABSTRACT	21. ABSTRACT SECURITY CLASSIFICATION
XX ☑ UNCLASSIFIED/UNLIMITED ☐ SAME AS RPT. ☐ DTIC USERS	UNCLASSIFIED

22a. NAME OF RESPONSIBLE INDIVIDUAL	22b. TELEPHONE (Include Area Code)	22c. OFFICE SYMBOL
NED SHEPHERD	(309) 782-2479	AMSMC-MAE-EA

DD Form 1473, JUN 86 *Previous editions are obsolete.* SECURITY CLASSIFICATION OF THIS PAGE

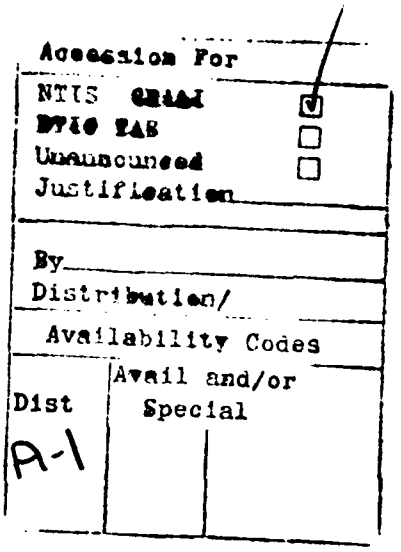
18. DATA REPOSITORY, YIELDS ACTIONABLE RESULTS, ASSESSMENT LOGIC, COST PERFORMANCE, SCHEDULE RISK MODULE, DATA REQUIREMENTS, DETAILED IMPLEMENTATION PROCESSES, STANDARD OUTPUT REPORTS, ILS ASSESSMENT SOFTWARE, AUTOMATED ASSESSMENT PROCEDURE, REVIEW RAM REPORT, ASSESS RAM PROGRAMS, ASSESS RELIABILITY PROGRAM, ASSESS MAINTAINABILITY PROGRAM, ASSESS AVAILABILITY, RAM, RELIABILITY, AVAILABILITY, AND MAINTAINABILITY

APJ 966-678

ILS ELEMENT E13
RELIABILITY, AVAILABILITY, MAINTAINABILITY AND DURABILITY

Distribution Program and User's Manual Version 1.0

DTIC QUALITY INSPECTED 5



under

CONTRACT DAAA21-86-D-0025

for

HQ US AMCCOM
INTEGRATED LOGISTIC SUPPORT OFFICE
AMSMC-LSP
ROCK ISLAND, IL

by

AMERICAN POWER JET COMPANY

RIDGEFIELD, NJ ST. LOUIS, MO

WILLIAMSBURG, VA ARLINGTON, VA

April 1991

PLEASE READ THIS

This manual is intended to demonstrate the ILS Assessment Software and aid the user in becoming familiar with its operation. The screens illustrated in this manual, are intended as a guide to help the analyst through the software operation and provide a sense of "what it looks like". The following ILS review areas have been made the subject of automation:

E1 - Maintenance Planning
E11 - Design Influence
E12 - Standardization and Interoperability
E13 - RAM-D
E14 - Support Management and Analysis
E15 - Cost Analysis and Funding

Because a single automated procedure with a consistent human interface is the objective of APJ's efforts, the analysis structure, screens and operating procedure are identical for each ILS assessment area.

To avoid cumbersome repetition, we have used E1 Maintenance Planning as illustrative displays for all manuals regardless of subject.

The specific assessment questions for each of the other ILS areas (E1, E11, ... etc.) are set forth in the respective automated screens, reports, and Help. To facilitate review and planning of each assessment task, the Data Flow Diagrams and questions are reproduced in Appendices A and B respectively of the manual corresponding to the given task.

The information contained in this manual is generic, and is weapon system and life cycle phase independent. It is designed to be readily structured for any specific weapon system and life cycle stage, and facilities are provided to tag each pertinent question so that attention may be focused on remunerative issues.

FOREWORD

This manual supports the automation of the Structured Analysis of Integrated Logistics Support (ILS) functions. It is the complete user documentation package, and is provided solely for guidance in using the APJ software.

The ILS assessment software is a unified and iterative approach to the management of logistic support throughout the life of a Weapon System. It enables the user to review logistic support decisions and, if required, establish corrective actions.

The automated ILS system is being developed by the American Power Jet Co. (APJ), under contract to Hqs AMCCOM. A major goal of the project is to unify the military and contractor approach to the performance of ILS. This approach was validated by AMCCOM, and necessary adjustments were made to attain a fully useful and user-friendly program.

APJ has used Structured Analysis and Design to develop the ILS assessment logic in accordance with AR 700-127 "Integrated Logistic Support".

The Structured Analysis and Design for ILS Element E13 (Reliability, Availability and Maintainability (RAM)) was presented in APJ Reports 966-225 and 966-226. APJ's task performance has been closely coordinated with the Army Logistic Evaluation Agency and AMCCOM. Their assessment experience has been captured in APJ's logic through continued coordination and review at the working level.

The application software functions as an automated assessment technique and data repository that insures the ILS review is complete and yields actionable results. The assessment logic provides a determinate definition of data requirements, detailed implementation processes, and standard output reports. Additionally, a cost, performance, and schedule risk module has been created for each process.

The ILS assessment software is available through HQ AMCCOM, AMSMC-LSP to program managers, ILS functional area representatives, and review activity personnel. It provides guidance and a means of assessing ILS performance by using the automated assessment procedure. Through the use of this procedure, problems may be quickly identified and resolved before testing and milestone reviews.

The Structured Analysis for ILS Element E13, Reliability, Availability and Maintainability (RAM), contains the following five (5) major modules:

1. Assess RAM Programs
2. Assess Reliability Program
3. Assess Maintainability Program
4. Assess Availability
5. Review RAM Report

NOTE

A bar in the left hand margin of any paragraph indicates changes from the Beta Test version of this manual.

This work was performed by a task team for APJ: George Chernowitz, James M. Ciccotti, Scott Lerman, and William Villon. The manual was prepared by Arthur Kreitman; editing and typing support were most competently provided by Barbara Boren and Denise Montanez.

We gratefully acknowledge the significant contributions made to the quality of this product by Messrs. T. Merritt of LEA and M. Finkel of AMSAA, H.M. Orrell and A. Mraz of OPTEC, and to the reviewers of this work at DCSLOG and Deputy ASA for Logistics, Department of Army. The support of Messrs. Ned A. Shepherd and Ron Duclos of AMCCOM, AMSMC-LSS is gratefully acknowledged for their assistance in many regards.

All comments on this version are welcome and should be addressed to:

George Chernowitz
AMERICAN POWER JET COMPANY
705 Grand Avenue
Ridgefield, New Jersey 07657

Phone: (201) 945-8203

TABLE OF CONTENTS

CHAPTER	TITLE	PAGE
1	**INTRODUCTION**	1-1
	1.1 General	1-1
	1.2 Scope	1-1
	1.3 ILS Review Logic and Organization	1-2
	1.4 ILS Software Architecture	1-2
	1.5 Software Provided	1-3
2	**SOFTWARE INSTALLATION AND BACKUP**	2-1
	2.1 General	2-1
	2.2 Equipment Requirements	2-1
	2.3 Power On/Off	2-2
	2.4 System Installation	2-2
	2.5 Installation On a Hard Disk	2-2
	2.6 Instructions for Field Use	2-3
	2.7 Making a Field Copy	2-4
	2.8 Software Boot-Up Procedure	2-5
	2.9 Boot-Up Software Using Hard Disk	2-5
	2.10 Boot-Up Program Using Floppy Disk	2-6
	2.11 Creating Back-Up Files	2-6
	2.12 Recovery Procedures	2-7
3	**START-UP OPERATIONS**	3-1
	3.1 Introduction	3-1
	3.2 Equipment Identification Screen	3-1
	3.3 Analyst Identification Screen	3-2
	3.4 Main Menu	3-5
	3.5 Operations	3-7
	3.6 Help System	3-10
	3.7 Navigation	3-11
4	**ASSESSMENT TECHNIQUES AND PROCEDURES**	4-1
	4.1 Introduction	4-1
	4.2 Historical Results	4-1
	4.3 Multiple Analyst Usage	4-2
	4.4 Performing an Assessment	4-2
	4.5 Answering Questions	4-3
	4.6 Questions With "Explanation" Answers	4-5
	4.7 Questions With "YES" Answers	4-6
	4.8 Questions With "NO" Answers	4-7
	4.9 Questions With "N/A" Answers	4-9
	4.10 Function Keys	4-10

TABLE OF CONTENTS-Continued

CHAPTER	TITLE	PAGE
5	**REPORT GENERATION**	5-1
	5.1 Introduction	5-1
	5.2 Selecting a Report	5-1
	5.3 Changing Report Destination	5-3
	5.4 System/Equipment Data Report	5-4
	5.5 Overall Assessment Results Report	5-5
	5.6 Assessment Status Report	5-5
	5.7 Assessment Results Report	5-6
	5.8 Cost and Schedule Impacts Reports	5-7
	5.9 Performance and Sustainability Reports	5-8
	5.10 Alert and Action Schedule Date Reports	5-10

LIST OF ILLUSTRATIONS

NUMBER	TITLE	PAGE
1-1	ILS Software Architecture	1-4
3-1	Equipment Identification Screen	3-2
3-2	Equipment Sign-On Screen	3-3
3-3	Analyst Identification Screen	3-4
3-4	Analyst Sign-On Screen	3-4
3-5	Main Menu	3-5
3-6	Assessment Selection	3-8
3-7	Process Summary Screen	3-8
3-8	Subprocess Menu Selection	3-9
3-9	Question Menu	3-10
3-10	Navigation Menu	3-11
4-1	Sample Question Screen	4-4
4-2	Text Question Screen	4-5
4-3	Example of the Assessment Screen	4-6
4-4	Cost and Schedule Impact Rating Screen	4-8
4-5	Milestone Assessment Screen	4-9
4-6	Performance and Sustainability Rating Screen	4-9
5-1	Report Generation Main Menu	5-2
5-2	System/Equipment Data Report	5-11
5-3	Overall Assessment Results Report	5-12
5-4	Assessment Status Report (Weapon System Current Status)	5-13
5-5	Assessment Status Report (Current Review Session Report)	5-15

LIST OF ILLUSTRATIONS-Continued

NUMBER	TITLE	PAGE
5-6	Assessment Results Report (Assessment History)	5-16
5-7	Assessment Results Report (Weapons System Current Status)	5-17
5-8	Assessment Results Report (Current Review Session)	5-18
5-9	Cost and Schedule Impacts Report (Current Review Session Report)	5-19
5-10	Cost and Schedule Impacts Report (Weapon System Current Status)	5-20
5-11	Cost and Schedule Impacts (Criticality Analysis)	5-21
5-12	Cost and Schedule Impacts (Weapon System Summary)	5-22
5-13	Performance and Sustainability Impacts Report (Weapons System Current Status)	5-23
5-14	Performance and Sustainability Impacts Report (Current Review Session)	5-24
5-15	Performance and Sustainability Impacts (Criticality Analysis)	5-25
5-16	Performance and Sustainability Impacts (Weapon System Summary)	5-26
5-17	Alert and Action Schedule Dates (Alert Date Items)	5-27
5-18	Alert and Action Schedule Dates (Action Date Items)	5-28

LIST OF TABLES

NUMBER	TITLE	PAGE
3-1	Navigation Menu Option Descriptions	3-12
4-1	Word Processing Function Keys	4-11

LIST OF APPENDICES

APPENDIX	TITLE	PAGE
A	ILS Element E13 - Assessment of Reliability, Availability and Maintainability (RAM) Data Flow Diagrams.....	A-1
B	ILS Element E13 - Assessment of Reliability, Availability and Maintainability (RAM) - Structured Design (Assessment Questions).....	B-1
INDEX.....		I-1

CHAPTER 1

INTRODUCTION

1.1 GENERAL.

USER'S GUIDE

1.1.1 This User's Manual accompanies Version 1.0 of the ILS Assessment software. The software permits you to carry out a coherent, orderly and reproducible assessment of ILS Element E-13, Reliability, Availability and Maintainability (RAM). It is part of an APJ originated structure for addressing all of the ILS areas in AR 700-127.

1.1.2 This is designed to serve activities concerned with assessing ILS performance as defined in AR 700-127 and establishing its cost, schedule, performance and sustainability implications. Provision is made for such assessments at both the overall and detailed levels.

1.1.3 The user is guided through a series of questions which may readily be tailored according to the weapon system characteristics and life cycle stage. The overall set of questions and their organization are provided in Appendices A and B.

1.1.4 An important feature is a fully articulated guide to performing the assessment through a system of help screens, with a hypertext selection menu. This help system may likewise be tailored to the specific weapon system and life cycle stage.

1.2 SCOPE.

COVERS AR 700-127

1.2.1 The Department of the Army has a requirement for management control of contractor and government requirements for implementation of AR 700-127, (Integrated Logistic Support). Headquarters AMCCOM has initiated action to structure the review of each ILS element, as to the form of the results and the detailed processes involved. This action is necessary to ensure consistency with current US Army policies, procedures and techniques.

REVIEW SCOPE

1.2.2 This computer-assisted system will result in uniform development of a logistical database. It addresses all aspects of the ILS assessment elements, as set forth in Department of Army and Department of Defense administrative publications. Furthermore, it will insure uniformity in efforts and products, reproducibility of analyses, and a well defined structure. This system can be coordinated among all participants in the logistic process to arrive at standardized procedures and a common basis for understanding assessment results.

GENERIC MANUAL

1.2.3 This user's manual is baselined on ILS Assessment Element E1, Maintenance Planning. The examples of screens and reports shown in this manual are intended to illustrate the operation of the software independent of the assessment element. The process titles may be different is the various element, but the operation is unchanged.

1.3 ILS REVIEW LOGIC AND ORGANIZATION.

1.3.1 This software automates the assessment of ILS Element E13 - "Reliability, Availability and Maintainability (RAM)" and follows the requirements of APJ Report 966-226, "Structured Design-ILS Review Element E13-RAM".

1.3.2 A detailed Structured Analysis of this review element was developed in APJ report 966-225, "ILS Review Element E13". The detailed Data Flow Diagrams (DFDs) from this Structured Analysis are included as Annex A to this manual, and provide the user with an overview of the logic and approach taken with the analysis.

1.4 ILS SOFTWARE ARCHITECTURE

1.4.1 The overall concept of assessment is illustrated in Figure 1-1 and is weapon system and life cycle phase independent. ILS software is designed to guide the user through an assessment by providing a series of questions for the analyst to answer. The analyst must select the equipment to be assessed and enter an identification before reaching the main menu. From the main menu the user can either perform an assessment or generate a report using data from previous assessments.

1.4.2 During the process of performing an assessment, the user is guided through a series of processes and/or subprocesses that enable him to select a question to be answered. Once a question is selected, the user selects one of several possible responses. After responding to the question the user enters an assessment of the selected answer.

1.4.3 From the main menu the user can generate a report of the information that has been entered during a current or previous sessions. The output of the generate report can be directed to a printer, screen or stored as a file.

1.5 SOFTWARE PROVIDED.

PROGRAM

1.5.1 The ILS Review Element E13 - RAM software is loaded on 360K 5-1/4 inch floppy disks that are provided separately. Refer to Chapter 2 for the equipment required to run this software.

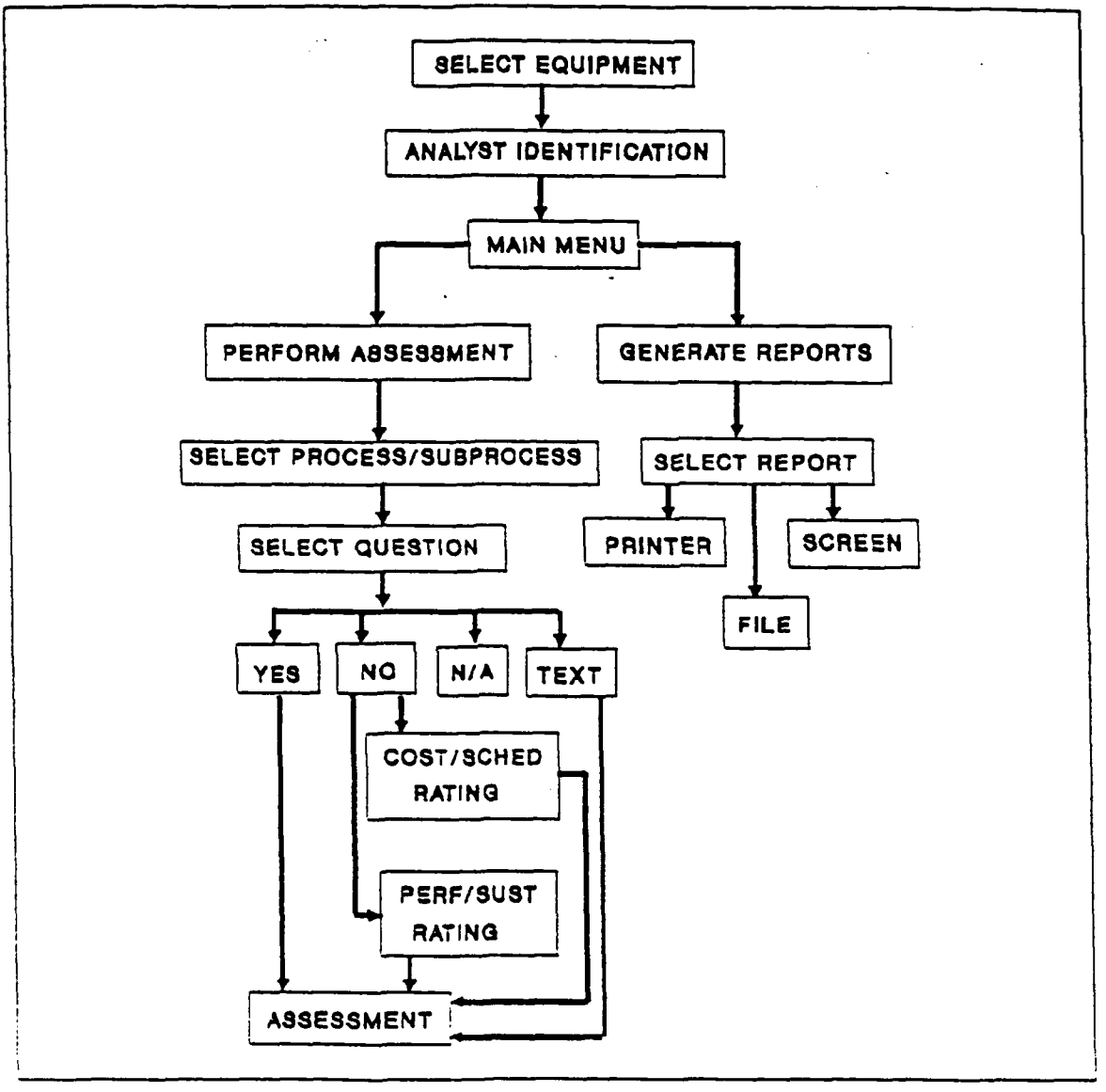


Figure 1-1. ILS Software Architecture

CHAPTER 2

SOFTWARE INSTALLATION AND BACKUP

2.1 GENERAL

2.1.1 This chapter describes the installation of the executable software and the procedures for making a backup file.

2.2 EQUIPMENT REQUIREMENTS

2.2.1 To operate the ILS Review Element E1 software, the user must be equipped with at least the following equipment, or its equivalent.

HARDWARE

1. IBM-PC-XT with DOS version 3.3 or later and 640K RAM
2. 360K or 1.2MB Floppy Disk Drive and 20MB Hard drive
3. Printer: The following printers are supported by the software printer drivers

   Epson E/F/J/RX/LQ
   HP Laserjet 500/+/II
   IBM 80 CPS Matrix

NOTE

If your printer is not one of those listed, select the "IBM 80 CPS Matrix" which allows you to tailor the report generator for any printer.

POWER

2.3 POWER ON/OFF

2.3.1 Since each system is slightly different, follow the manufacturer's specific start-up instructions for the personal computer being used to perform the assessment. Make sure that both the Central Processing Unit (CPU) and the Monitor are powered up. Proceed to the system installation section for the instructions on installation of the Logistics Assessment Software.

2.4 SYSTEM INSTALLATION

MAKE DUPLICATE COPY OF DISKS

2.4.1 This section describes the procedure to load the executable software residing on the floppy disk onto the computer's hard disk and instructions for making copies of the executable program and associated data bases for field use.

2.4.2 Before installing the software for the first time, duplicate the supplied disks. Apply write protect tabs to the original disks and store in a safe place. Use the copy of the software for system installation.

MODIFY CONFIG.SYS

2.4.3 In order for the ILS software to operate properly, the CONFIG.SYS file must contain the statements: FILES=50 and BUFFERS=20. Add these statements to the indicated files if they do not already exist.

2.5 INSTALLATION ON A HARD DISK.

HARD DISK

2.5.1 To install the software on a hard disk of the personal computer, perform the following procedures.

1. Turn the computer and monitor on. The computer should boot-up and the hard disk drive prompt (usually C:\) should appear on the screen.

2. Insert the copy of disk 1, ILS Assessment Software, into Drive A.

3. After the C:\ prompt, type "MD C:\ILS" and press <Enter>. This creates an ILS directory on the hard disk and the C:\ prompt will appear.

4. Type "Copy A:*.* C:\ILS" and press <Enter>. This copies all of the files from the Logistic Assessment Software floppy disk into the ILS directory on the hard disk.

5. Upon completion of copying the files into the ILS directory, the C:\ prompt appears. Remove the software disk just copied from Drive A and store in a safe place.

6. Insert the copy of each disk provided into Drive A, and repeat steps 4 and 5.

2.6 INSTRUCTIONS FOR FIELD USE.

WORKING COPY

2.6.1 The following procedures are for copying the ILS assessment software onto a single 1.2MB floppy disk from the computer's hard disk drive. This provides a working copy of the software for use at a field location, or on a laptop computer. Refer to paragraph 2.7 for procedures to copy the ILS assessment software onto 360K floppy disks.

1. Turn the computer and monitor on. The computer should boot-up and the hard disk drive prompt (usually C:\) should appear on the screen.

2. Insert a 1.2 M blank formatted floppy disk into Drive A.

3. After the prompt type "Copy C:\ILS*.EXE A:"and press <Enter>. This copies the executable file from the ILS directory onto the disk in Drive A.

4. After the prompt type "Copy C:\ILS*.DBT A:" and press <Enter>. This copies the files from the ILS directory onto the disk Drive A.

5. After the prompt type "Copy C:\ILS*.DBF A:" and press <Enter>. This copies the files from the ILS directory onto the disk in Drive A.

6. After the prompt type "Copy C:\ILS*.MEM A:" and press <Enter>. This copies the files from the ILS directory onto the disk in Drive A.

7. After the prompt type "Copy C:\ILS*.RTL A:" and press <Enter>. This copies the files from the ILS directory onto the disk in Drive A.

8. After the prompt type "Copy C:\ILS*.TXT A:" and press <Enter>. This copies the files from the ILS directory onto the disk in Drive A.

9. After the prompt type "Copy C:\ILS*.OVL A:" and press <ENTER>. This copies the files from the ILS directory onto the disk in Drive A.

10. Remove the disk from Drive A. Label this disk with file identification and date. This is the working copy that can be used at a field location to perform an assessment.

2.7 MAKING A FIELD COPY

360K FIELD COPY

2.7.1 The following procedures are provided for copying the ILS assessment software onto multiple 360K floppy disks from the computer's hard disk drive.

1. Turn the computer and monitor on. The computer should boot-up and the hard disk drive prompt (usually C:\) should appear on the screen.

2. Insert a 360K blank formatted floppy disk into Drive A.

3. After the prompt type "Copy C:\ILS*.EXE A:" and press <Enter>. This copies the executable file from the ILS directory onto the disk in Drive A.

4. Remove the disk from Drive A and insert a new 360K blank formatted disk into Drive A. Label this disk with file identification and date.

5. Repeat the procedures of steps 2 through 4 using the following commands to copy the files to the disks.

NOTE

More than one disk is required during the process of copying the following files.

a. After the prompt, type "Copy C:\ILS*.DBT A:".
b. After the prompt, type "Copy C:\ILS*.DBF A:".
c. After the prompt, type "Copy C:\ILS*.MEM A:".
d. After the prompt, type "Copy C:\ILS*.OVL A:".
e. After the prompt, type "Copy C:\ILS*.TXT A:".

2.8 SOFTWARE BOOT-UP PROCEDURE

BOOT-UP FROM HARD DRIVE

2.8.1 The following procedures should be followed each time the software is initiated. Paragraph 2.9 contains procedures for using a hard disk drive, and paragraph 2.10 contains procedures for using a floppy disk.

2.9 BOOT-UP SOFTWARE USING HARD DISK

2.9.1 The following procedure is used for accessing software installed on the computer's hard disk drive.

1. Turn the computer and monitor on. The computer will boot-up and the hard disk drive prompt (usually C:\) will appear on the screen.

2. Type "CD\ILS" and press <Enter> to change to the ILS directory. C:\ILS appears on the screen.

3. Type "ILS" and press <Enter>. The program is now initialized and an introductory screen appears. Refer to Chapter 3 for identification of screens, and Chapter 4 for instructions on performing an assessment.

2.10 BOOT-UP PROGRAM USING FLOPPY DISK.

2.10.1 The following procedure is used for accessing the program from a floppy disk.

1. Boot-up the computer with the DOS system disk.

BOOT-UP FROM FLOPPY

2. Insert program disk into Drive A.
3. At the A drive prompt, type "ILS" and press <enter>. The program is initialized and the ILS screen appears. Refer to Chapter 3 for identification of screens, and Chapter 4 for assessment entering procedures.

2.11 CREATING BACK-UP FILES

2.11.1 At the end of a day, make a back-up copy of the files. The back-up disk may be useful under the following conditions:

(1) If there is a computer hardware problem and another computer is used.
(2) Data files are corrupted or become otherwise unusable and restoration of the files is required.
(3) Transportation of the files from the user site to another management site.

2.11.2 Prior to creating any back-up files that will be restored to another machine, the analyst must ensure that:

PRE-BACKUP INSTRUC-TIONS

1. Formatted disks are available.
2. The machine that the back-up will be restored to has a DOS release version that is equal to or higher than the DOS release version on the back-up machine.
3. The backup and restore .COM files are in a directory specified in the autoexec.bat file path. If not, the complete paths for the back-up and restore must be specified at the time each is processed.

BACKUP PROCE-DURES

2.11.3 Perform the following procedures to create a back-up disk:

1. At the end of a session, place a formatted disk in Drive A. <Exit> from the ILS program to return to the C:\ILS DOS prompt.

2. Type "BACKUP A:\ILS" and press <Enter> to create a set of back-up disks.

3. Remove the back-up disks from Drive A, label and date them. No more than two days' worth of files should be maintained on such back-up disks. On the third day, the back-up files made two days ago should be updated and overwritten.

2.12 RECOVERY PROCEDURES

RESTORE

2.12.1 When file restoration is required, place the latest backup disk in drive A and type "RESTORE A:C:\ILS/S" and press <Enter>. The files will be restored.

RECOVERY FROM CORRUPTED INDEX FILES

2.12.2 If one or more index file associated with the data bases becomes corrupted, use the utility program procedures described in paragraph 3.4.3.

NOTE

Re-indexing and packing is recommended at least every 2-3 days.

2.12.3 The following is a list of files comprising the ILS Review/Software.

FILE NAMES

ANALYST.DBF	HELPILS2.TXT	QLIST.DBT
CHOICEN.DBF	ILS.EXE	REPWELC.MEM
CHOICEN.DBT	ILSYS.OVL	RESPONSE.DBF
CHOICET.DBF	ILSYS2.OVL	RR_PR1.MEM
CHOICET.DBT	INSTR.TXT	SESSION.DBF
CHOICEY.DBF	INTRO.TXT	SUBROC.DBF
CHOICEY.DBT	PROCESS.DBF	SUMMARY.DBF
EQUIP.DBF	PROCLOOK.DBF	SUMMARY.DBT
HELPILS.TXT	QLIST.DBF	WELC.MEM

CHAPTER 3

START-UP OPERATIONS

3.1. INTRODUCTION.

BACKGROUND

3.1.1 The U. S. Army ILS Assessment Software is an interactive menu driven system. The software is accessed by completing a series of identification screens prior to accessing the Main Menu. From the Main Menu, you can perform an assessment, generate reports, obtain help, or exit the program. This chapter explains the purpose of each screen and the required response.

3.2 EQUIPMENT IDENTIFICATION SCREEN.

3.2.1 After system initialization, the introductory screen appears. When any key is pressed, the Equipment Identification Screen appears as shown in Figure 3-1.

EQUIPMENT SIGN-ON SCREENS

3.2.2 To sign on to the system either enter the equipment ID (20 alphanumeric characters maximum), or press <Enter> to view a list of previously entered equipments. Use the arrow keys to move the highlight bar to the equipment desired. Select the equipment by pressing <Enter>. The Equipment Sign-On Screen is displayed as shown in Figure 3-2.

ADDING NEW EQUIPMENT

3.2.3 If the equipment desired is not on the list, select [NEW] and press <Enter>. The equipment Sign-On Screen is displayed as shown in Figure 3-2. Complete each field up to the number of characters indicated in Figure 3-2, and press <Enter> to proceed to the next field. After completion of the last field, press <Enter> and the Analyst Identification Screen appears.

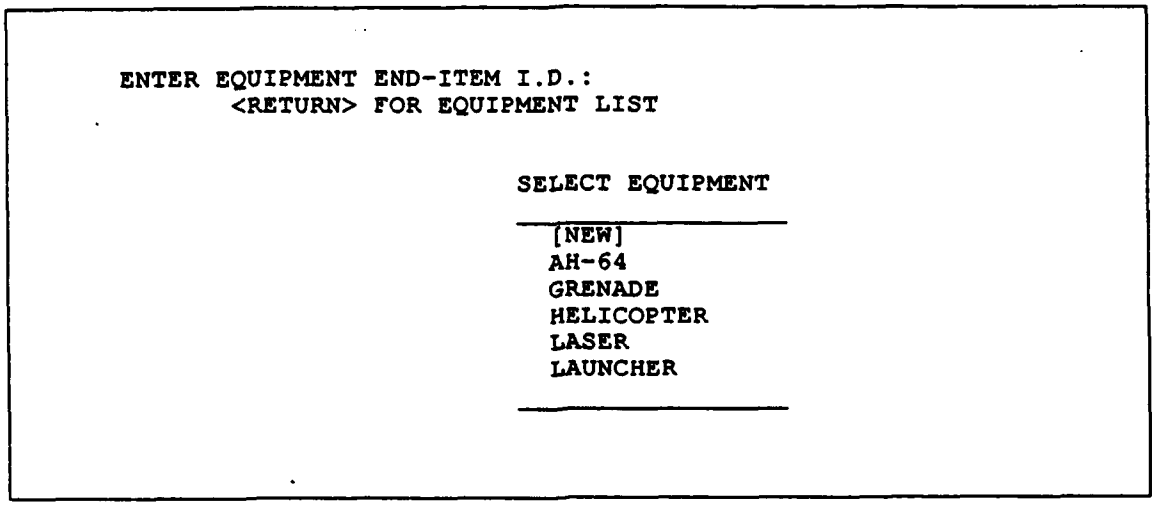


Figure 3-1 Equipment Identification Screen

EDIT OPTION

3.2.4 If the Equipment Sign-On Screen has been previously completed, an ACCEPT-EDIT command appears on the bottom of the screen. To change an entry use the arrow keys to highlight the EDIT option and press <Enter>. This places the cursor on the top line and enables the user to make corrections. Use the arrow keys to move the cursor to the line requiring correction. After completion of all corrections use the arrow keys to highlight the ACCEPT option of the ACCEPT-EDIT selection. Press <Enter> to proceed to the next screen.

3.3 ANALYST IDENTIFICATION SCREEN

ANALYST SCREENS

3.3.1 After completion of the Equipment Identification Screen, two Analyst Sign-On Screens must be completed. The first screen requires you to enter your analyst ID as shown in Figure 3-3 (4 Alphanumeric characters maximum).

```
EQUIPMENT IDENTIFICATION.....: 20A
MILITARY NOMENCLATURE........: 20A   INDENTURE LEVEL : 1N
COMMON NAME..................: 20A
NEXT HIGHER ASSEMBLY.........: 20A
NEXT HIGHER ASSEMBLY.........: 20A
NEXT HIGHER ASSEMBLY.........: 20A
PROGRAM MILESTONE............: 20A
DEVELOPMENT PHASE MILESTONE..: 20A
ACQUISITION MGMT MILESTONE...: 20A
PROJECT MANAGER LAST NAME....: 15A  FIRST NAME: 15A
PROJECT MANAGER OFFICE SYMBOL: 15A  PHONE #: 1(999)-999-9999
PROJECT MANAGER AUTOVON PHONE: 999-9999
DISCREPANCY REPORTS TO.......: 20A
MANUFACTURER.................: 20A
NATIONAL STOCK NUMBER........: 20N
```

Figure 3-2 Equipment Sign On Screen

NOTE

Underlined entries in the sample screens indicate user input and character limits. A=Alphanumeric; N=Numeric

3.3.2 Upon entering your Analyst ID, the Analyst Sign-On Screen appears as shown in Figure 3-4. If an analyst has signed on before, the software recalls the stored information, and this screen appears with the information previously entered. For an ID recognized by the program, the Analyst Sign-On Screen appears with a two choice menu (ACCEPT or EDIT). Use the arrow keys to highlight either the ACCEPT or EDIT choice. Press the <Enter> key to select the desired choice. If the information is correct, choose ACCEPT and the Main Menu is displayed.

```
ENTER ANALYST ID: 4A
```

Figure 3-3. Analyst Identification Screen

```
ANALYST ID.....:4A
ANALYST FIRST NAME.....:15A
ANALYST LAST NAME.....:15A
COMMAND OFFICE SYMBOL.....:15A
COMMAND OFFICE PHONE.....: 1(999)-999-9999
AUTOVON PHONE.....:999-9999
```

Figure 3-4. Analyst Sign On Screen

EDITING EXISTING INFORMATION

3.3.3 If the information is to be changed, select the EDIT option, the cursor moves to the first field where the user can make changes. Use the arrow keys to move the cursor to any of the fields requiring change. Move the cursor to the last field (AUTOVON PHONE) and press <Enter> to store the changes and access the Main Menu.

ADDING NEW ANALYST

3.3.4 The first time an analyst uses the software, the information on the Analyst Sign-On Screen must be completed. After completion of the last field, an ACCEPT-EDIT command appears on the bottom of the screen. Press <Enter> to accept the information.

3.4 MAIN MENU

3.4.1 The Main Menu is shown in Figure 3-5. It enables the user to select one of the options described below. Using the arrow keys; move the highlight bar to the desired option and press <Enter>. At the completion of any option, the program returns to the Main Menu and allows another selection to be made or the session to be terminated.

Figure 3-5. Main Menu

MAIN MENU OPTIONS

3.4.2 OPERATIONS. Selecting this option displays two choices: PERFORM ASSESSMENT and REPORT GENERATION. The first option allows the analyst to perform an ILS assessment on the equipment that was selected via the Equipment Identification Screen. The second is used to access the Report Generation Module. In this module, the analyst can generate management and technical reports that document the results of the assessment. A further description on performing an assessment is provided in Chapter 4 and report generation is discussed in Chapter 5.

3.4.3 UTILITIES. Two utility programs have been included in this option. The utilities are: REORGANIZE INDEX FILES and PACK DATABASES. These options allow the user to rebuild index files when they become corrupted. Files can become corrupted when the ILS program is ended abnormally. This occurs when the power is shut off without exiting normally (i.e., a power failure, or turning off the computer before exiting ILS). It can also occur when data is written to bad spots on disks (hard or floppy) and then cannot be read again.

3.4.3.1 In order to execute the utility programs, use the arrow keys to place the cursor on the UTILITIES option and press <Enter>. The two options REORGANIZE INDEX FILES and PACK DATABASES will be displayed.

NOTE

Corrupted files can be recognized by the user when bad or incorrect data is displayed. If the user suspects that any files are corrupted, both utility programs should be run to rebuild the indices. Once that is complete, the user may proceed.

RE-ORGANIZING INDEX FILES

3.4.3.2 To select REORGANIZE INDEX FILES option, use the down arrow key to highlight REORGANIZE INDEX FILES and press <Enter>. This displays a window on the Main Menu Screen entitled "REINDEXING ALL ILS SYSTEM WORK AREAS". As each database index file is rebuilt, the message within the box "Reindexing: Database (file name.DBF)" and the number of records being reindexed are shown. After all databases have been reindexed, a message line appears below the box stating "ILS System Successfully Reindexed, any <Key> to continue."

PACKING DATABASES

3.4.3.3 To select the PACK DATABASES option, use the down arrow key to highlight the selection and press <Enter>. This displays a window on the Main Menu screen entitled PACKING ALL ILS SYSTEM WORK AREAS. As each database file is packed, the message within the box reads "Packing: Database (filename.DBF)" and the number of records that are being packed. Upon completion of packing each file, a message line below the window appears stating "ILS System Successfully Packed, any <Key> to continue."

3.4.4 INTRODUCTION. This option displays a brief narrative about the computer-aided ILS Assessment System Software.

3.4.5 INSTRUCTIONS. This option displays suggestions on how to use the application software, and what to expect when operating the software. In addition, system navigation terminology is also displayed.

TERMINATING THE SESSION

3.4.6 EXIT. This option displays a pull down menu with a YES and NO option. If the YES option is selected, a second menu is displayed to verify the choice to exit the session. If OK is selected, the program exits and returns to the DOS prompt C:\ILS. If NO is selected, you are returned to the Main Menu.

3.5 OPERATIONS

PERFORM ASSESSMENT

3.5.1 From the Main Menu selection, begin the ILS assessment by selecting the PERFORM ASSESSMENT option under OPERATIONS. This option reveals a list of pertinent topics relating to the ILS Element as shown in Figure 3-6.

NOTE

The titles shown in the illustrative figures are provided to show the format of the screen. The actual titles of the ILS Assessment in use may be different, but the software operation is the same.

ASSESSMENT TOPICS

3.5.2 The Assessment Selection Screen shown in Figure 3-6, indicates the process number and abstract (title) of the assessment topic. This permits the user to choose topics that are pertinent for assessing a Weapon System in its current stage of development. Some topics are further divided into subtopics. Use the arrow keys to move the highlight bar to the desired topic and press <Enter> to select it.

3.5.3 Occasionally, and more often as the equipment assessment progresses, the reviewer will note an asterisk (*) on the left hand side of an assessment topic. The * indicates that a process summary has been entered for that topic. It is recommended that the process summary be updated when the reviewer completes most of the questions for the assessment topic.

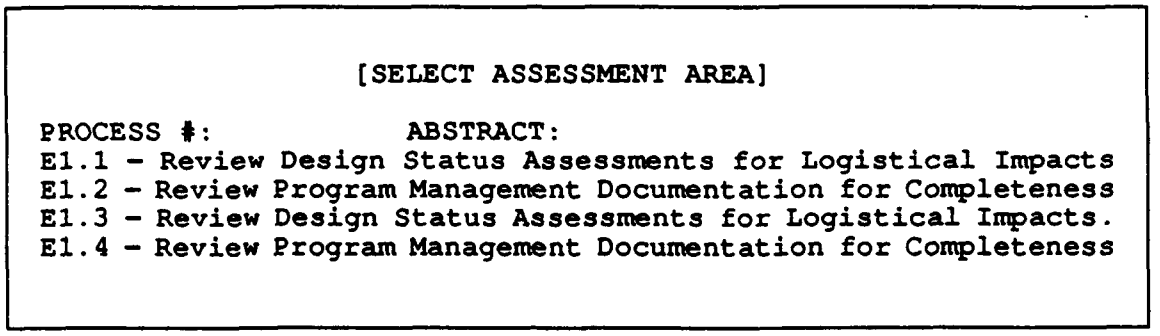


Figure 3-6. Assessment Selection

3.5.4 The user can create, review, or edit a process summary by pressing <F3>. The analyst can enter or revise the process summary on the narrative input screen shown in Figure 3-7. After completion of the summary, press <F10> to save. This saves the summary and allows the analyst to make two ratings that assess the Program Cost & Schedule Impact and Equipment Performance & Sustainability Impact.

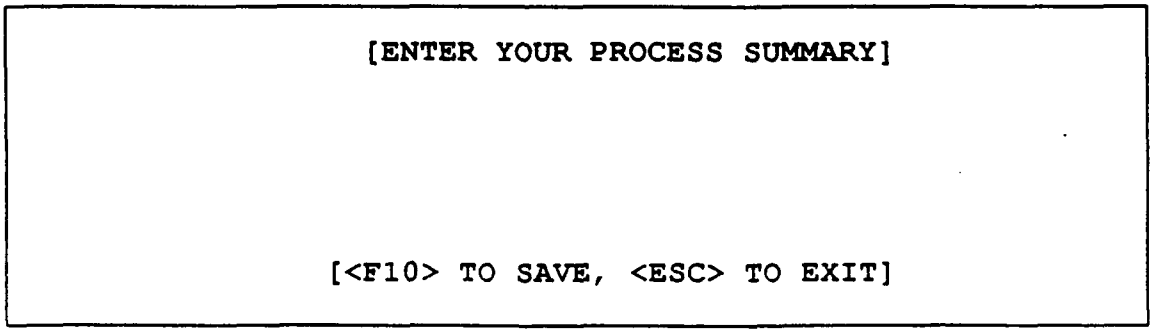


Figure 3-7. Process Summary Screen

QUESTION LIST

3.5.5 When an assessment topic is selected, either a subprocess list appears as shown in Figure 3-8, or a question list is superimposed on the Assessment Selection Screen. The question list shown in Figure 3-9 displays a list of question numbers.

3.5.6 Displayed to the right of each question is its status; DONE, NOT DONE, or N/A(Not Applicable). The status for DONE or NOT DONE is automatically recorded by the software during any of the previous sessions. If the question was answered during any session, it is labeled DONE. It is labeled NOT DONE if it has never been worked on. A N/A (Not Applicable) is displayed when the analyst, during a previous session, determined that the question was not relevant to the equipment or life cycle phase. Refer to Chapter 4 for procedures on performing the assessment.

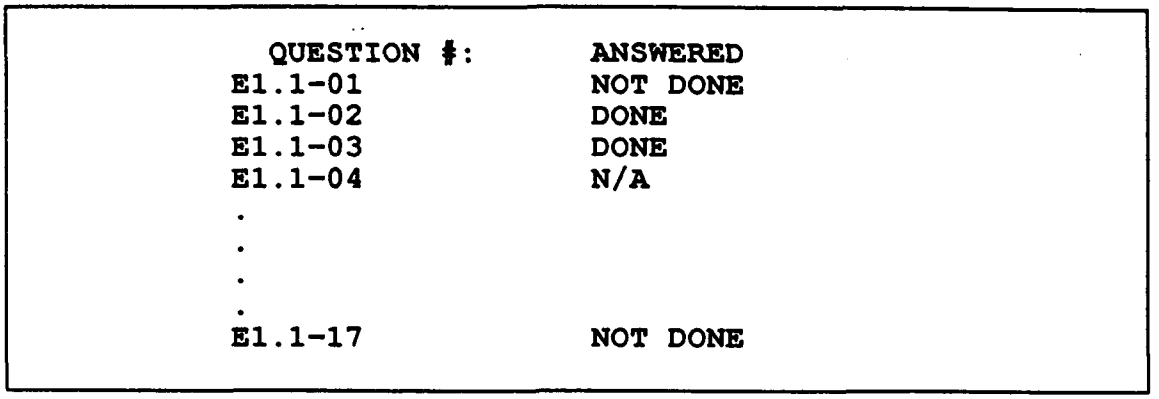
```
                    [SELECT ASSESSMENT AREA]

SUBPROCESS #:                ABSTRACT:
E1.1A1 - Review Tasks or Functions to Mission Requirements Driven
E1.1A2 - Review Maintenance Principles and Level of Repair
E1.1A3 - Review Personnel/Non-Personnel Resource Requirements
E1.1A4 - Review (B) MC use of B Level Army Maintenance Structure
E1.1A6 - Review Maintenance Task and Level of Repair Trade-Offs
```

Figure 3-8. Subprocess Menu Selection

NOTE

In some ILS Assessment Elements, another level of subprocessess exists before the question list is displayed. The selection of topics in this sublevel is identical with the subprocess selection.



QUESTION #:	ANSWERED
E1.1-01	NOT DONE
E1.1-02	DONE
E1.1-03	DONE
E1.1-04	N/A
.	
.	
.	
.	
E1.1-17	NOT DONE

Figure 3-9. Question Menu

3.5.7 When the question list is displayed, the <F4> key can be used to review the last answer to the question that is highlighted. The information that is displayed is the narrative text portion of the assessment. Use the up and down arrow keys or <Page Up> and <Page Down> keys to scroll through the text. To return to the question list press <ESC>. Either review the answer to another question or select a question to answer.

3.6 HELP SYSTEM

3.6.1 The Help System is available to the analyst throughout the operation of the software program. When the analyst presses the <F1> key a help screen is displayed giving information on the particular operation being performed. Use the arrow keys to navigate through the help screens. If additional information is required, press the <F1> again. This displays an ILS Help System Index Selection Screen. Use the arrow keys to highlight the desired selection and press <Enter> to review the Help Screen. Press <ESC> to return to the program.

3.7 NAVIGATION.

3.7.1 NAVIGATION MENU. The navigation menu appears at the top of the screen when each question is displayed. It enables the user to answer the question displayed or go to another question. The user accesses the navigation menu by pressing the <ESC> key when the YES/NO/NA choices are displayed beneath the question. The navigation menu becomes activated on the upper portion of the screen as shown in Figure 3-10. This menu gives the user the options defined in Table 3-1.

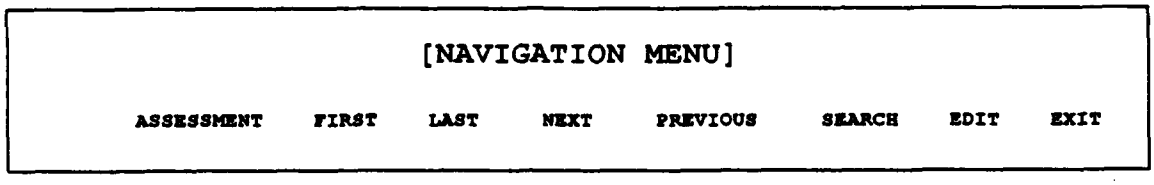


Figure 3-10. Navigation Menu

Table 3-1. Navigation Menu Option Descriptions

NAVIGATION KEYS

SELECTION	FUNCTION
ASSESSMENT	Makes question appearing on the screen active, enabling the analyst to answer it.
FIRST	Displays the first question in the assessment.
LAST	Displays the last question in the assessment.
NEXT	Displays the question after the currently selected question. This option is used to skip a question.
PREVIOUS	Displays the question before the currently selected question. This option is used for answering a question that was skipped or to modify the last answer.
SEARCH	Allows the user to either select a specific question by entering the question number, or searching for a question in another topic. The user selects the topic, a subtopic (if available) and then the specific question desired. This option quickly moves you from one part of the question list to another.
EDIT	Allows the user to edit questions previously answered during this session. The user is returned to the question from which edit was invoked. This option may be used if the analyst wants to review the details of a previously answered question without exiting the software.
EXIT	Allows the user to return to the Main Menu.

CHAPTER 4

ASSESSMENT TECHNIQUES AND PROCEDURES

4.1 INTRODUCTION

4.1.1 This chapter provides the user with the procedures required to perform an ILS assessment. It includes procedures on reviewing previous entries, manipulating of the program and generating assessment results.

4.2 HISTORICAL RESULTS

HISTORICAL RECORDS

4.2.1 The ILS Assessment software is designed to generate a historical record of events over the life cycle of a weapon system. The historical record is developed one session at a time.

CURRENT SESSION

4.2.2 A session begins when an analyst signs on by selecting a weapon system to assess, and ends when he elects to exit. During that current session, all answers to questions are recorded and saved by the software. Changes can be made only to questions answered during a current session. Questions previously answered, may be answered again without affecting data already in the system. Once the analyst exits a current session, no additional changes can be made.

AUDIT TRAIL

4.2.3 As additional sessions are held, the saved records become an audit trail of events that have occurred over the life of the weapon system. This information is used when generating the reports described in Chapter 5.

4.3 MULTIPLE ANALYST USAGE

DIFFERENT USERS

4.3.1 The ILS Assessment software can be used by multiple analysts (one at a time) on one computer. These analysts can assess the same or different aspects of selected equipment. Each analyst can assess the same or a different piece of equipment.

TAGGING RESULTS

4.3.2 Each time a new user enters the program, he completes the Analyst Identification and Sign-on Screens as described in Chapter 3. The program stores the information for each user in a separate record. Every question answered by the analyst during an assessment is tagged with the analyst identification, equipment identification, date, and time the session started.

4.4 PERFORMING AN ASSESSMENT

MAIN MENU

4.4.1 The ILS Assessment Program is entered from the Main Menu. Refer to Chapter 3 for procedures on completing the preliminary screens necessary to reach the Main Menu. From the Main Menu, select the PERFORM ASSESSMENT option under OPERATIONS. This brings up the assessment program.

STARTING ASSESSMENT

4.4.2 Upon selecting the PERFORM ASSESSMENT option from the MAIN MENU, a list of assessment topics is displayed. Each topic has a series of questions which must be answered to perform the assessment. Refer to Appendix B for a complete list of these questions. To select an assessment topic, use the arrow keys to move the highlight bar to the topic desired and press <Enter>. For a further discussion of selecting an assessment topic, see Chapter 3, paragraph 3.5.1 PERFORM ASSESSMENT.

4.5 ANSWERING QUESTIONS

QUESTION SELECTION

4.5.1 After selecting a topic, and a subtopic (if required), the related question list is superimposed on the Assessment Selection Screen. To answer a question, use the arrow keys to move the highlight bar to the desired question number and press <Enter>.

NOTE

The assessment of an answered question can only be changed if it was answered during the current session.

4.5.2 The Question Screen is displayed. The Navigation Menu (see Figure 3-9) appears at the top of the Question Screen, and becomes active (e.g., the program is in a "wait state" while the user makes a selection). The default selection is ASSESSMENT.

4.5.3 To begin answering a question, use the arrow keys to highlight and select the ASSESSMENT option. There are two types of questions that may appear during an assessment. The first type requires either a YES, NO or N/A answer, while the second type requires an explanation.

QUESTION RESPONSE

4.5.4 After reading the question, you can choose to answer it or activate the Navigation Menu by pressing <ESC>. For YES/NO/NA questions, the responses appear below the question and for explanation questions, a box containing a message is displayed.

4.5.5 To answer the first type of question, use the arrow keys to highlight YES, NO, or N/A and press <Enter> to select. Refer to figure 4-1 for an example of how a question screen is displayed.

NOTE

During the assessment procedure, the <F2> function key is used to toggle between the question and the assessment screens. After toggling back to the question, a series of subquestions that discuss additional points are displayed beneath the main question. The <F10> function key is used to save the assessment, and the <ESC> key is used to abort the assessment and proceed to the next question.

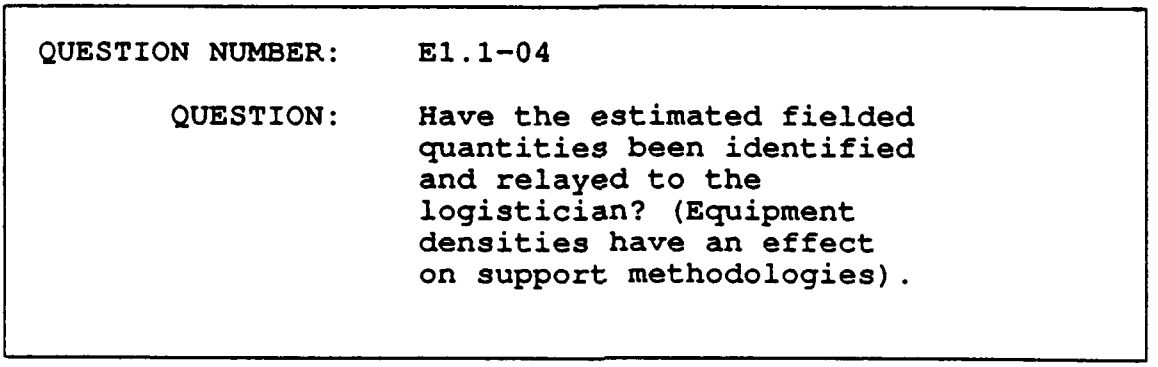


Figure 4-1. Sample Question Screen

4.5.6 Questions of the second type require an explanation instead of a YES, NO, or N/A response. The question types are predetermined and cannot be changed by the user.

4.6 QUESTIONS WITH "EXPLANATION" ANSWERS

EXPLANATION RESPONSE

4.6.1 When an explanation question is selected, a box with the following instructions is displayed at the bottom of a text question screen shown in Figure 4-2.

"<Enter> to proceed, any <Key> next question, <F3> to mark Not Applicable."

4.6.2 ENTERING AN ASSESSMENT. To proceed with your explanation, press <Enter>. The software displays the assessment screen (see Figure 4-3).

4.6.3 NEXT QUESTION. If you decide not to answer the question at this time, press any <Key> other than <Enter> or <F3>. This question is skipped and the software automatically moves to the next question without recording your answer.

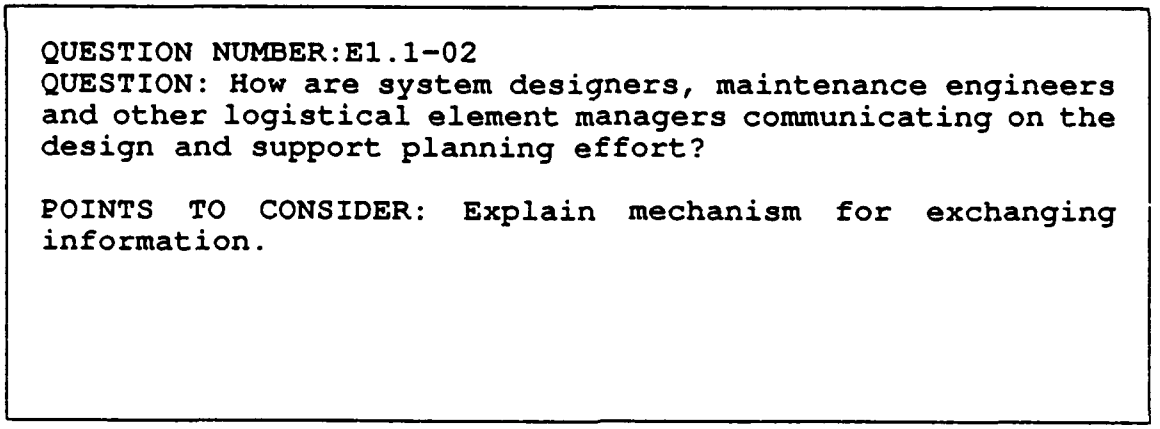


Figure 4-2. Text Question Screen

4.6.4 NOT APPLICABLE. If this question is not applicable to the equipment or life cycle phase press <F3>. The software records your answer and automatically moves to the next question.

4.7 QUESTIONS WITH "YES" ANSWERS

YES RESPONSE

4.7.1 If the response is YES, an assessment screen is displayed (Figure 4-3) for you to enter an assessment (e.g., narrative text answering the question). The assessment screen provides you with a word processing capability. On this screen you may type up to 14 pages of information concerning each question. Your assessment may consist of the work planned or accomplished in the project that deals with the main issue of the question, or actions required to comply with the intent of the question. If you would like to see the question while entering the assessment, press <F2>. After typing in the narrative text of your assessment, the results must be saved by pressing the <F10> key.

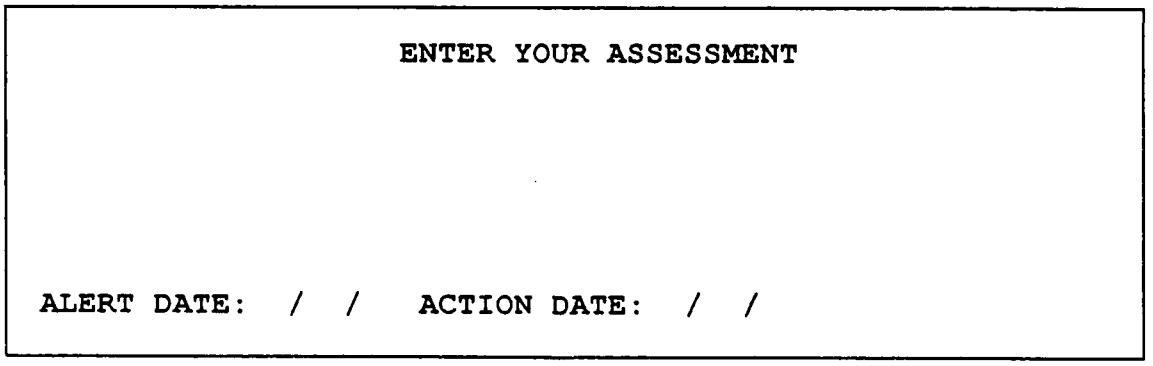


Figure 4-3. Example of the Assessment Screen

ALERT/ ACTION DATE

4.7.2 After completing the assessment and pressing <F10>, the ALERT DATE and ACTION DATE fields are activated. The ALERT DATE field allows the analyst to record a follow-up date to check on specific actions which should be occurring to resolve a problem. The software only accepts the Alert Date if it is greater than or equal to the session date.

4.7.3 The ACTION DATE field permits the analyst to indicate when specific actions must be completed. Action Dates must be greater than or equal to Alert Dates or they will not be accepted by the software. If these dates were completed for the same question during a previous session, the dates appear in the fields provided. To complete or edit the dates, proceed as follows:

a. Complete these fields using the DD/MM/YYYY format. For a single digit, enter a blank space or zero to the left of the digit. The program accepts only actual dates. If an incorrect date is entered, the computer beeps and returns to the first character in the field.

b. Once both fields are completed, a verification message is displayed. If the dates are correct, press <Enter>. If not, type "N" and press <Enter>. The cursor then returns to the ALERT DATE field for editing.

c. There is no requirement to complete these fields. To skip either or both of these fields, press <Enter> once or twice. <Enter> can also be used to accept a field that was previously completed. The verification message is displayed. Press <Enter> to select "Y".

4.8 QUESTIONS WITH "NO" ANSWERS

NO RESPONSE

4.8.1 If the response to the question is NO, a sequence of screens follows. The first is a Cost and Scheduling Impact Screen which is displayed beneath the question as shown in Figure 4-4. This screen gives you the ability to rate the impact on the Weapon System program by selecting CRITICAL, INTERMEDIATE, or ROUTINE.

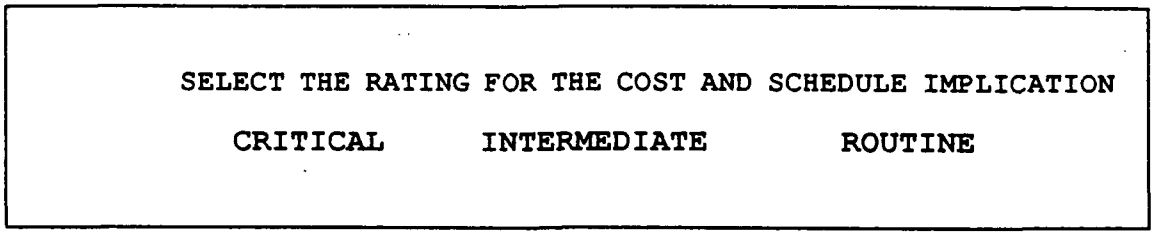


Figure 4-4. Cost and Schedule Rating Screen

SELECT OPTIONS

4.8.2 The user must select one of these options which indicates the time frame for resolving issues that may cause a program schedule slip or cost increase. The CRITICAL option indicates immediate resolution; the INTERMEDIATE option indicates resolution within 30 days; and the ROUTINE option indicates resolution within cost and schedule constraints.

MILESTONE ASSESSMENT

4.8.3 After selecting one of the options, the Milestone Assessment Screen is displayed (Figure 4-5). On this screen, briefly explain what part of the schedule has been impacted or identify the significant cost driver. To save this information, press <F10>. Following completion of the Milestone Schedule Assessment Screen, the user is asked to rate the Performance and Sustainability Implications.

PERF. & SUST.

4.8.4 The Performance and Sustainability Rating Screen is shown in Figure 4-6. The rating options are again CRITICAL, INTERMEDIATE, or ROUTINE. After making the appropriate selection, a Milestone Performance Assessment Screen is displayed. The user enters a brief explanation of how system performance and sustainability is impacted by the issues addressed in the question. To save the information, press <F10>.

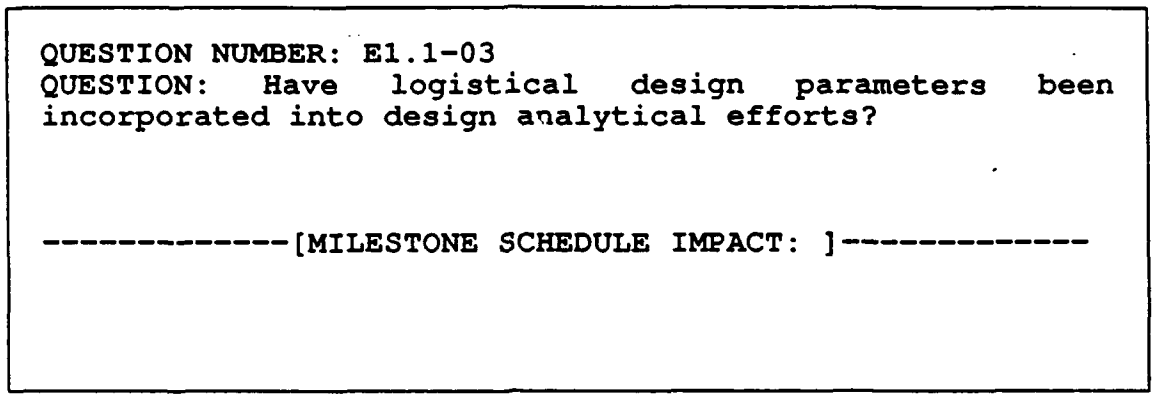


Figure 4-5. Milestone Assessment Screen

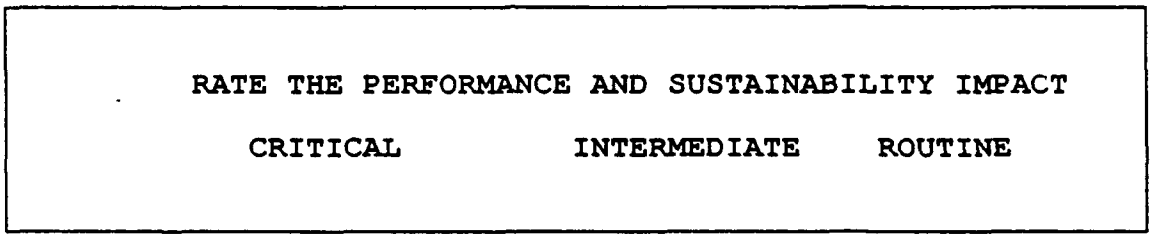


Figure 4-6. Performance and Sustainability Rating Screen

ASSESSMENT RESULTS

4.8.5 The next screen displayed is the Enter Assessment Results Screen. The user enters the assessments results stating why the question was answered "NO". If appropriate, the user should enter a list of actions that must be accomplished to correct any deficiency along with a schedule. Press <F10> to save the information and activate the ALERT DATE and ACTION DATE fields prior to answering the next question. Complete the ALERT DATE fields as indicated in paragraph 4.7.2.

4.9 QUESTIONS WITH "N/A" ANSWERS

MARKING A QUESTION N/A

4.9.1 The user may determine during the course of the assessment that a question is not applicable. A question is not applicable when it is deemed not relevant to the equipment under analysis or does not pertain to the current life cycle phase. To make a question not applicable, use the arrow keys

to highlight the N/A choice and press <Enter> to select it. The software records the response and automatically moves to the next question.

CHANGING THE N/A

4.9.2 If a question was marked not applicable during a previous session (by any analyst assessing the equipment), a message to that effect is displayed, when the question is selected again. If the user determines that the question is now relevant, the N/A response may be changed. Use the <F3> key to return the question to its original state so it can be answered following the procedures described in paragraph 4.5.2

4.10 FUNCTION KEYS

NAVIGATION KEYS

4.10.1 The function keys are used as an aid to the user. If you would like to go to another question, instead of answering the present question, press <ESC>. This displays the navigation menu.

4.10.2 Use the arrow keys to highlight one of the other options of the Navigation Menu. These options are ASSESSMENT, FIRST, LAST, NEXT, PREVIOUS, SEARCH, EDIT, and EXIT. For a description of these selections, refer to Chapter 3, Table 3-1. To return to the Main Menu from the Navigation Menu, the user may press the <ESC> key or highlight and select the EXIT option.

<F10> KEY

4.10.3 <F10> KEY. The <F10> key is available on the Assessment Screen and the two milestone screens. It is used to save the narrative text after the user has finished typing a response.

<ESC> KEY

4.10.4 <ESC> KEY. The <ESC> key has several functions. If you press the <ESC> key prior to selecting a response (i.e. YES/NO/NA) to a question, the Navigation Menu becomes active and the arrow keys can be used to make a selection.

4.10.5 Pressing the <ESC> key from the Navigation Menu, returns you to the Main Menu. If you press <ESC> from the Main Menu, you exit the program.

4.10.6 Pressing the <ESC> key while filling out the assessment screen aborts the answer and displays the next question. Any narrative that is written is not saved.

HELP KEY

4.10.7 <F1> Key. The <F1> key is the help key. Pressing this key displays information to assist the user on using the software, explaining Menu choices or inputting data for a specific screen, and defining the topics on the Assessment Selection Screen. The help key also displays a help menu. This menu allows the user to get context sensitive help for the listed topics.

4.10.8 WORD PROCESSING FUNCTION KEYS. The keys shown in table 4-1, are used when entering text into the program.

Table 4-1. Word Processing Function Keys

WORD PROCESSING KEYS

KEY	FUNCTION
<Insert>	Used to insert a letter, word or phrase between existing words at the location of the cursor.
<Delete>	Used to delete a single letter located under the cursor.
<Backspace>	Used to backspace and erase the previous letter.
<Caps Lock>	Used to enter all upper case letters.
<Enter>	Used to create a hard return to move the cursor to the next line.
<Tab>	Used to indent text line 5 spaces.

CHAPTER 5
REPORT GENERATION

5.1 INTRODUCTION

5.1.1 This chapter provides the user with the information required to generate reports for the ILS assessment performed. All reports can be output to the screen, printer or file.

5.2 SELECTING A REPORT

REPORT CHOICES

5.2.1 The user enters the report generator program from the OPERATIONS option on the Main Menu. After selecting the OPERATIONS option, the user selects the REPORT GENERATOR option. A Reports Welcome Screen is displayed, followed by the Reports Generator Main Menu. The user must press <Enter> on the Report Generation Screen to reach the Main Menu.

5.2.2 The Main Menu has seven report selections and one exit selection. Reports 1 and 2 are executed directly off this menu, while reports 3 through 7 have several submenu options. To select a report, move the highlight bar to the desired choice and press <Enter>. Either a message indicating the report is processing or a window containing a submenu of reports will be displayed. The report options are shown in Figure 5-1 and described in the following paragraphs.

5.2.3 SYSTEM/EQUIPMENT DATA. This option generates a report containing the system/equipment data for this session to the output device selected.

5.2.4 OVERALL ASSESSMENT RESULTS. This option generates a report containing the overall assessment results for the selected equipment to the output device selected.

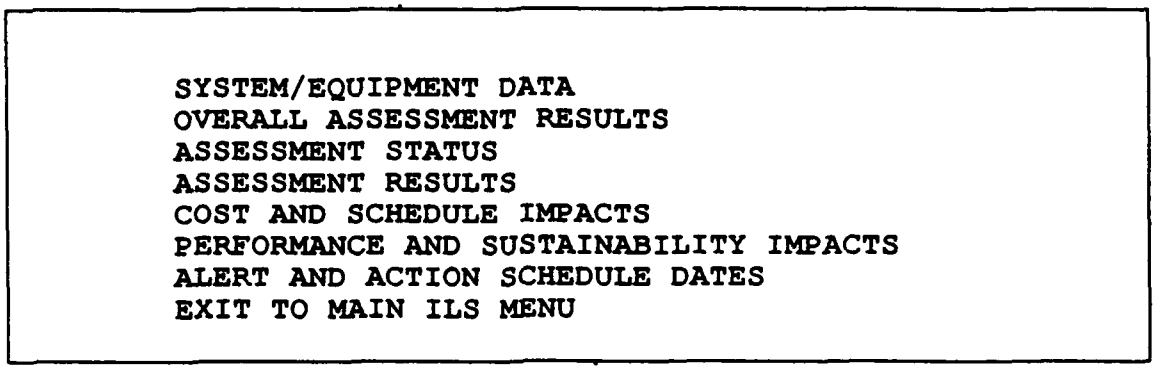


Figure 5-1. Report Generator Main Menu

5.2.5 ASSESSMENT STATUS. This option displays a submenu which allows the user to generate either a WEAPONS SYSTEM CURRENT STATUS REPORT or a CURRENT REVIEW SESSION REPORT. The report is directed to the selected output device.

5.2.6 ASSESSMENT RESULTS. This option displays a submenu which allows the user to select an ASSESSMENT HISTORY REPORT, WEAPONS SYSTEM CURRENT STATUS REPORT or a CURRENT REVIEW SESSION REPORT. The generated report is then directed to the output device selected.

5.2.7 COST AND SCHEDULE IMPACTS. This option displays a submenu which allows the user to select a WEAPONS SYSTEM CURRENT STATUS REPORT, CURRENT REVIEW SESSION REPORT, CRITICALITY ANALYSIS REPORT or a WEAPONS SYSTEM SUMMARY REPORT. The generated report is then directed to the output device selected.

5.2.8 PERFORMANCE AND SUSTAINABILITY IMPACTS. This option displays a submenu which allows the user to select a WEAPONS SYSTEM CURRENT STATUS REPORT, CURRENT REVIEW SESSION REPORT, CRITICALITY ANALYSIS REPORT or a WEAPONS SYSTEM SUMMARY REPORT. The generated report is then directed to the output device selected.

5.2.9 ALERT AND ACTION SCHEDULE DATES. This option displays a submenu which allows the user to select an ALERT DATE ITEMS REPORT or an ACTION DATE ITEMS REPORT. The generated report is then directed to the output device selected.

5.2.10 EXIT TO MAIN ILS MENU. This option terminates the report generator program and returns the user back to the ILS Main Menu.

5.3 CHANGING REPORT DESTINATION

5.3.1 The ILS Assessment software allows the User to output reports to the screen, printer, or file. The mechanism to control the output, device is located on the last line of the Report Menu Screen. Pressing the <F2> key toggles between the three options.

SCREEN OUTPUT

5.3.2 SCREEN OUTPUT. The default device for Report Output is the Screen or Video Display. After the report module loads, the output device is set to screen. After selecting the output device, select any report from the menu and the software generates it. After several minutes the report is displayed to the screen in a format that is analogous to one of the figures presented in Chapter 5. To scroll through the report use the up & down arrow, page up, page down, home, and end keys. Once you have finished reviewing the report, use <ESC> to exit and return to the Report Menu.

PRINTER OUTPUT

5.3.3 PRINTER OUTPUT. Press the <F2> key once to change the output device to printer. Make sure that your printer is on-line. Select the report from the Report Menu. After several minutes your report will begin to print out. Depending on the amount of data in the report, it may take a long period of time for the complete report to print out. At the conclusion of the report, a message indicating the report has finished will be displayed.

FILE OUTPUT

5.3.4 FILE OUTPUT. To change the output device to file, press <F2> twice from the Screen Device option or once from the Printer Device option. When this option is chosen, the file name must be entered. The file name must be eight characters or less. Type the name of the file and press <ENTER>. An .RPT file extension is automatically appended to the name of the file. Choose the Report you wish to generate from the Report Menu and after several minutes a message is displayed indicating the report is complete.

NOTE

Caution should be used when naming reports, since a newly created report file can overwrite an existing report file with the same name.

REPORT FILES

5.3.5 REPORT FILES. The files created from the File Output option are stored in the directory containing the ILS Program. The file is an ASCII text file devoid of any special control characters. The page layout of the information contained in the file is formatted exactly like the printed output. This file maybe imported into a word processor in order to print out only pertinent parts of the report or redirected to a printer at a later date. For instructions on printing a text file from DOS, consult your DOS manual.

SYSTEM/ EQUIPMENT DATA REPORT

5.4 SYSTEM/EQUIPMENT DATA REPORT

5.4.1 This report provides information on the system/equipment being assessed (the system/equipment selected on the Equipment Sign-On Screen). Information related to the life cycle phase, project manager and reviewer is included. Refer to Figure 5-2 for an example of this report.

5.5 OVERALL ASSESSMENT RESULTS REPORT

OVERALL ASSESSMENT RESULTS REPORT

5.5.1 This report contains the narrative text, Cost and Schedule (C/S), and the Performance and Sustainability (P/S) ratings input for each review topic. The C/S and P/S ratings are CRITICAL, INTERMEDIATE, and ROUTINE. The report is sorted by process number and contains the last assessment for each topic. The topic title and the date of the last assessment are also included. Refer to Figure 5-3 for an example of this report.

5.6 ASSESSMENT STATUS REPORT

ASSESSMENT STATUS REPORT

5.6.1 This report has two options: WEAPON SYSTEM CURRENT STATUS and CURRENT REVIEW SESSION REPORT.

5.6.2 These reports contain seven columns. The columns are labeled: Question, Answer, Review Date, Reviewer Initials, C/S Rating, P/S Rating and Action Date. For the questions answered YES, N/A, or Text, the C/S and P/S ratings will not appear. The Action Date may or may not be completed. Any question not answered will have blank columns to the right of the question number.

5.6.3 CURRENT WEAPON SYSTEM STATUS. This report is used to determine the assessment status of the selected System/Equipment. It lists all questions and shows which are answered. A summary is included at the end of the report which indicates the number of questions answered YES/NO/NA/TEXT, and NOT ANSWERED. Following this is a Criticality Summary for the C/S and P/S showing the total number of questions rated as Critical, Intermediate, or Routine. Refer to Figure 5-4 for an example of this report.

5.6.4 CURRENT REVIEW SESSION. This report has the same format as the CURRENT WEAPONS SYSTEM STATUS REPORT. However, it contains only those questions answered during the current session. Refer to Figure 5-5 for an example of this report.

5.7 ASSESSMENT RESULTS REPORT

ASSESSMENT RESULTS REPORT

5.7.1 This report has three options: ASSESSMENT HISTORY REPORT; WEAPON SYSTEM CURRENT STATUS REPORT; and CURRENT REVIEW SESSION REPORT. All versions of this report are generated in question number order, but list only those questions that have been answered. In addition, each topic (e.g., process) begins on a new page.

5.7.2 All reports start with the question number and question. This is followed by any related subquestion (if applicable). The answer (i.e., YES/NO/NA/TEXT), session date, and reviewer's name follow the question. If a YES response was made, the assessment (narrative text) will follow.

5.7.3 If a NO response was entered, the Cost and Schedule Rating and short explanation of the rating will follow. Next, the Performance and Sustainability rating with its short explanation will appear. The last item is the assessment results (narrative text) which may include any actions.

5.7.4 HISTORICAL REPORT. The historical report prints each question and subquestion once. This is followed by all the answers to the question in descending date order (latest to earliest). The answers to a question are separated by a line, and the questions are separated by a gray band. Refer to Figure 5-6 for an example of this report.

5.7.5 CURRENT WEAPON SYSTEM STATUS. This report has the same format as the historical report. However, it contains only one answer to every question. The last answer entered, regardless of the analyst who entered it, is included. Refer to Figure 5-7 for an example of this report.

5.7.6 CURRENT REVIEW SESSION. This report has the same format as the historical report. However, it contains only the answers input by the analyst performing the assessment during the current session. Refer to Figure 5-8 for an example of this report.

5.8 COST AND SCHEDULE IMPACTS REPORTS

COST AND SCHEDULE IMPACTS REPORT

5.8.1 This report has four options: Current Weapon System Status; Current Review Session; Criticality Analysis; and Weapon System Summary.

5.8.2 CURRENT WEAPON SYSTEM STATUS REPORT. This report is sorted by rating. All CRITICAL issues are grouped together followed by INTERMEDIATE and ROUTINE issues. Within each rating group, the questions are broken down by topic where the first question for each topic starts on a new page.

5.8.3 This report is formatted so that question number, question, subquestion (if applicable) appear first. This is followed by the Cost and Schedule Impact (short narrative), and a detailed action field. Refer to Figure 5-9 for an example of this report.

5.8.4 CURRENT REVIEW SESSION. This report has the same format as the Current Weapon System Status Report. However, this report contains only the answers input by the analyst during the current session. Refer to Figure 5-10 for an example of this report.

5.8.5 CRITICALITY ANALYSIS REPORT. This report provides a summary of problem areas for the equipment being assessed. The report is grouped by rating (CRITICAL, INTERMEDIATE, or ROUTINE). It contains all questions whose last answer was NO. Within each grouping, the topics are sorted by topic number and within each topic, the questions are sorted by question number. For each question, the alert and action dates are listed. At the conclusion of each group, the total number of questions within each rating group is provided. At the end of the report, the total number of questions (e.g. TOTAL ACTIONS) counted in the report is provided. Refer to Figure 5-11 for an example of this report.

5.8.6 WEAPON SYSTEM SUMMARY REPORT. This report compares, by topic, the number of questions rated CRITICAL, INTERMEDIATE, and ROUTINE to the number answered satisfactorily and also includes those remaining to be answered.

5.8.7 This report contains seven columns labeled: Process #; Title; Critical; Intermediate; Routine; Satisfactory; and To Do. It is sorted by process number and reflects only the last answer to each question. All topics are included, even if no questions were answered. The report is intended to identify those topics where a large number of problems exist, and therefore require additional effort. Refer to Figure 5-12 for an example of this report.

5.9 PERFORMANCE AND SUSTAINABILITY IMPACT REPORTS

PERFORM-ANCE & SUSTAIN-ABILITY

5.9.1 This report has four options: Current Weapon System Status; Current Review Session; Criticality Analysis; and Weapon System Summary.

5.9.2 CURRENT WEAPON SYSTEM STATUS REPORT. This report is sorted by rating. All CRITICAL issues are grouped together followed by INTERMEDIATE and ROUTINE issues. Within each rating group, the questions are broken down by topic where the first question for each topic starts on a new page. Refer to Figure 5-13 for an example of this report.

5.9.3 This report is formatted so that question number, question and subquestion (if applicable) appear first. This is followed by the Cost and Schedule Impact (short narrative), and a detailed action field.

5.9.4 CURRENT REVIEW SESSION. This report has the same format as the Current Weapon System Status Report. However, it contains only the answered questions entered by the analyst during the current session. Refer to Figure 5-14 for an example of this report.

5.9.5 CRITICALITY ANALYSIS REPORT. This report provides a summary of problem areas for the equipment being assessed. The report is grouped by rating (CRITICAL, INTERMEDIATE, or ROUTINE). It contains all questions whose last answer was NO. Within each grouping, the topics are sorted by topic number and within each topic, the questions are sorted by question number. For each question, the alert and action dates are listed. At the conclusion of each group, the total number of questions within each rating group is provided. At the end of the report, the total number of questions (e.g. TOTAL ACTIONS) counted in this report is provided. Refer to Figure 5-15 for an example of this report.

5.9.6 WEAPON SYSTEM SUMMARY REPORT. This report compares, by topic, the number of questions rated CRITICAL, INTERMEDIATE, and ROUTINE to the number answered satisfactorily and also includes those still remaining to be answered.

5.9.7 This report contains seven columns labeled: Process #; Title; Critical; Intermediate; Routine; Satisfactory; and To Do. It is sorted by process number and reflects only the last answer to each question. All topics are included, even if no questions were answered. The report is intended to identify those topics where a large number of problems exist, and therefore require additional effort. Refer to Figure 5-16 for an example of this report.

5.10 ALERT AND ACTION SCHEDULE DATES REPORTS

ALERT AND ACTION SCHEDULE DATES REPORTS

5.10.1 This report has two options: Alert Date List of Problem Areas; and Action Date List of Problem Areas. The Alert Date List contains a set of follow-up dates related to specific questions, while the Action Date List contains a set of completion dates related to specific actions associated with a question. Each report is a Weapon System Current Status type, but contains only those questions where dates were entered. The questions are sorted by ALERT or ACTION date.

5.10.2 ALERT DATE ITEMS LIST. This report contains all questions where the ALERT DATE has been completed. It is sorted by ALERT DATE from the oldest to the newest. There are six columns in the report that are labeled: Question, Answer. C/S Rating, P/S Rating, Alert Date, and Days Left. The report contains YES/NO/TEXT answers. For YES and TEXT answers, the ratings are blank. The Days Left column indicates the number of days remaining from the Report Date before a follow-up is required. A negative number in this column indicates that the follow-up date has passed. Refer to Figure 5-17 for an example of this report.

5.10.3 ACTION DATE ITEMS LIST. This report contains all questions where the ACTION DATE has been completed. It is sorted by ACTION DATE from the oldest to the newest. There are six columns in the report that are labeled: Question, Answer, C/S Rating, P/S Rating, Alert Date, and Days Left. The report contains YES/NO/TEXT answers. For YES and TEXT answers, the ratings are blank. The Days Left column indicates the number of days remaining from the Report Date before all actions associated with the question must be completed. A negative number in this column indicates that the actions have not been completed. Refer to Figure 5-18 for an example of this report.

PAGE #: 1 10/12/90

ASSESSMENT OF ILS MAINTENANCE PLANNING
REVIEW MANAGEMENT REPORT

EQUIPMENT IDENTIFICATION:

SYSTEM: XX XX XXXXXX
SUBSYSTEM: Not Subsystem

MILESTONE IDENTIFICATION:

LOCAL ILS: XXX
AMC PAM 70-20: XXX
DA PAM 700-26: X

PROJECT MANAGER POINT OF CONTACT:

COMMAND/OFFICE: XXXXXXXX
CONTACT NAME: XXX X., XXXX
CONTACT PHONE: 1(XXX)-XXX-XXXX

REVIEWER REFERENCES:

COMMAND/OFFICE: XXXX
REVIEWER NAME: XXXXX, XXXXXX
PHONE: 1(XXX)-XXX-XXXX
REVIEW DATE: XX/XX/XX
AUTOVON PHONE:

SEND REPORT TO: XXXX XXXXXX

NOTES:

Figure 5-2. System/Equipment Data Report

OVERALL ASSESSMENT RESULTS
WEAPON SYSTEM CURRENT STATUS

ASSESSMENT OF MAINTENANCE PLANNING

EQUIPMENT ID: XXXXXX MILESTONE: XXX

Page #1 REPORT DATE: XX/XX/XX

E1.1	Review Design for Logistical Impacts	Review Date XX/XX/XX	C/S INTERMED	P/S ROUTINE

Summary

E1.3A1	Review Tasks or Functions to Mission Requirements	Review Date XX/XX/XX	C/S CRITICAL	P/S CRITICAL

Summary

E1.4A1	Review (P)MAC for Accuracy & Completeness	Review Date XX/XX/XX	C/S	P/S

Summary

E1.5A1	Assess Reliability Centered Maintenance (RCM) Results	Review Date	C/S	P/S

Summary

Figure 5-3. Overall Assessment Results Report

WEAPON SYSTEM CURRENT ILS STATUS
ASSESSMENT OF ILS MAINTENANCE PLANNING

EQUIPMENT ID: XXXXXX MILESTONE: XXX

PAGE #: 1 REPORT DATE: XX/XX/XX

QUESTION	ANSWER	REVIEW DATE	INIT	COST & SCHED RATING	PERF & SUST RATING	ACTION DATE
E1.1	Review Design for Logistical Impacts					
E1.1-01						
E1.1-02						
E1.1-03	NO	XX/XX/XX	AA	INTERMED	INTERMED	XX/XX/XX
E1.1-04						
E1.1-05	TEXT	XX/XX/XX	BB	---	---	/ /
E1.1-06						
E1.1-07						
E1.1-08						
E1.1-09						
E1.1-10						
E1.1-11						
E1.1-12						
E1.2	Review Program Management Documentation for Completeness					
E1.2-01						
E1.2-02						
E1.2-03	YES	XX/XX/XX	AA	---	---	/ /
E1.2-04						
E1.2-05	TEXT	XX/XX/XX	BB	---	---	/ /
E1.2-06	NO	XX/XX/XX	CC	ROUTINE	ROUTINE	XX/XX/XX
E1.2-07						
E1.2-08						
E1.2-09						
E1.2-10						
E1.2-11						
E1.2-12						
E1.3A1	Review Tasks or Functions to Mission Requirements					
E1.3A-01						
E1.3A-02						
E1.3A-03						
E1.3A-04						
E1.3A-05						

Figure 5-4. Assessment Status Report (Weapon System Current Status) Sheet 1 of 2

WEAPON SYSTEM CURRENT ILS STATUS
ASSESSMENT OF ILS MAINTENANCE PLANNING

EQUIPMENT ID: XXXXXX	MILESTONE: XXX

PAGE #: XX REPORT DATE: XX/XX/XX

REVIEW STATUS SUMMARY

YES	10
NO	8
N/A	4
TEXT	2
UNANSWERED	198
TOTAL	222

CRITICALITY SUMMARY

	CRITICAL	INTERMEDIATE	ROUTINE
Cost and Schedule	4	3	1
Performance and Sustainability	3	3	2
Total	7	6	3

Figure 5-4. Assessment Status Report (Weapon System Current Status) Sheet 2 of 2

CURRENT REVIEW SESSION REPORT
ASSESSMENT OF ILS MAINTENANCE PLANNING

EQUIPMENT ID: XX XX XXXXX REVIEWER: X. XXXXXX
REVIEW DATE: XX/XX/XX OFFICE SYMBOL: XXXXX
MILESTONE: XXX

PAGE #: 1 XX/XX/XX

QUESTION	ANSWER	COST & SCHED RATING	PERF & SUST RATING	ACTION DATE
E1.6A3	Review Depot Support Plans			
E1.6A3-01	YES	---	---	/ /
E1.6A3-02	YES	---	---	XX/XX/XX
E1.6A3-03	N/A	---	---	---
E1.6A4	Review ISSA, HNS, CLS, ICLS Implementation Plans			
E1.6A4-01	N/A	---	---	---
E1.6A4-02	N/A	---	---	---
E1.6A6	Review Warranty Implementation Plans			
E1.6A6-01	NO	CRITICAL	INTERMEDIATE	XX/XX/XX
E1.6A7	Review SDC Plans and Execution			
E1.6A7-01	NO	INTERMEDIATE	ROUTINE	XX/XX/XX
E1.7A1	Review Sub-Assessments for Overall Consistency			
E1.7A1-02	NO	CRITICAL	CRITICAL	XX/XX/XX
E1.7A4	Identify Actions Requiring Further Analysis for Resolution			
E1.7A4-01	YES	---	---	XX/XX/XX

Figure 5-5. Assessment Status Report (Current Review Session Report)

HISTORICAL ASSESSMENT RESULTS
ASSESSMENT OF MAINTENANCE PLANNING

EQUIPMENT ID: XXXXXX MILESTONE: XXX

PAGE #: XX REPORT DATE: XX/XX/XX

PROCESS E1.1 Review Design for Logistical Impacts

---------- QUESTION----------
QUESTION #: E1.1-01
Do design specifications establish logistical requirements (i.e., maintainability, reliability) to meet system readiness objectives and the operational scenarios?

ANSWER: YES SESSION DATE: XX/XX/XX REVIEWER: X. XXXXX

----------ASSESSMENT----------

ANSWER: NO SESSION DATE: XX/XX/XX REVIEWER: X. XXXXX

COST & SCHEDULE RATING: ROUTINE
COST & SCHEDULE IMPACT:

PERFORMANCE & SUSTAINABILITY RATING: ROUTINE
PERFORMANCE AND SUSTAINABILITY IMPACT:

----------ACTION----------

Figure 5-6. Assessment Results Report (Assessment History)

ASSESSMENT RESULTS
WEAPON SYSTEM CURRENT STATUS
ASSESSMENT OF MAINTENANCE PLANNING

EQUIPMENT ID: XXXXXX MILESTONE: XXX

PAGE #: XX REPORT DATE: XX/XX/XX

PROCESS E1.1 Review Design for Logistical Impacts

---------- QUESTION----------

QUESTION #: E1.1-02
How are system designers, maintenance engineers, and other logistical element managers communicating on the design and support planning effort?

----------SUBQUESTION----------

o Explain mechanism for exchanging information.

ANSWER: TEXT SESSION DATE: XX/XX/XX REVIEWER: X. XXXXX

----------ASSESSMENT----------

Figure 5-7. Assessment Results Report (Weapons System Current Status)

ASSESSMENT RESULTS
CURRENT REVIEW SESSION
ASSESSMENT OF MAINTENANCE PLANNING

EQUIPMENT ID: XXXXXX MILESTONE: XXX

PAGE #: XX REPORT DATE: XX/XX/XX

PROCESS E1.1 Review Design for Logistical Impacts

---------- QUESTION----------

QUESTION #: E1.1-02
How are system designers, maintenance engineers, and other logistical element managers communicating on the design and support planning effort?

ANSWER: TEXT SESSION DATE: XX/XX/XX REVIEWER: X. XXXXX

----------ASSESSMENT----------

Figure 5-8. Assessment Results Report (Current Review Session)

COST AND SCHEDULE IMPACT REPORT
WEAPON SYSTEM CURRENT STATUS
ASSESSMENT OF ILS MAINTENANCE PLANNING

EQUIPMENT ID: XXXXXX OFFICE SYMBOL: XXXXX
ILS MILESTONE: XXX

Page #: 1 Report Date: XX/XX/XX

CRITICAL ISSUE

E1.4A1 Review (P)MAC for Accuracy & Completeness
QUESTION #: E1.4A1-02

---------- QUESTION----------

Do the functional group codes adequately reflect the system from a top-down breakdown?

----------SUBQUESTION----------

-Identify functional groups that have placed at incorrect level in the breakdown. -How will this functional group be placed at the correct level? (The End Item Family Tree is useful in performing this analysis.)

COST AND SCHEDULE IMPACT
(A three line text field that includes a short explanation of the cost and/or schedule impact.)

----------ACTION----------

Figure 5-9. Cost and Schedule Impacts Report (Weapons System Current Status)

COST AND SCHEDULE IMPACT REPORT
CURRENT REVIEW SESSION
ASSESSMENT OF ILS MAINTENANCE PLANNING

EQUIPMENT ID: XXXXXX OFFICE SYMBOL: XXXXX
ILS MILESTONE: XXX

Page #: 1 Report Date: XX/XX/XX

CRITICAL ISSUE

PROCESS # :E1.4A03 Review Compatibility of (P)MAC
QUESTION #: E1.4A1-02 with (B)MC

---------- QUESTION----------

Have adequate and accurate task times been input into the (P)MAC?

----------SUBQUESTION----------

-Specify whether the results of testing and demonstrations contradict these values. -Identify the reason the times in (P)MAC and the actual times are different (e.g., training, publications etc.)

COST AND SCHEDULE IMPACT

81 MM Mortar Question E1.4A03-03
XX/XX/XX C&S Rating: Critical
Session #X Analyst: XXX XXXX

----------ACTION----------

Figure 5-10. Cost and Schedule Impacts Report (Current Review Session Report)

COST AND SCHEDULE IMPACT REPORT
CRITICALITY ANALYSIS REPORT
ASSESSMENT OF ILS MAINTENANCE PLANNING

EQUIPMENT ID: XXXXXX ILS MILESTONE: XXX
LAST SESSION DATE: XX/XX/XX REVIEWER: X. XXXXXX

Page #: 1 Report Date: XX/XX/XX

----------CRITICAL----------

E1.4A1 Review (P)MAC for Accuracy & Completeness
E1.4A1.02 ALERT DATE: ACTION DATE:

E1.6A6 Review Warranty Implementation Plans
E1.6A6-01 ALERT DATE: XX/XX/XX ACTION DATE: XX/XX/XX

E1.7A1 Review Sub-Assessments for Overall Consistency
E1.7A1-02 ALERT DATE: XX/XX/XX ACTION DATE: XX/XX/XX

TOTAL CRITICAL ACTIONS: 3

----------INTERMEDIATE----------

E1.1 Review Design for Logistical Impacts.
E1.1-07 ALERT DATE: XX/XX/XX ACTION DATE:XX/XX/XX

E1.4A1 Review (P)MAC for Accuracy & Completeness
E1.4A1-03 ALERT DATE: XX/XX/XX ACTION DATE: XX/XX/XX

E1.6A7 Review SDC Plans and Execution.
E1.6A7-01 ALERT DATE: XX/XX/XX ACTION DATE: XX/XX/XX

TOTAL INTERMEDIATE ACTIONS: 3

----------ROUTINE----------

E1.2 Review Program Management Documentation for Completeness
E1.2-07 ALERT DATE: XX/XX/XX ACTION DATE:XX/XX/XX

TOTAL ROUTINE ACTIONS: 3

SUMMARY TOTAL ACTIONS: 7

Figure 5-11. Cost and Schedule Impacts (Criticality Analysis)

COST AND SCHEDULE SUMMARY REPORT
ASSESSMENT OF MAINTENANCE PLANNING

EQUIPMENT ID: XXXXXX ILS MILESTONE: XXX
LAST SESSION DATE: XX/XX/XX REVIEWER: X. XXXXXX

Page #: 1 Report Date: XX/XX/XX

Process #	Title	Crit	Int	Rout	Sat	To Do
E1.1	Review Design for Logistical Impacts.	0	1	0	1	14
E1.2	Review Program Management Documentation for Completeness	0	0	1	5	3
E1.3A1	Review Tasks or Functions to Mission Requirements	0	0	0	0	11
E1.3A2	Review Maintenance Principles and Level of Repair.	0	0	0	0	11
E1.3A3	Review Personnel/Non-Personnel Resource Requirements	0	0	0	0	11
E1.3A4	Review (B) MC use of 3 Level Army Maintenance Structure	0	0	0	0	2
E1.3A5	Review Host Nation Support (HNS), Interservice Support	0	0	0	0	15
E1.3A6	Review Maintenance Task and Level of Repair Trade-Offs	0	0	0	0	2
E1.3A7	Assess Achievement of SRO and Supportability Objectives	0	0	0	0	3

Figure 5-12. Cost and Schedule Impacts (Weapon System Summary)

PERFORMANCE AND SUSTAINABILITY REPORT
WEAPON SYSTEM CURRENT STATUS
ASSESSMENT OF ILS MAINTENANCE PLANNING

EQUIPMENT ID: XXXXXX OFFICE SYMBOL: XXXXX
ILS MILESTONE: XXX

Page #: 1 Report Date: XX/XX/XX

CRITICAL ISSUE

E1.4A1 Review (P)MAC for Accuracy & Completeness
QUESTION #: E1.4A1-02

---------- QUESTION----------

Do the functional group codes adequately reflect the system from a top-down breakdown?

----------SUBQUESTION----------

-Identify functional groups that have placed at incorrect level in the breakdown. -How will this functional group be placed at the correct level? (The End Item Family Tree is useful in performing this analysis.)

COST AND SCHEDULE IMPACT
(This is a three line text field in which a short explanation of the performance and sustainability impact is included.)

----------ACTION----------

Figure 5-13. Performance and Sustainability Impacts Report (Weapons System Current Status)

PERFORMANCE AND SUSTAINABILITY REPORT
CURRENT REVIEW SESSION
ASSESSMENT OF ILS MAINTENANCE PLANNING

EQUIPMENT ID: XXXXXX OFFICE SYMBOL: XXXXX
ILS MILESTONE: XXX

Page #: 1 Report Date: XX/XX/XX

CRITICAL ISSUE

E1.4A1 Review (P)MAC for Accuracy & Completeness
QUESTION #: E1.4A1-02

---------- QUESTION----------

Do the functional group codes adequately reflect the system from a top-down breakdown?

----------SUBQUESTION----------

-Identify functional groups that have placed at incorrect level in the breakdown. -How will this functional group be placed at the correct level? (The End Item Family Tree is useful in performing this analysis.)

COST AND SCHEDULE IMPACT
MS_SCHED_M -the long character field for MS_SCHED_M. Information about this record: qn=E1.4A1-02, sn=9007181406.

----------ACTION----------

Figure 5-14. Performance and Sustainability Impacts Report (Current Review Session)

PERFORMANCE AND SUSTAINABILITY REPORT
CRITICALITY ANALYSIS REPORT
ASSESSMENT OF ILS MAINTENANCE PLANNING

EQUIPMENT ID: XXXXXX ILS MILESTONE: XXX
LAST SESSION DATE: XX/XX/XX REVIEWER: X. XXXXXX

Page #: 1 Report Date: XX/XX/XX

----------CRITICAL----------

E1.4A1 Review (P)MAC for Accuracy & Completeness
E1.4A1.02 ALERT DATE: ACTION DATE:

E1.6A6 Review Warranty Implementation Plans
E1.6A6-01 ALERT DATE: XX/XX/XX ACTION DATE: XX/XX/XX

E1.7A1 Review Sub-Assessments for Overall Consistency
E1.7A1-02 ALERT DATE: XX/XX/XX ACTION DATE: XX/XX/XX

TOTAL CRITICAL ACTIONS: 3

----------INTERMEDIATE----------

E1.1 Review Design for Logistical Impacts.
E1.1-07 ALERT DATE: XX/XX/XX ACTION DATE:XX/XX/XX

E1.4A1 Review (P)MAC for Accuracy & Completeness
E1.4A1-03 ALERT DATE: XX/XX/XX ACTION DATE: XX/XX/XX

E1.6A7 Review SDC Plans and Execution.
E1.6A7-01 ALERT DATE: XX/XX/XX ACTION DATE: XX/XX/XX

TOTAL INTERMEDIATE ACTIONS: 3

----------ROUTINE----------

E1.2 Review Program Management Documentation for Completeness
E1.2-07 ALERT DATE: XX/XX/XX ACTION DATE:XX/XX/XX

TOTAL ROUTINE ACTIONS: 3

SUMMARY TOTAL ACTIONS: 7

Figure 5-15. Performance and Sustainability Impacts (Criticality Analysis)

PERFORMANCE AND SUSTAINABILITY SUMMARY REPORT
ASSESSMENT OF MAINTENANCE PLANNING

EQUIPMENT ID: XXXXXX ILS MILESTONE: XXX
LAST SESSION DATE: XX/XX/XX REVIEWER: X. XXXXXX

Page #: 1 Report Date: XX/XX/XX

Process #	Title	Crit	Int	Rout	Sat	To Do
E1.1	Review Design for Logistical Impacts.	0	1	0	1	14
E1.2	Review Program Management Documentation for Completeness	0	0	1	5	3
E1.3A1	Review Tasks or Functions to Mission Requirements	0	0	0	0	11
E1.3A2	Review Maintenance Principles and Level of Repair.	0	0	0	0	11
E1.3A3	Review Personnel/Non-Personnel Resource Requirements	0	0	0	0	11
E1.3A4	Review (B) MC use of 3 Level Army Maintenance Structure	0	0	0	0	2
E1.3A5	Review Host Nation Support (HNS), Interservice Support	0	0	0	0	15
E1.3A6	Review Maintenance Task and Level of Repair Trade-Offs	0	0	0	0	2
E1.3A7	Assess Achievement of SRO and Supportability Objectives	0	0	0	0	3

Figure 5-16. Performance and Sustainability Impacts (Weapon System Summary)

ACTION DATE LIST OF PROBLEM AREAS
ASSESSMENT OF ILS MAINTENANCE PLANNING

EQUIPMENT ID: XXXXXX OFFICE SYMBOL: XXXXX
ILS MILESTONE: XXX

Page #: 1 Report Date: XX/XX/XX

QUESTION	ANSWER	COST & SCHED RATING	PERF & SUST RATING	ALERT DATE	DAYS LEFT
E1.7A1-02	NO	CRITICAL	CRITICAL	XX/XX/XX	-98
E1.6A7-01	NO	INTERMEDIATE	ROUTINE	XX/XX/XX	-97
E1.1-07	NO	INTERMEDIATE	INTERMEDIATE	XX/XX/XX	-69
E1.6A6-01	NO	CRITICAL	INTERMEDIATE	XX/XX/XX	228
E1.6A3-02	YES	---	---	XX/XX/XX	425

Figure 5-17. Alert and Action Schedule Dates (Alert Date Items)

ACTION DATE LIST OF PROBLEM AREAS
ASSESSMENT OF ILS MAINTENANCE PLANNING

EQUIPMENT ID: XXXXXX OFFICE SYMBOL: XXXXX
ILS MILESTONE: XXX

Page #: 1 Report Date: XX/XX/XX

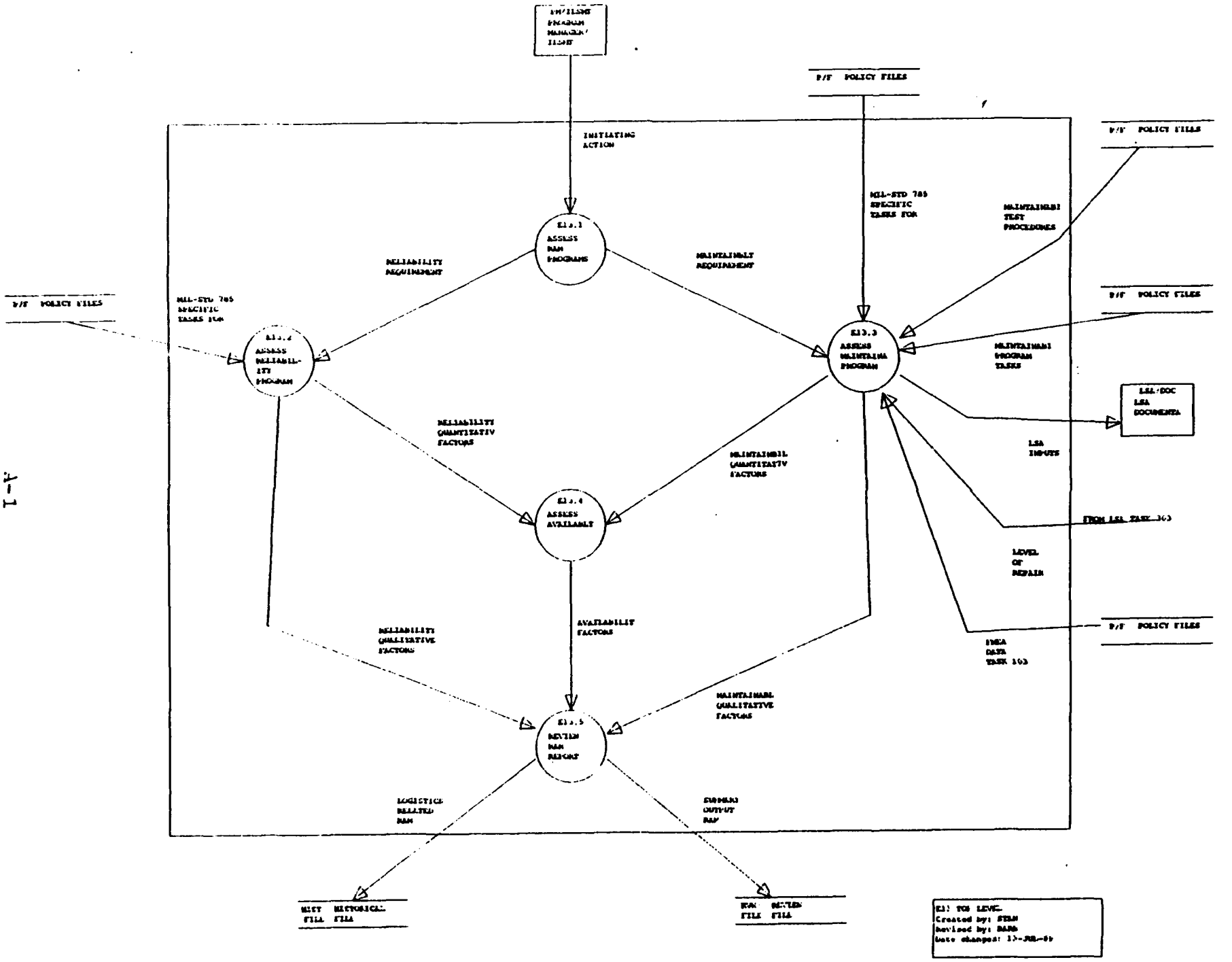
QUESTION	ANSWER	COST & SCHED RATING	PERF & SUST RATING	ACTION DATE	DAYS LEFT
E1.7A1-02	NO	CRITICAL	CRITICAL	XX/XX/XX	-98
E1.6A7-01	NO	INTERMEDIATE	ROUTINE	XX/XX/XX	-97
E1.1-07	NO	INTERMEDIATE	INTERMEDIATE	XX/XX/XX	-69
E1.6A6-01	NO	CRITICAL	INTERMEDIATE	XX/XX/XX	228
E1.6A3-02	YES	---	---	XX/XX/XX	425

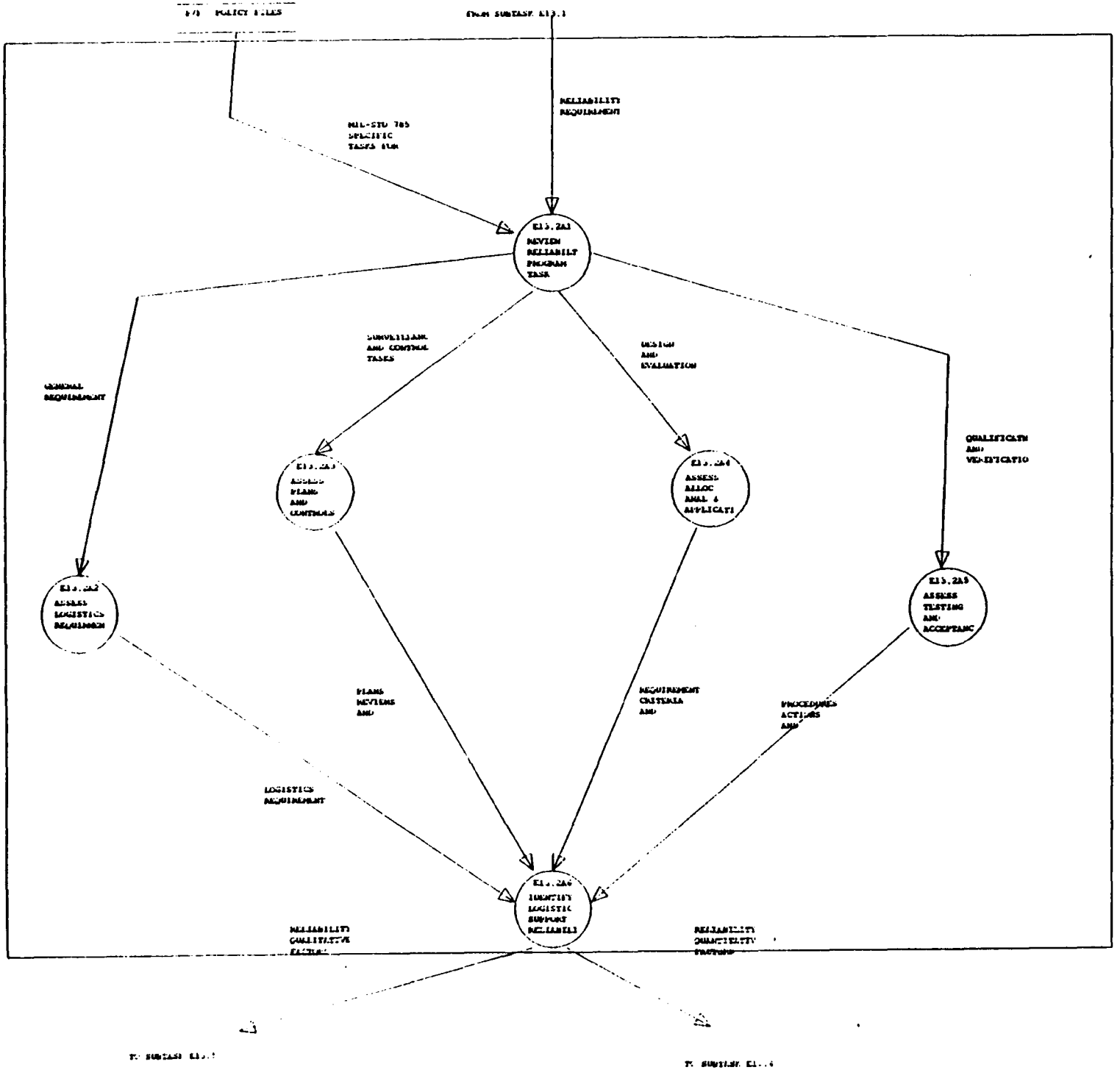
Figure 5-18. Alert and Action Schedule Dates
(Action Date Items)

APPENDIX A

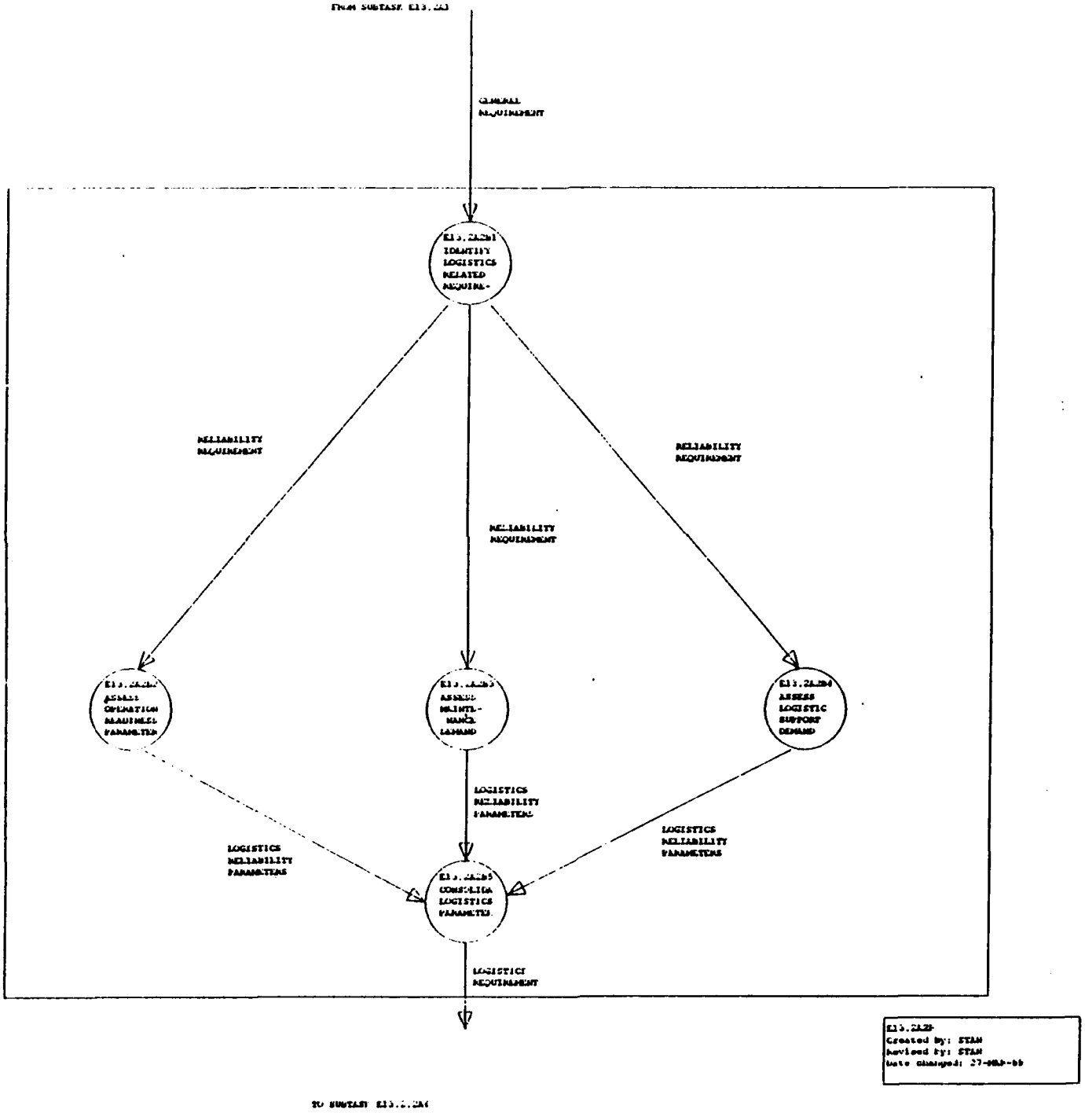
ILS ELEMENT E13
RELIABILITY, AVAILABILITY, MAINTAINABILITY AND DURABILITY (RAM-D)

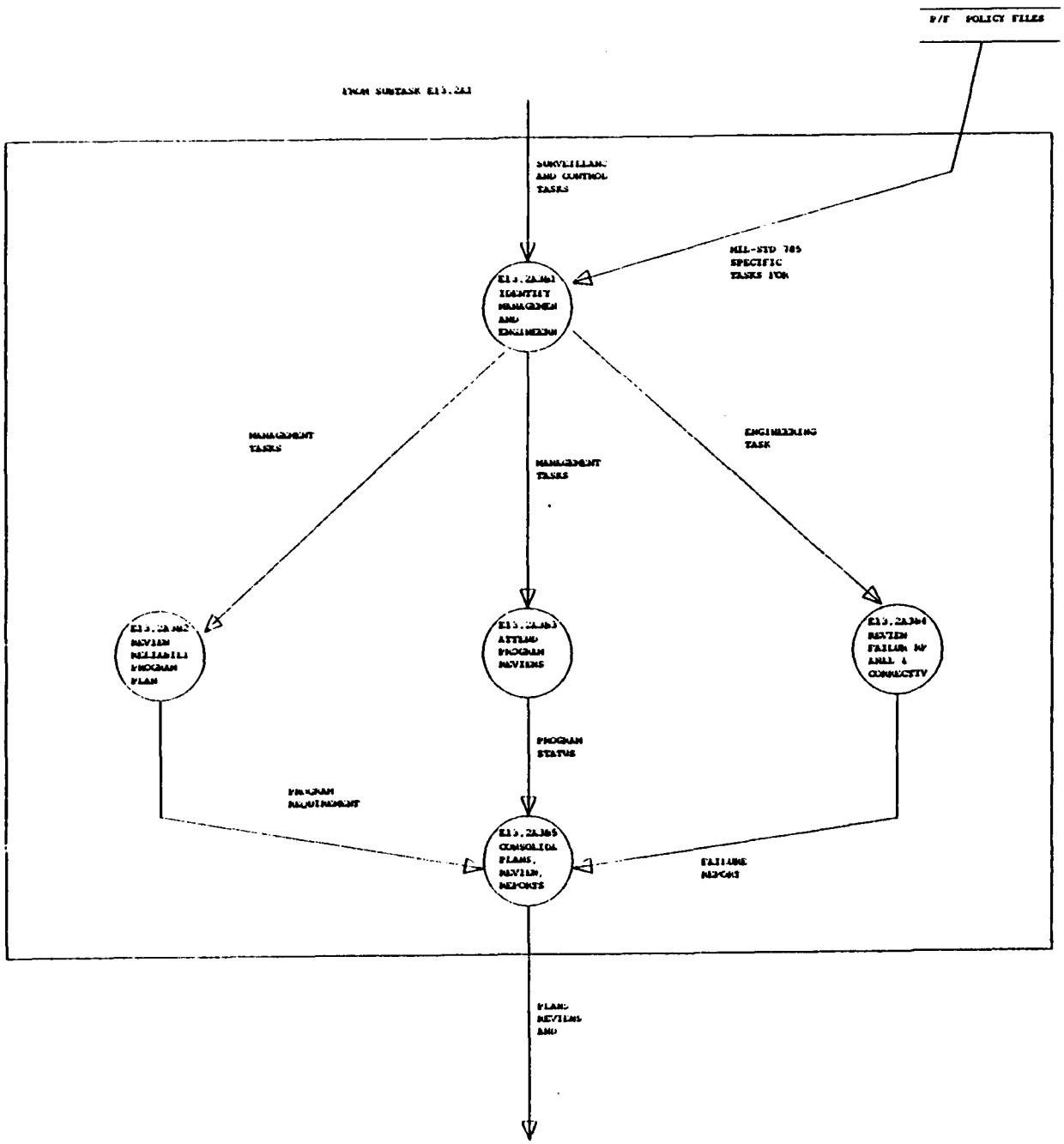
DATA FLOW DIAGRAMS


INITIATING ACTION
D/F POLICY FILES
MIL-STD 785 SPECIFIC TASKS FOR
MAINTAINABI TEST PROCEDURES
D/F POLICY FILES
D/F POLICY FILES
MIL-STD 785 SPECIFIC TASKS FOR
E3.1 ASSESS RAM PROGRAMS
RELIABILITY REQUIREMENT
MAINTAINABLT REQUIREMENT
E3.2 ASSESS RELIABIL-ITI PROGRAM
E3.3 ASSESS MAINTAINA PROGRAM
MAINTAINABI PROGRAM TASKS
LSI/DOC LSA DOCUMENTA
LSA INPUTS
RELIABILITI QUANTITATIV FACTORS
MAINTAINABIL QUANTITATV FACTORS
E3.4 ASSESS AVAILABLT
FROM LSA TASK 303
LEVEL OF REPAIR
D/F POLICY FILES
RELIABILITI QUALITATIVE FACTORS
AVAILABILIT FACTORS
MAINTAINABL QUALITATIVE FACTORS
MEA DATA TASK 103
E3.5 REVIEW RAM REPORT
LOGISTICS RELATED RAM
D/F RAM REVIEW FILE FILE
MIST HISTORICAL FILL FILE
E3: TOP LEVEL
Created by: STEM
Revised by: BARR
Date changed: 13-JUL-84

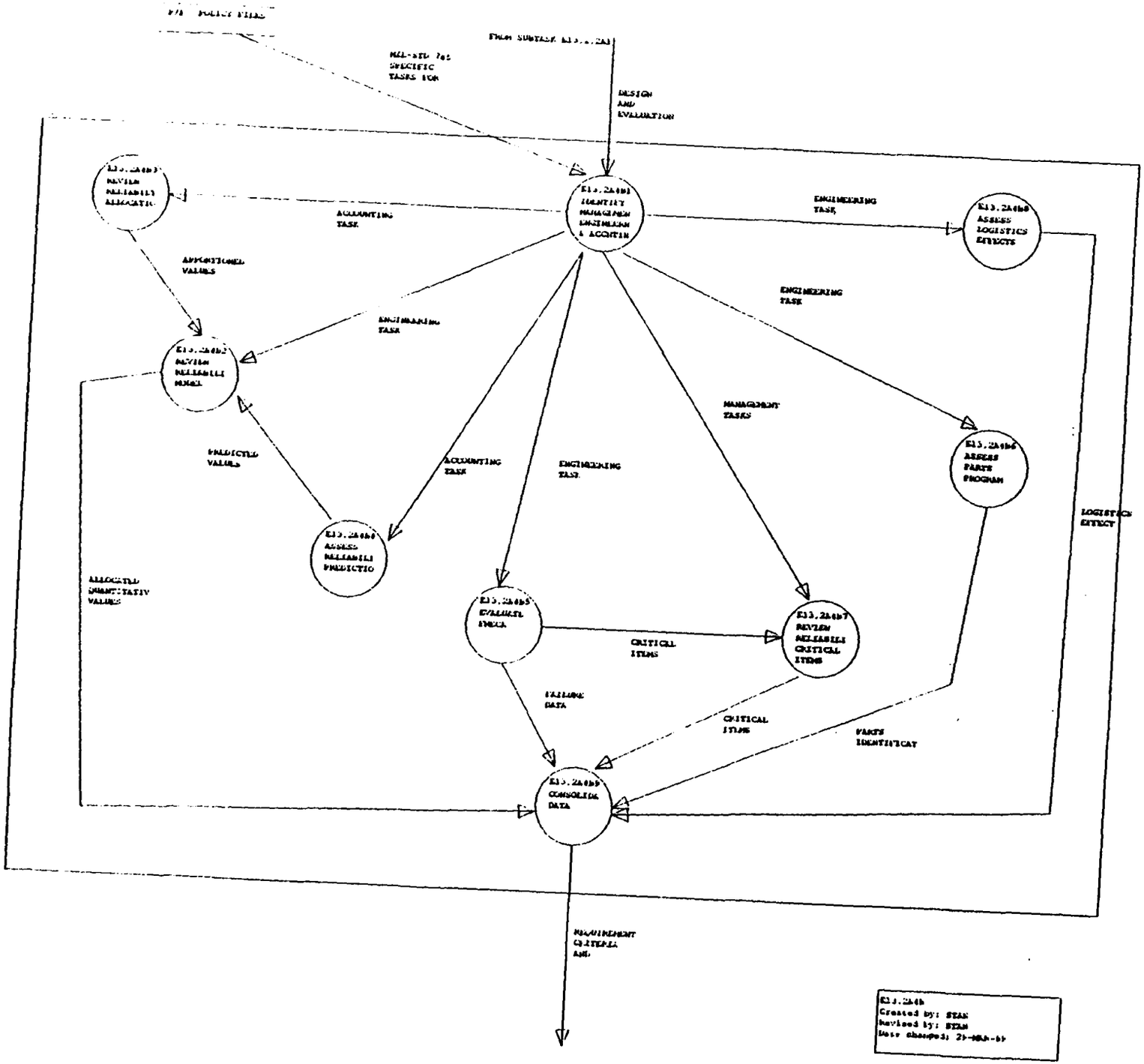

RELIABILITY
REQUIREMENT
MIL-STD 785
SPECIFIC
TASKS SUB
E13.2A1
REVIEW
RELIABILT
PROGRAM
TASK
GENERAL
REQUIREMENT
SURVEILLANC
AND CONTROL
TASKS
TESTIN
AND
EVALUATION
QUALIFICATN
AND
VERIFICATIO
E13.2A3
ASSESS
PLANS
AND
CONTROLS
E13.2A4
ASSESS
ALLOC
ANAL &
APPLICATI
E13.2A2
ASSESS
LOGISTICS
REQUIREMN
E13.2A5
ASSESS
TESTING
AND
ACCEPTANC
PLANS
REVIEWS
AND
REQUIREMENT
CRITERIA
AND
PROCEDURES
ACTIONS
AND
LOGISTICS
REQUIREMENT
E13.2A6
IDENTIFY
LOGISTIC
SUPPORT
RELIABILI
RELIABILITY
QUALITATIVE
RELIABILITY
QUANTITATIV

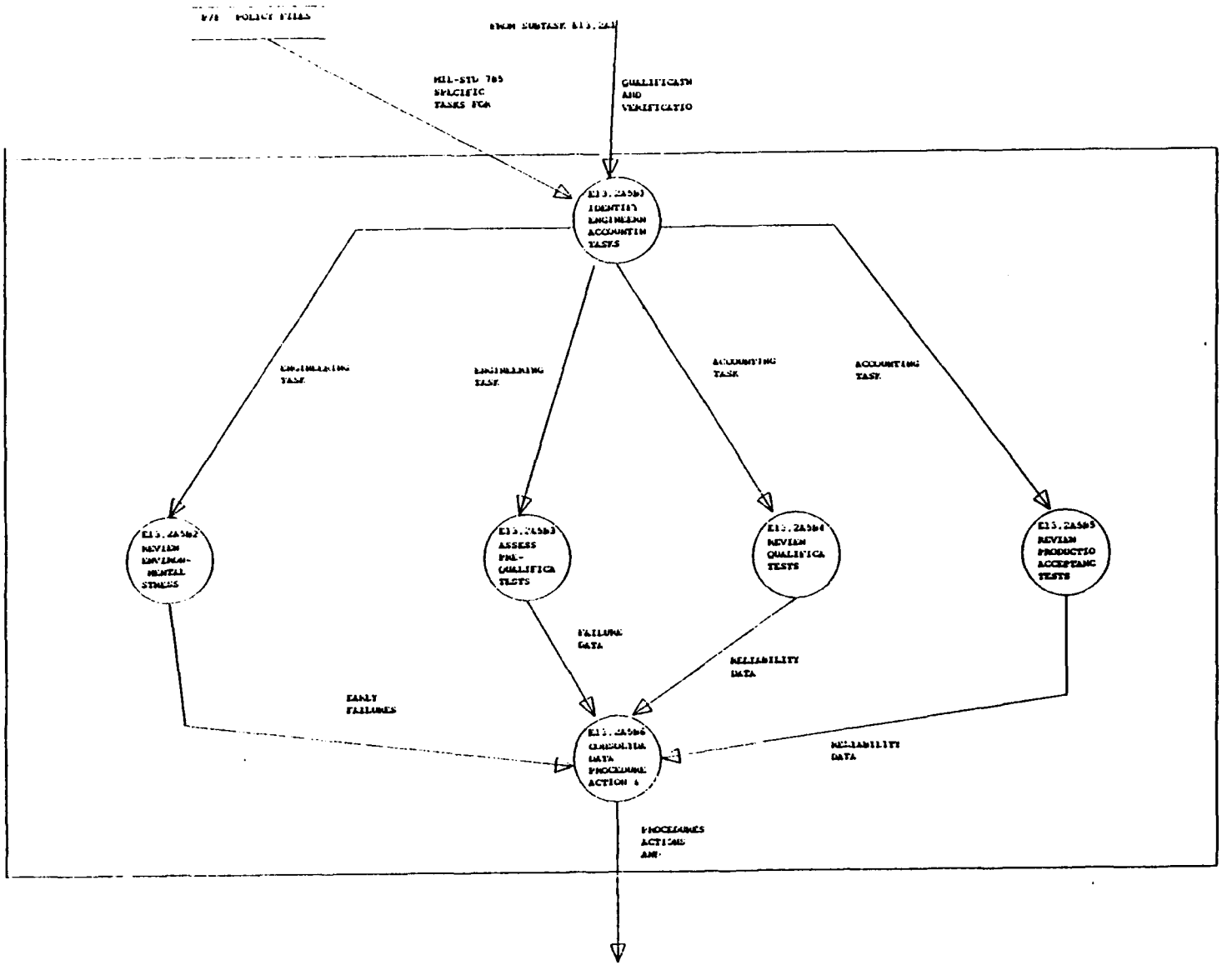
A-2

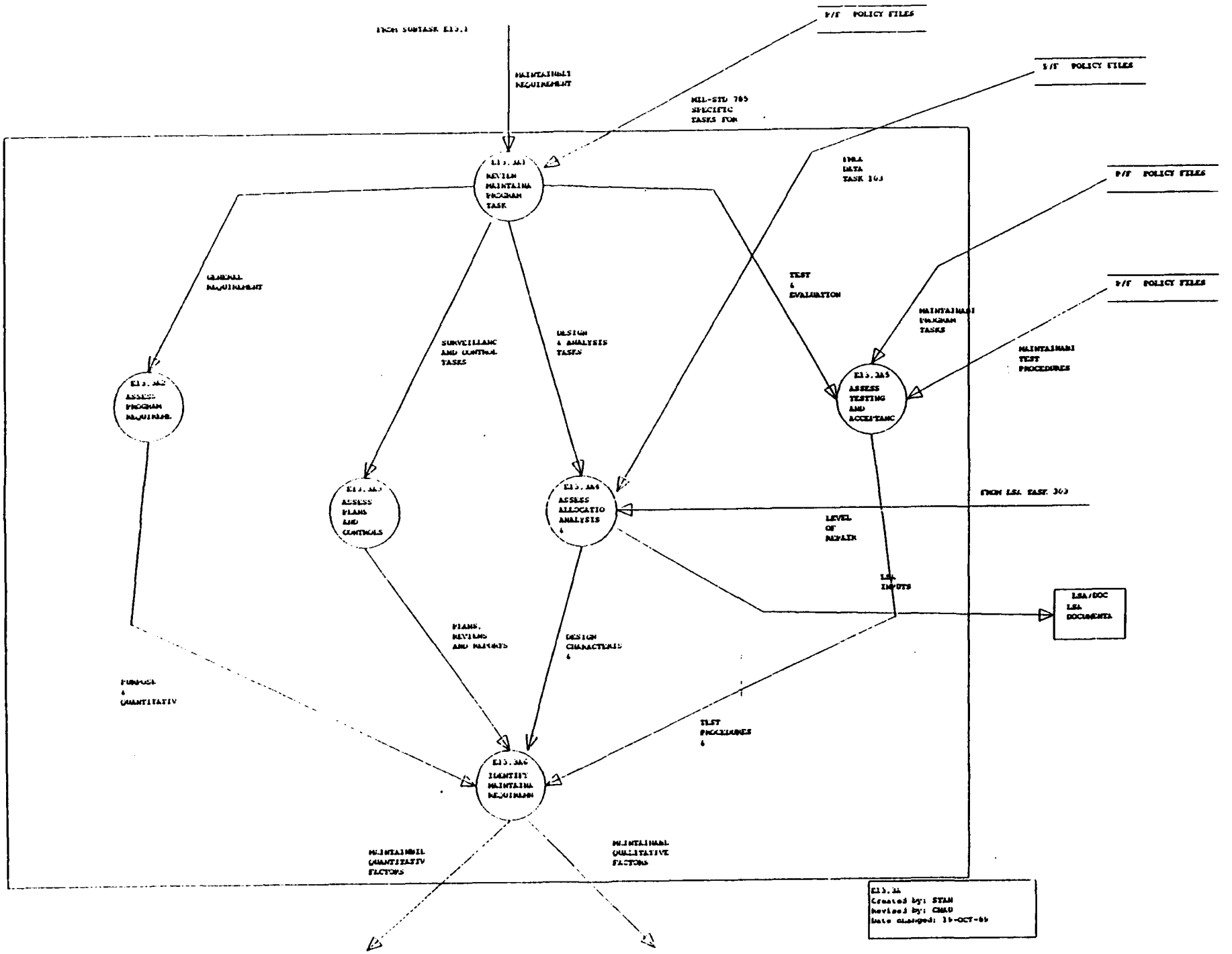

FROM SUBTASK E13.2A3
OVERALL REQUIREMENT
E13.2A3b1 IDENTIFY LOGISTICS RELATED REQUIRE-
RELIABILITY REQUIREMENT
RELIABILITY REQUIREMENT
RELIABILITY REQUIREMENT
E13.2A3b2 ASSESS OPERATIONAL RELIABILITY PARAMETERS
E13.2A3b3 ASSESS MAINTE-NANCE DEMAND
E13.2A3b4 ASSESS LOGISTIC SUPPORT DEMAND
LOGISTICS RELIABILITY PARAMETERS
LOGISTICS RELIABILITY PARAMETERS
LOGISTICS RELIABILITY PARAMETERS
E13.2A3b5 COMPILE LOGISTICS PARAMETER
LOGISTICS REQUIREMENT
TO SUBTASK E13.2.2A4
E13.2A3b
Created by: STAN
Revised by: STAN
Date changed: 27-MAR-86

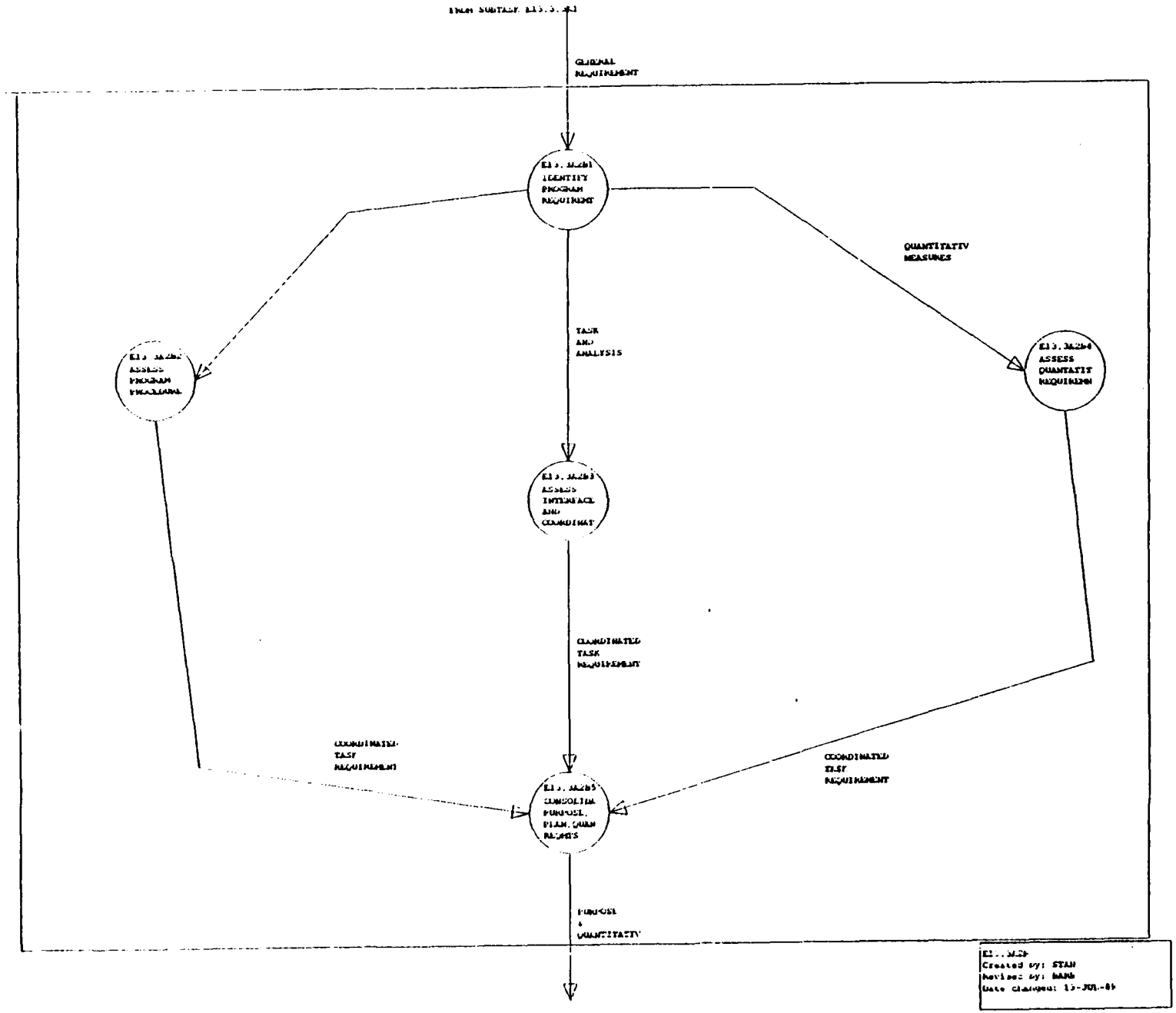


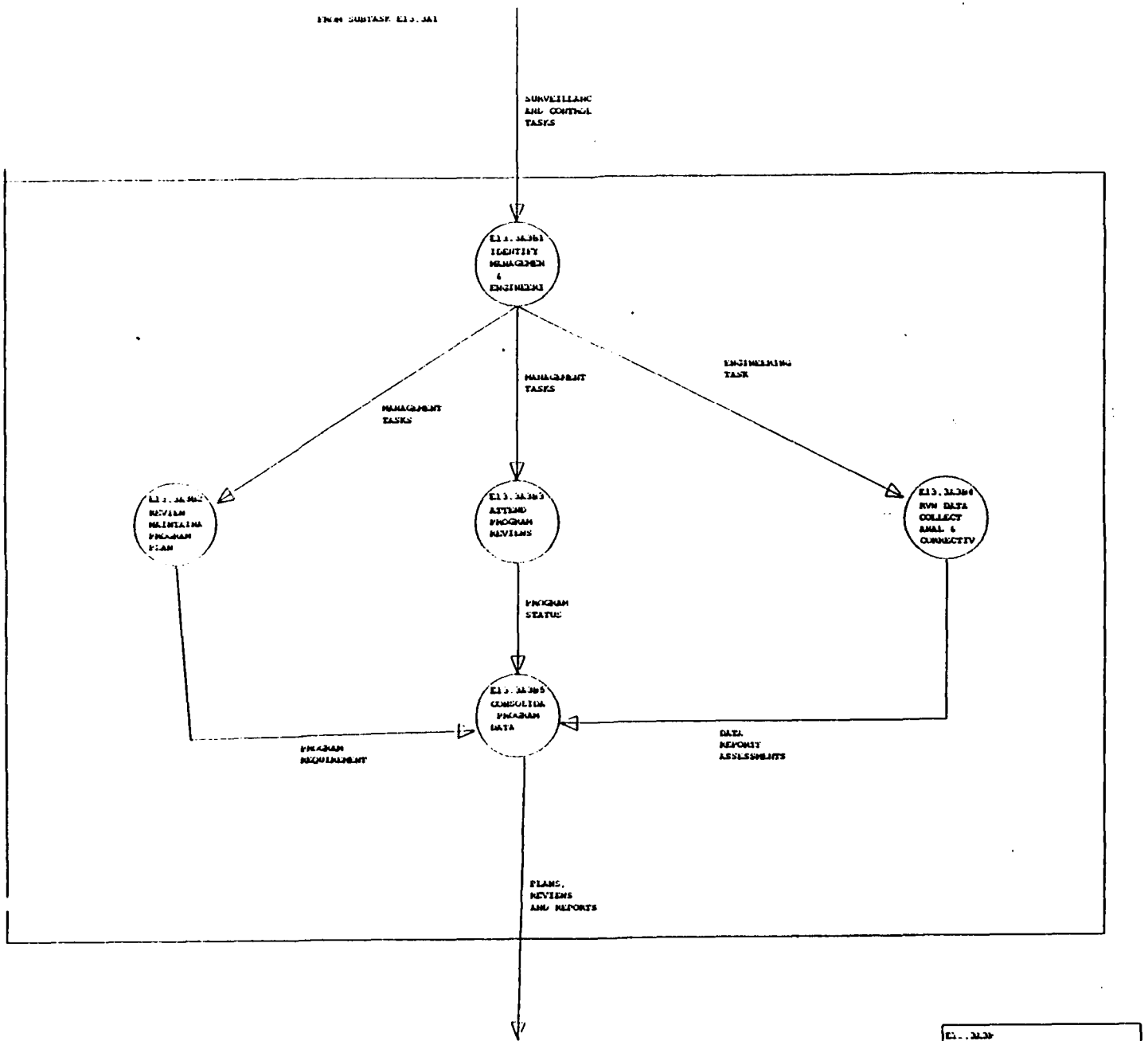
E13.2A.3A
Created by: STAN
Revised by: CMAU
Date changed: 14-SEP-89

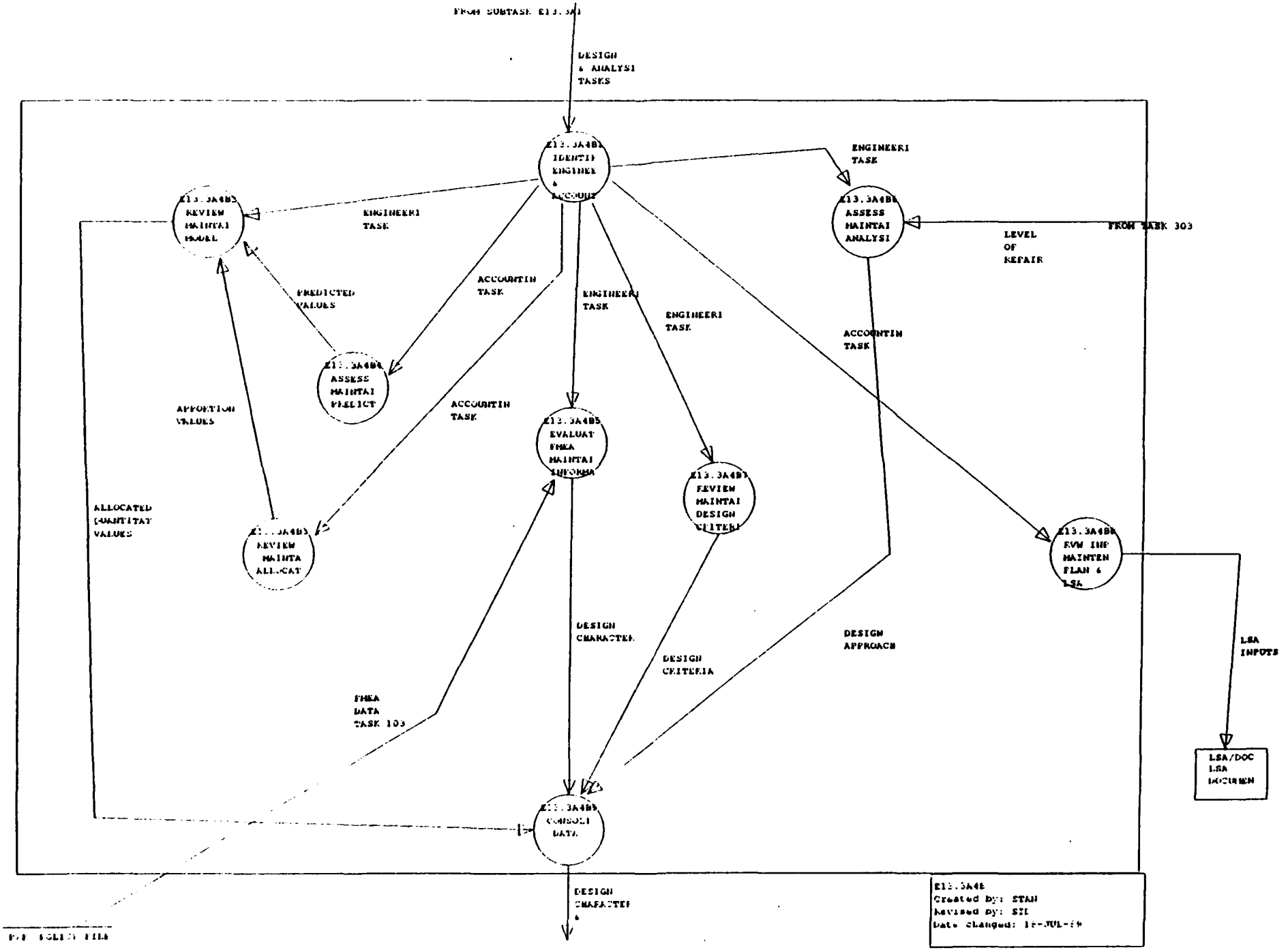

DESIGN AND EVALUATION
ACCOUNTING TASK
ENGINEERING TASK
MANAGEMENT TASKS
LOGISTICS EFFECT
CRITICAL ITEMS
PARTS IDENTIFICAT
REQUIREMENT CRITERIA AND
E13.2A4b
Created by: STAN
Revised by: STAN

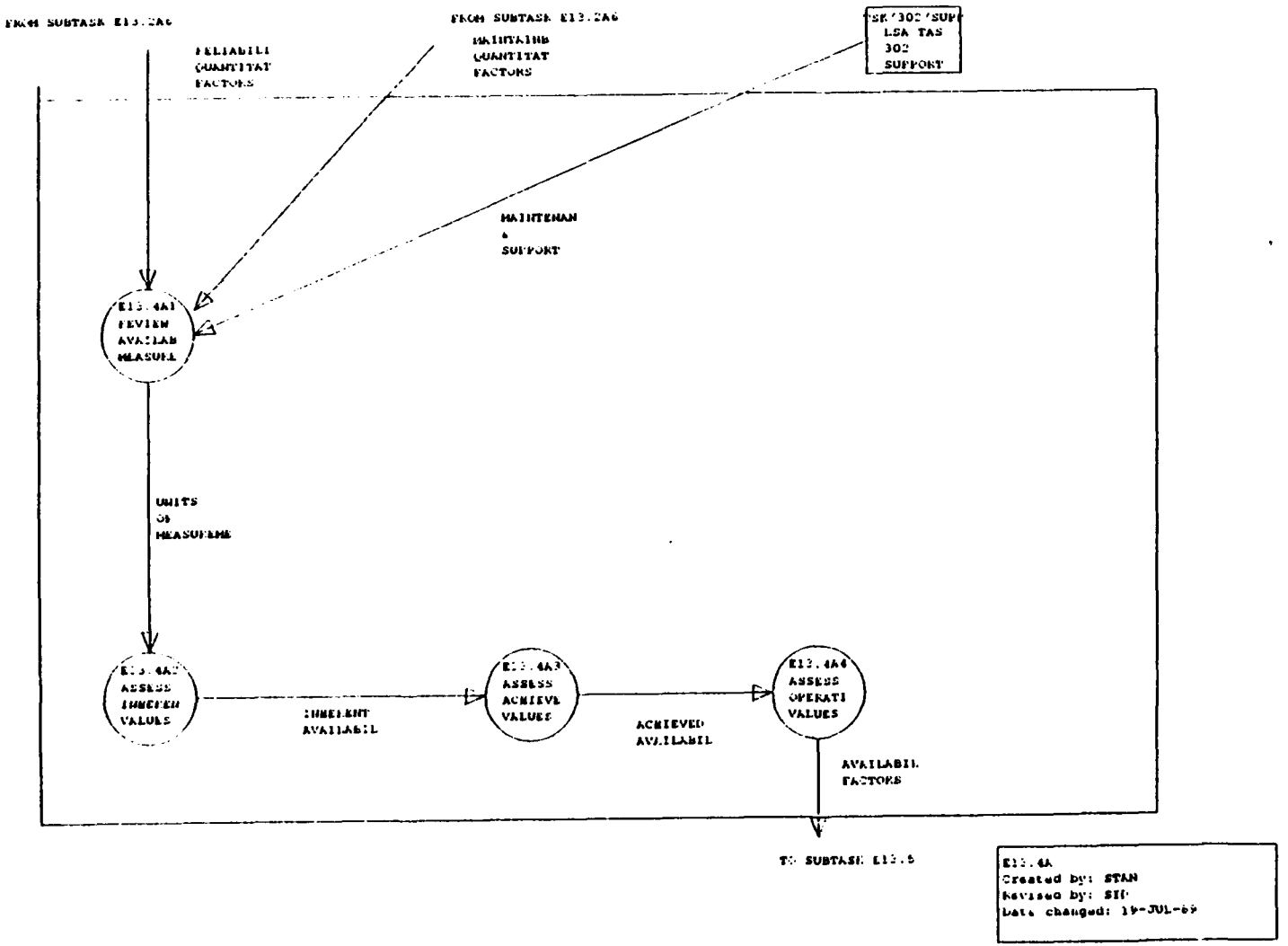

MIL-STD 785
SPECIFIC
TASKS FOR
QUALIFICATN
AND
VERIFICATIO
ACCOUNTING
TASK
ACCOUNTING
TASK
FAILURE
DATA
RELIABILITY
DATA
EARLY
FAILURES
RELIABILITY
DATA


FROM SUBTASK E13.1
MAINTAINABILITY REQUIREMENT
MIL-STD 785 SPECIFIC TASKS FOR
E13.3A1 REVIEW MAINTAINA PROGRAM TASK
E13.3A2 ASSESS PROGRAM REQUIREM.
E13.3A3 ASSESS PLANS AND CONTROLS
E13.3A4 ASSESS ALLOCATIO ANALYSIS &
E13.3A5 ASSESS TESTING AND ACCEPTANC
E13.3A6 IDENTIFY MAINTAINA REQUIREM
GENERAL REQUIREMENT
SURVEILLANC AND CONTROL TASKS
DESIGN & ANALYSIS TASKS
TEST & EVALUATION
MAINTAINABI PROGRAM TASKS
MAINTAINABI TEST PROCEDURES
LSA DATA TASK 303
FROM LSA TASK 303
LEVEL OF REPAIR
LSA INPUTS
LSA/SOC LSA DOCUMENTA
PLANS, REVIEWS AND REPORTS
DESIGN CHARACTERIS &
TEST PROCEDURES &
MAINTAINABIL QUANTITATIV FACTORS
MAINTAINABL QUALITATIVE FACTORS
E13.3A Created by: STAN Revised by: CMAN Date changed: 15-OCT-86


GLOBAL
REQUIREMENT
QUANTITATIV
MEASURES
TASK
AND
ANALYSIS
COORDINATED
TASK
REQUIREMENT
COORDINATED
TASK
REQUIREMENT
COORDINATED
TEST
REQUIREMENT
PURPOSE
&
QUANTITATIV
Created by: STAN
Revised by: BARB


SURVEILLANC
AND CONTROL
TASKS
MANAGEMENT
TASKS
MANAGEMENT
TASKS
ENGINEERING
TASK
PROGRAM
STATUS
PROGRAM
REQUIREMENT
DATA
REPORST
ASSESSMENTS
PLANS,
REVIEWS
AND REPORTS


DESIGN
& ANALYSI
TASKS
ENGINEERI
TASK
ENGINEERI
TASK
FROM TASK 303
LEVEL
OF
REPAIR
PREDICTED
VALUES
ACCOUNTIN
TASK
ENGINEERI
TASK
ENGINEERI
TASK
ACCOUNTIN
TASK
APPORTION
VALUES
ACCOUNTIN
TASK
ALLOCATED
QUANTITAT
VALUES
DESIGN
CHARACTER
DESIGN
CRITERIA
DESIGN
APPROACH
FMEA
DATA
TASK 103
LSA
INPUTS
LSA/DOC
LSA
DOCUMEN
DESIGN
CHARACTER
E13.3A4B
Created by: STAN
Revised by: SZI
Date changed: 1?-JUL-??


FROM SUBTASK E13.2A6
RELIABILI
QUANTITAT
FACTORS
FROM SUBTASK E13.2A6
MAINTAINB
QUANTITAT
FACTORS
LSA TAS
302
SUPPORT
MAINTENAN
&
SUPPORT
E13.4A1
REVIEW
AVAILAB
MEASURE
UNITS
OF
MEASUREME
E13.4A3
ASSESS
ACHIEVE
VALUES
ACHIEVED
AVAILABIL
E13.4A4
ASSESS
OPERATI
VALUES
AVAILABIL
FACTORS
TO SUBTASK E13.5
E13.4A
Created by: STAN
Revised by: SIP
Date changed: 19-JUL-89

APPENDIX B

ILS ELEMENT E13
ASSESSMENT OF RELIABILITY, AVAILABILITY, MAINTAINABILITY AND DURABILITY

PROCESS E13.1 - Assess Ram Programs

PURPOSE:

Logistics related assessment of RAM programs is required to ensure that the new system/equipment is being designed and developed for economical operation and maintenance within the scope of logistic concepts and policies.

E13.1-1 Are RAM parameters stated as specified values for contracting purposes and used as design requirements?

- o Yes
  - Ensure that RAM specified values are derived from operational RAM requirement documents.
  - Ensure that the specified values are used as design requirements, for the system level down to the lowest work breakdown structure level, to control RAM characteristics of repair part procurement and reconditioned material requirements.
- o No
  - If Quantitative RAM requirements are not appropriate for the item, they will not be stated in requirement documents and a brief statement to this effect, with rationale, will be included in the RAM rationale Annex.

E13.1-2 Is MIL-STD-721, "Definitions of terms for reliability and maintainability" utilized as a common base for precise definitions in specifications?

- o Yes
  - What is the issue of MIL-STD-721 is in effect?
- o No
  - How are RAM criteria defined to assure correct interpretations?

E13.1-3 Did the material developer assist the combat developer in establishing realistic RAM requirements?

- o Yes
- o No
  - Explain Impact

E13.1-4 Are operational RAM requirements and allocated RAM parameters compatible with maintenance concepts, parts provisioning and allocation of maintenance resources?

- o Yes
- o No
  - Explain Impact

E13.1-5 Are operational RAM characteristics compatible with quantitative and qualitative personnel resources?

- o Yes
- o No
  - Explain Impact

PROCESS E13.2: Assess Reliability Program

STATEMENT OF PURPOSE:

Since reliability is directly related to the demand for maintenance and logistic support, assessment of the reliability program must interface with logistic support planning and execution.

E-13.2-1 Are separate reliability requirements established for each system reliability parameter (mission-related and logistic-related) and is there a basic reliability requirement for each major subsystem?

- o Yes
  - What plans have been made to utilize reliability program outputs for logistic support planning and execution?
- o No
  - What will be the impact on demand for maintenance and logistic support?

E13.2-2 Are four system reliability parameters established and translated into basic reliability requirements for subsystems, equipments, components, and parts?

- o Yes
  - Ensure that parameters address mission reliability, operational readiness, demand for maintenance, and demand for logistic support.
- o No
  - Why not?

E13.2-3 Does the reliability program support economical achievement to reduce the demand for manpower and logistic support?

- o Yes
- o No
  - Explain why not applicable.

PROCESS E13.2A1 Review reliability Program Task Selection

STATEMENT OF PURPOSE:

The review of tasks selected for the reliability program (MIL-STD-785) must include Logistics Requirements and the selection must be tailored to the type and phase of the acquisition program as well as funding constraints.

E13.2A1-1 Based on a review of tasks selected for the reliability program, is there sufficient requirements specified to include logistics as well as surveillance and control of the program, with design and evaluation tasks, and tasks for qualification and verification?

- o Yes
  - Review the rationale for tasks selected to ensure adequate tailoring of task selection based on acquisition program phase and type.
- o No
  - Explain the potential impact and "get well" plan.

E13.2A1-2 Is the anticipated outputs from the reliability program sufficient and timely to satisfy all logistic support activities involved in all phases of the material acquisition?

- o Yes
- o No
  - When and how will this data be provided?

E13.2A1-3 Has the timing and depth required for each reliability program task been determined as well as action to be taken based on task outcome?

- o Yes
- o No
  - What steps can be taken to satisfy, coordinate, and accomplish these requirements?

E13.2A1-4 When applicable for implementation, are other Army Regulation (e.g., AR 702-3, RAM, AR 71-9; Material Objectives and Requirements) or Statement Of Work requirements included to define reliability program task requirements?

- o Yes
- o No
  - How will requirements be implemented?

PROCESS E13.2A2 Assess Logistics Requirement

STATEMENT OF PURPOSE:

Assessment of logistics related reliability requirements relate to operational readiness and the demand for maintenance and spare or repair parts from the supply system.

E13.2A2-1 Are the Logistics related reliability parameters established as operational to incorporate degradation from operation, maintenance, and repair in the operational environment?

- o Yes
- o No
  - What provisions are established to transform hardware reliability to operational requirements?

E13.2A2-2 Are the logistics related reliability requirements determined using the operational mode summary and mission profile?

- o Yes - Does acceptable failure definition & scoring criteria exist?
- o No
  - Why not?

E13.2A2-3 Are logistics related reliability parameters measured in maintenance manpower cost and logistic support cost?

- o Yes
- o No
  - Explain alternative units of measurement.

PROCESS E13.2A2B1 Identify Logistics Related Requirements

STATEMENT OF PURPOSE:

Identification of quantitative logistics related reliability requirements that address readiness, maintenance actions, and the demand for parts and maintenance resources.

E13.2A2B1-1 Are there quantitative reliability parameters specified/stated for system readiness, types of maintenance actions, support costs or quantities of parts, based on the demand for maintenance?

- o Yes
- o No
  - Identify logistics related reliability parameters which are not provided.

PROCESS E13.2.A2B2 Assess Operational Readiness Parameters

STATEMENT OF PURPOSE:

The assessment of the reliability parameter related to operational readiness is the meantime/distance/rounds fired between a downing event/or failure.

E13.2A2B2-1 Is the Mean Time Between Operational Mission Failure (MTBOMF) stated/specified for repairable systems as a basic measure of reliability?

- o Yes
  - Ensure that the mean use duration is compatible with the system/equipment operational mode(i.e. operating hours, cycles, distance traveled, rounds fired).
- o No
  - Explain why this basic reliability parameter is not applicable.
  - Provide schedule for obtaining or providing operational readiness parameters.

E13.2A2B2-2 Is the Reliability Parameter for Operational Readiness established for both Peacetime and Wartime?

- o Yes
  - What are Peacetime and Wartime conditions?
- o No
  - Explain the impact from consideration of only one set of parameters.

E13.2A2B2-3 Are the Reliability Parameters stated as firm requirements in the requirements document for entry into the Full Scale Development or Equivalent Phase?

- o Yes
  - Are the firm requirements supported by a final RAM Rational Report?
- o No
  - Why not?

PROCESS E13.2A2B3 Assess Maintenance Demand Parameters

STATEMENT OF PURPOSE:

Assessment of maintenance demand reliability parameters is the meantime/use duration between maintenance actions.

E13.2A2B3-1 Are maintenance demand reliability parameters stated/specified as the meantime or use duration between essential non-deferable maintenance support or between unscheduled maintenance actions?

- o Yes
  - Explain the correlation with MTBF.
- o No
  - What is the potential impact without this parameter?

E13.2A2B3-2 Is the demand for maintenance manpower stated as a system reliability parameter as mean-time-between-maintenance-actions (MTBMA)?

- o Yes
  - Do maintenance actions include both preventive and corrective?
- o No
  - What is the potential impact without this parameter?

E13.2A2B3-3 Since crew maintenance actions completed within a specified time and maintenance deferrable to the next scheduled maintenance period are not considered maintenance demand reliability parameters. Are these maintenance actions separately recorded and being analyzed for acceptable logistics burden?

- o Yes
- o No
  - Why not?

PROCESS E13.2A2B4 Assess Logistic Support Demand Parameters

STATEMENT OF PURPOSE:

Assessment of logistic support demand reliability parameters is the meantime or use duration between demands on the supply system and between removal of parts, components, or assemblies.

E13.2A2B4-1 Are logistic support demand reliability parameters stated/specified as meantime or use duration between demands on the supply system (parts replacement) or between removals of specific components or assemblies?

- o Yes
  - Explain correlation with maintenance demand parameters.
- o No
  - What is the potential impact without this parameter?

E13.2A2B4-2 Is Mean-Time-Between-Demands (MTBD) utilized as a measure of System Reliability related to the demand for Logistic Support?

- o Yes
  - Are item demands on the supply system based on Line Replacement Unit (LRU) and Shop Replacement Unit (SRU)?
- o No
  - What is Alternative Parameters Specified?

E13.2A2B4-3 Is Mean-Time-Between-Removals (MTBR) utilized as a system Reliability Parameter related to Logistic Support?

- o Yes
  - Ensure that removals performed to facilitate other maintenance is excluded.
- o No
  - What is Alternative Parameters Specified?

PROCESS E13.2A2B5 Consolidate Logistics Parameters

STATEMENT OF PURPOSE:

Consolidation of Logistics Reliability Parameters is accomplished from results of assessment of operational readiness, maintenance demand, and logistic support demand.

E13.2A2B5-1 Based on the consolidation of Logistics Related Reliability Parameters, are the system, subsystems, assemblies, subassemblies, components, and parts adequately specified to control designs?

- o Yes
- o No
  - Explain potential impact from absence of parameters and plans to institute alternative controls or requirements.

PROCESS E13.2A3 Assess Plans & Controls

STATEMENT OF PURPOSE:

Assessment of the plans and controls for a reliability program must include identification of selected management and engineering tasks.

E13.2A3-1 Are management and engineering tasks (as stated in MIL-STD-785) specified in the statement of work to adequately address planning and controls for the reliability program?

- o Yes
  - Ensure that selected tasks have been tailored to satisfy the acquisition program and applicable phase.
- o No

E13.2A3-2 Are time and effort estimates available to assist in selecting tasks which can be accomplished within schedule and funding constraints?

- o Yes
  - What is the tasks prioritization?
- o No
  - What steps can be taken to select tasks to fit the needs?

PROCESS E13.2A3B1 Identify Management & Engineer Tasks

STATEMENT OF PURPOSE:

Identification of selected management and engineering tasks is required for surveillance and control of the reliability program.

E13.2A3B1-1 For surveillance and control of the reliability program, are tasks specified to develop a program plan, conduct program reviews, and establish a closed-loop failure reporting system?

- o Yes
- o No
  - Explain alternative procedure to accomplish reliability program surveillance and control.

PROCESS 13.2A3B2 Review Reliability Program Plan

STATEMENT OF PURPOSE:

Review of the reliability program plan assures task identification, coordination, and description together with schedules, milestones, and responsibilities for their accomplishment.

E13.2A3B2-1 Does the reliability program plan identify and describe required management, accounting, and engineering tasks?

- o Yes
  - Also review schedules, milestones, and responsibilities.
  - Ensure that procedures are established to integrate reliability data into logistic support analysis documentation.
- o No
  - How are reliability program requirements addressed/specified in lieu of the program plan?

E13.2A3B2-2 Is the reliability program plan used to evaluate the contractor's procedures for implementing and controlling reliability tasks?

- o Yes
  - Ensure that requirements are levied by the prime contractor on the subcontractors
- o No
  - Explain how contractor's procedures are evaluated.

E13.2A3B2-3 Are requirements for the reliability program plan in accordance with task 101 of MIL-STD-785?

- o Yes
  - Was the task description tailored to fit the specific acquisition program and phase of development?
- o No
  - How will these requirements be specified?

PROCESS E13.2A3B3 Attend Program Reviews

STATEMENT OF PURPOSE:

Attendance and participation in reliability program and design reviews is required to evaluate progress and acceptability of analysis and actions with their effects and impact on logistic support.

E13.2A3B3-1 During attendance and participation in reliability program and design reviews, are the following evaluations accomplished?

- o Progress, consistency, technical adequacy, and acceptability of design reliability analysis, failure analysis, and corrective actions.
- o Parts program progress
- o Failure mode effects and criticality analysis interim and follow-on results.

- o Yes
  - What is the effect and impact on Logistic Support for the system/equipment?
- o No
  - Explain alternative procedures for reliability program reviews/evaluations.

E13.2A3B3-2 Are all pertinent aspects of the reliability program identified and discussed at each of the following reviews?

- o Preliminary design
- o Critical design
- o Test readiness
- o Program status

o Yes
  - Are results recorded and open items followed-up?

o No
  - Why not?

E13.2A3B3-3 Is task 103 of MIL-STD-785 specified to address reliability program reviews?

o Yes
  - Ensure that reviews are applicable to the prime and equipment subcontractors.

o No
  - Explain alternate methods used to establish reliability program reviews.

PROCESS E13.2A3B4 Review Failure Rptg Anal & Corr Actions

STATEMENT OF PURPOSE:

The review of the failure reporting, analysis, and corrective actions (FRACAS) ensures that failures are recorded, analyzed and corrected to obtain reliability growth.

E13.2A3B4-1 Does the Failure Reporting Analysis and Corrective Actions system (FRACAS) provide a closed loop failure reporting system with documentation of corrective actions?

o Yes
  - Ensure that data from the FRACAS is utilized as logistic support analysis documentation.

o No
  - Explain the alternate procedures utilized for failure reporting, analysis, and correcting.

E13.2A3B4-2 Is the level of assembly identified for failure reporting?

o Yes

o No
  - What are the procedures for failure reporting, analysis, and corrective action?

E13.2A3B4-3 Is Task 104 of MIL-STD-785 specified for early acquisition program phases to identify failure caused and implement effective corrective action?

o Yes

o No

- What steps can be taken to assure reliability growth?

PROCESS E13.2A3B5 Consolidate Plans, Reviews Reports

STATEMENT OF PURPOSE:

Consolidation of results from reviews of reliability program plans, reviews, and the FRACAS, is utilized to identify logistic support reliability requirements.

E13.2A3B5-1 Are the results from the following reviews suitable as source data for identifying logistic support parameters?

- o Reliability Program Plan
- o Program and Design Reviews
- o Failure Reporting, Analysis and Corrective Action System (FRACAS)

o Yes

o No

- Explain type and source of alternate or additional identification data.

PROCESS E13.2A4 Assess Allocations Analysis & Applications

STATEMENT OF PURPOSE:

Assessment of reliability program tasks that accomplish allocations of quantitative parameters together with analysis and parts application cover the design and evaluation portion.

E13.2A4-1 Does the reliability program specify design and evaluation tasks requiring allocation of reliability parameters, failure analysis, and parts application?

o Yes

- Ensure that the depth of detail is compatible with the acquisition program phase and the system/equipment design progress.

o No

- Explain alternate procedures and/or schedule to accomplish reliability design and evaluations.

PROCESS E13.2A4B1 Identify Management Engr & Acctg Tasks

STATEMENT OF PURPOSE:

For the design and evaluation portion of the reliability program, management, engineering, and accounting tasks must be identified.

E13.2A4B1-1 Are management, engineering, and accounting tasks specified for the reliability program to accomplish the following?

- o Develop reliability models
- o Predict and apportion reliability values
- o Analyze parts selection
- o Determine effects on logistic support.

o Yes

- What reliability program requisite tasks are specified to be accomplished.
- Ensure that logistic support coordinated reporting requirements are specified.

o No

- Explain rationale for omitting any reliability design and/or evaluation task.

PROCESS E13.2A4B2 Review Reliability Model

STATEMENT OF PURPOSE:

Review of the reliability model is to confirm the mathematical expression of system/equipment functions for numerical apportionments and estimates.

E13.2A4B2-1 Does the reliability model correlate with the system/equipment functions to permit numerical apportionments and estimates?

o Yes

o No

- Explain why reliability modeling is not involved.

E13.2A4B2-2 Is task 201 of MIL-STD-785 specified for development and maintenance of reliability mathematical models?

- o Yes
  - List the modeling techniques specified for use.
- o No
  - Identify alternative procedures utilized for modeling.

E13.2A4B2-3 Is a reliability model developed whenever a failure tolerant design is being analyzed?

- o Yes
  - Is the rationale behind the model documented?
- o No
  - What is Alternate Procedure for evaluating complex series - Parallel equipment arrangements if present in the weapon system?

PROCESS E13.2A4B3 Review Reliability Allocation

STATEMENT OF PURPOSE:

Reliability parameters must be allocated or apportioned from system quantitative requirements to lower levels to establish design requirements.

E13.2A4B3-1 Are reliability design requirements established for assemblies, components and parts based on allocations from the system quantitative parameters?

- o Yes
- o No
  - Explain alternative design requirements and the correlation to the overall system.

E13.2A4B3-2 Is task 202 of MIL-STD-785 specified to assure that quantitative system reliability requirements are allocated or apportioned to lower indentive levels?

- o Yes
  - Are allocated reliability values consistent with the reliability model?
- o No
  - Explain how baseline reliability requirements are determined for designers.

E13.2A4B3-3 Are reliability requirements consistent with the allocations imposed on subcontractors and suppliers?

o Yes
  - Ensure inclusion in specifications to subcontractor and suppliers.

o No
  - Why not?

PROCESS E13.2A4B4 Assess Reliability Prediction

STATEMENT OF PURPOSE:

Assessment of predicted basic reliability is required early in a system/equipment development program to determine feasibility with a proposed design.

E13.2A4B4-1 Are predicted basic reliability parameters available for a new system/subsystem equipment to determine if system requirements can be achieved with the proposed design?

o Yes
  - Ensure that predicted values are being updated with actual experience and test data when available.
  - What plans are available to input data to the LSA documentation.

o No
  - Explain procedures utilized in lieu of predicted reliability parameters.

E13.2A4B4-2 Is task 203 of MIL-STD 785 specified to estimate basic and mission reliability?

o Yes
  - Are prediction procedures for types of equipment and parts identified?

o No
  - What are alternative procedures used for reliability predictions?

E13.2A4B4-3 Is a Serial Mode Prediction of Basic Reliability made for every system, subsystem, and equipment?

o Yes
  - Is it used as input for Maintenance and Logistics Support Plans and Life Cycle Cost Estimates?

o No
  - When will Reliability Predictions be accomplished?

PROCESS E13.2A4B5 Evaluate FMECA

STATEMENT OF PURPOSE:

Evaluation of the failure modes, effects and criticality analysis (FMECA) is to ensure that potential design weaknesses have been identified.

E13.2A4B5-1 Has a FMECA been conducted to identify potential design weaknesses which can cause failures and have the cause and effects been determined?

- o Yes
  - What effects have been identified on resultant demand for maintenance and logistic support?
- o No
  - When is a FMECA scheduled and to what indenture level of hardware?

E13.2A4B5-2 Have catastrophic and critical failure possibilities been identified and eliminated or minimized by design changes?

- o Yes
- o No
  - What is rationale for acceptance when not eliminated?

E13.2A4B5-3 Does the FMECA identify design features needed to detect and isolate failures and/or impending failures?

- o Yes
  - Does the system design include these features?
- o No

E13.2A4B5-4 Does the results of the FMECA identify design requirements to circumvent or mitigate failure effects?

- o Yes
  - Have these requirements been incorporated into the system design?
- o No

E13.2A4B5-5 Is task 204 of MIL-STD-785 specified to conduct the FMECA?

- o Yes
  - Is the procedure identification in accordance with MIL-STD-1629?
- o No
  - Describe alternate procedures?

PROCESS E13.2A4B6 Assess Parts Program

STATEMENT OF PURPOSE:

Assessment of the standard parts program minimize parts proliferation and supports inherent equipment reliability.

E13.2A4B6-1 Is a parts control and application program specified and being addressed to select and use standard parts?

- o Yes
- o No
  - What is schedule to analyze parts selection for possible standard substitution?

E13.2A4B6-2 Is task 207 of MIL-STD-785 specified to control the selection and use of standard and non standard parts?

- o Yes
- o No
  - Why not?

E13.2A4B6-3 Is a parts control program established in accordance with MIL-STD-965 procedures?

- o Yes
- o No
  - Explain alternate parts control utilized?

PROCESS E13.2A4B7 Review Reliability Critical Items

STATEMENT OF PURPOSE:

The failure of reliability critical items can significantly affect system availability and logistic support cost. They are identified for additional analysis and redesign to reduce the reliability risk.

E13.2A4B7-1 Are reliability critical items required to be identified for further analysis, testing, and other techniques to reduce the reliability risk?

- o Yes
  - Ensure that the list is retained and updated.
- o No
  - Explain the alternate arrangements to identify and control reliability critical items.

E13.2A4B7-2 Is task 208 of MIL-STD-785 specified to identify and control reliability critical items?

- o Yes
  - Is reliability critical item criteria identified?
- o No

E13.2A4B7-3 Are High-Value items considered to be Reliability Critical due to Life Cycle Cost?

- o Yes
- o No
  - Why not?

PROCESS E13.2A4B8 Assess Logistics Effects

STATEMENT OF PURPOSE:

Assessment of logistics effects on hardware reliability includes deterioration from storage, handling, packaging, transportation, maintenance, and functional testing.

E13.2A4B8-1 Are there analysis and tests scheduled to determine deterioration of hardware reliability due to logistics action including storage, handling, packaging, transportation, maintenance, and repeated function testing?

- o Yes
  - Identify resulting special procedures for maintenance and/or restoration.
- o No
  - Explain procedures established to assess and evaluate logistics effects on hardware reliability.

E13.2A4B8-2 Is task 209 of MIL-STD-785 specified to determine the effects of storage, handling, packaging, transportation, maintenance, and repeated exposure to environmental testing on hardware reliability?

- o Yes
- o No

E13.2A4B8-3 Are Procedures identified for Stockpile Reliability Evaluation as a result of Storage Effects Determination?

- o Yes
  - Are Environmental Conditions recorded?
- o No
  - What are Alternate Procedures to determine Deterioration?

PROCESS E13.2A4B9 Consolidate Data

STATEMENT OF PURPOSE:

Consolidation of Design and Evaluation results from the reliability program tasks are provided as input for identification of logistics support reliability requirements.

E13.2A4B9-1 Based on the consolidation of results from design and evaluation tasks within the reliability program, are reliability requirements, criteria, and effects adequately identified?

- o Yes
  - Provide schedules to update and/or repeat design and evaluation tasks to lower hardware indenture levels.
- o No
  - Explain impact from absence of data and plans for alternative accomplishment.

PROCESS E13.2A5 Assess Testing and Acceptance

STATEMENT OF PURPOSE:

Assessment of testing and acceptance tasks for a reliability program is required to accomplish three primary purposes - to disclose deficiencies in design, material and workmanship; to obtain measured reliability data; and to ensure compliance with reliability requirements.

E13.2A5-1 Are engineering and accounting tasks specified in the Statement of Work to adequately address testing and acceptance tasks for the reliability program?

- o Yes - Ensure that the selected tasks have been tailored to satisfy the acquisition program and its applicable phase.
- o No - Explain how reliability Data will be obtained and evaluated from other scheduled tests.

E13.2A5-2 In order to avoid duplication and ensure an effective and efficient test program, are performance, reliability, and environmental stress testing combined?

- o Yes
  - Ensure that reliability and durability testing are combined.
- o No
  - Why not?

PROCESS E13.2A5B1 Identify Engineering & Accts. Tasks

STATEMENT OF PURPOSE:

Identification of engineering and accounting tasks is required for testing and acceptance within the reliability program.

E13.2A5B1-1 For testing and acceptance within the reliability program, are tasks specified to accomplish reliability engineering tests together with reliability accounting tasks?

- o Yes
  - Ensure that test requirements are incorporated into the approved test and evaluation master plan.
  - Ensure that test procedures are documented for each reliability test.
- o No
  - Explain how reliability data will be obtained and evaluated from other scheduled tests.

E13.2A5B1-2 Does the reliability program emphasize early investment in reliability engineering tests to avoid subsequent costs and schedule delays together with limited reliability accounting tests for management information?

- o Yes
- o No

PROCESS E13.2A5B2 Review Environmental Stress Screening

STATEMENT OF PURPOSE:

Review of requirements for/and results from environmental stress screening tests assures that early failures can identified so equipment redesigned recommendations can be made.

E13.2A5B2-1 Are Environmental Stress Screening (ESS) tests specified to be conducted on specific items to detect early failures?

- o Yes
  - List the items selected for ESS testing.
  - Ensure that separately procured spare or repair parts are included.
- o No
  - Explain alternate procedures and tests scheduled to detect early failures.

E13.2A5B2-2 Is task 301 of MIL-STD-785 specified to establish and implement environment stress screening procedures?

- o Yes
  - Is there a plan prepared for implement in these procedures?
- o No
  - Is there any environmental stress screening test planning included as part of the reliability test plan?

E13.2A5B2-3 Are test conditions and procedures for ESS designed to stimulate failures typical of Early Field Service rather than to provide precise stimulation of the Operational Life Profile?

- o Yes
  - Are test times Minimum and Maximum Plus Failure-Free Internals specified for each test item?
- o No
  - Why not?

PROCESS E13.2A5B3 Assess Pre-qualification Tests

STATEMENT OF PURPOSE:

Assessment of requirements for/and results from pre-qualification tests provide the basis to resolve reliability problems early in the development phase.

E13.2A5B3-1 Is there a requirement specified to accomplish a test-analyze-and-fix as part of the reliability development/growth testing program?

- o Yes
  - Ensure that failures that drive maintenance and logistic support costs are identified and corrected to preclude recurrence
- o No
  - Explain alternate procedures and testing for early reliability testing and growth.

E13.2A5B3-2 Is task 302 of MIL-STD-785 specified to conduct pre-qualification testing?

- o Yes
  - Is corrective action focused on the most frequent failure modes to enhance basic reliability?
  - List the considerations included in the approved test plan.
- o No
  - What alternative procedures are going to be utilized to enhance system reliability?

E13.2A5B3-3 Does the requirement for conducting pre-qualification testing include task 104 of MIL-STD-785 to establish a closed loop failure reporting system?

- o Yes
- o No
  - Why not?

PROCESS E13.2A5B4 Review Qualification Tests

STATEMENT OF PURPOSE:

Review of Reliability Qualification tests plans, procedures, and results assures that reliability requirements have been achieved on items which are representative of approved production configuration.

E13.2A5B4-1 Are Reliability Qualification test scheduled to be conducted on equipment that is representative of the approved production configuration to assure achievement of specified reliability requirements?

- o Yes
  - Ensure that results of the reliability qualification tests are provided as input to logistic support analysis records.
- o No
  - Explain alternative tests on approved production configuration hardware to assure achievement of reliability requirements.

E13.2A5B4-2 Is task 303 of MIL-STD-785 specified to conduct reliability qualification tests?

- o Yes
  - List the contents of the test plan and test procedures.
  - Is the test plan prepared in accordance with MIL-STD-781, MIL-STD-105 or alternative procedures?
- o No
  - Explain alternative tests to confirm achievement of reliability requirements.

E13.2A5B4-3 Is the Reliability Qualification Tests specifically scheduled as preproduction testing for input to a production decision?

- o Yes
- o No
  - Are items exempt from testing qualified by analogy?

PROCESS E13.2A5B5 Review Production Acceptance Tests

STATEMENT OF PURPOSE:

Review of the production reliability acceptance test program assures that hardware reliability is not degraded by production tooling, processes, work flow, etc.

o No

- What corrective action is ongoing the achieve reliability requirements and when will it be completed?
- Explain alternate procedures to utilize reliability testing results for identifying logistic support reliability requirements.

PROCESS E13.2A6 Identify Logistic Support Reliability Requirements

STATEMENT OF PURPOSE:

Identification of logistic support related reliability requirements is comprised of data consolidated from processes which determine logistic requirements, plans, reviews and controls as well as design and testing tasks to determine reliability factors

E13.2A6-1 Have logistic related qualitative and quantitative reliability requirements been identified from participation in the reliability program?

o Yes

- Confirm that data and updates are provided as input from the Logistic Support Analysis Record.

o No

- Explain alternate procedures to satisfy logistic support reliability requirements.

E13.2A6-2 Are logistics related reliability requirements directly related to manpower and support resource costs?

o Yes

- Are they establishing in requirement documents and contractual specifications?

o No

- Why not?

PROCESS E13.3 Assess Maintainability Program

STATEMENT OF PURPOSE:

Assessment of the maintainability program will result in a favorable impact on logistic support elements

E13.2A5B5-1 Are production reliability acceptance tests scheduled and conducted on production equipment to assure that hardware reliability is not degraded by production tooling, processes, work flow, etc?

- o Yes
- o No
  - Explain alternative inspections and/or tests on production hardware to assure that specified reliability requirements are achieved.

E13.2A5B5-2 Is task 304 of MIL-STD-785 specified to conduct production reliability acceptance testing?

- o Yes
  - Identify the procedures used for conducting the tests (MIL-STD-781, MIL-STD-105, or alternative procedures).
- o No
  - Explain alternative tests to ensure reliability of production equipment.

E13.2A5B5-3 Is the sampling frequency of test items for production reliability acceptance tests reduced after a production run is well established?

- o Yes
  - Is tailoring based on cost and schedule efficiency?
- o No
  - What is rationale for complete waiver of test requirement?

PROCESS E13.2A5B6 Consolidate Data Procedures Action & Results

STATEMENT OF PURPOSE:

Consolidation of test data from the reliability program is provided as input for identification of logistic support resource requirements

E13.2A5B6-1 Based on the consolidation of reliability testing data, are the test procedures, actions, and results adequate to verify achievement of system reliability requirements and to estimate logistic support resource requirements?

- o Yes
  - Ensure that results are provided as input to the logistic support analysis record updates.

E13.3-1 Is Mean Time to Repair (MTTR) and Maintenance Ratio (MR) specified for the system level configuration?

o Yes

o No

- List alternate quantitative maintainability requirements specified for the system/equipment.

E13.3-2 Is the thrust of the Maintainability Program applied to item design which reduces time to maintain and repair, which reduces the number and complexity of tasks for each maintenance action, and reduces the need for special skills, and test equipment?

o Yes

o No

- Explain impact on hardware suitability and on logistic support elements.

E13.3-3 Do system equipment maintainability requirements address the following features?

- o Testability
- o Modularity
- o Accessibility
- o Built-in (BIT) and built-in test equipment (BITE).
- o On-system maintenance
- o Off-system maintenance

o Yes

- Ensure that quantitative and qualitative factors are addressed as applicable.

o No

- Explain how maintainability requirements will be identified and satisfied.

PROCESS E13.3A1 Review Maintainability Program Task Selection

STATEMENT OF PURPOSE:

Review of the tasks selected for the maintainability program (MIL-STD-470) must be tailored to fit the system involved, the acquisition phase, and any funding constraints

E13.3A1-1 Based on a review of tasks selected for the maintainability program, is there sufficient requirements specified to include interfacing and coordination, surveillance and control, design and analysis, and test and evaluation?

- o Yes
  - Confirm that rationale for task selection and tailoring is available for review and justification.
- o No
  - Explain how maintainability requirements will be addressed and satisfied.

E13.3A1-2 Is the anticipated outputs from the maintainability program sufficient to satisfy all logistic support activities involved in all phases of the material acquisition?

- o Yes
- o No
  - When and how will this data be provided?

E13.3A1-3 Has the timing and depth required for each maintainability program task been determined as well as action to be taken based on task outcome?

- o Yes
- o No
  - What steps can be taken to satisfy, coordinate, and accomplish these requirements?

E13.3A1-4 When applicable for implementation are other MIL-STD's e.g., MIL-STD-2165 testability or Statement Of Work requirements included to define maintainability task requirements?

- o Yes
- o No
  - How will requirements be implemented?

E13.3A1-5 Have a set of testability analysis tasks been selected from MIL-STD-2165 that correspond to the maintainability program?

PROCESS E13.3A2 Assess Program Requirements

STATEMENT OF PURPOSE:

Assessment of the maintainability program requirements must assure adequate integration with other related programs and processes to avoid duplication of effort and to assure coordination.

E13.3A2-1 Does the maintainability program specify requirements for integration with the design process, the reliability program, and with the logistic support analysis process?

- o Yes
  - List the similar and related reliability program tasks which are being coordinated and combined.
- o No
  - Explain alternate procedures to accomplish maintainability program integration.

E13.3A2-2 Is the failure definition and scoring criteria (FD/SC) developed and updated and consistent with the Operational Mode Summary /Mission Profile (OMS/MP) for assessing quantitative maintainability requirements?

- o Yes
- o No
  - Why not?

E13.3A2-3 Are maintainability program needs being adequately considered for all levels of maintenance?

- o Yes
- o No
  - Explain what level is deficient and steps being taken to correct.

PROCESS E13.3A2B1 Identify Program Requirements

STATEMENT OF PURPOSE:

Identification of general maintainability program requirements includes procedures that must be followed. tasks and analysis to be accomplished, and assessment of quantitative requirements

E13.3A2B1-1 Does the identification of general requirements for the maintainability program include procedures, interfaces and coordination and assessment of quantitative maintainability requirements?

- o Yes
  - Ensure requirements are included in applicable contract documents.
- o No
  - Explain alternate methods to be or being utilized to identify maintainability program general requirements.

E13.3A2B1-2 Are the maintainability quantitative measures consistent with system readiness parameters, mission requirements, support cost objectives, and maintenance manpower constraints?

- o Yes
- o No
  - List any exceptions or inconsistencies for established maintainability requirements.

PROCESS E13.3A2B2 Assess Program Procedures

STATEMENT OF PURPOSE:

Assessment of maintainability program procedures assures integration with the design process, with maintenance engineering, and identifies interface with logistic support analysis

E13.3A2B2-1 Are procedures established within the maintainability program to assure that maintainability engineering is an integral part of the design process?

- o Yes
- o No

E13.3A2B2-2 Do the maintainability program procedures identify the means for designing fault detection and diagnostics subsystems at all applicable levels of maintenance with maximum use of BIT/BITE?

- o Yes
- o No

E13.3A2B2-3 Are requirements for the Maintainability Program tailored for the specific system and equipment acquisition?

o Yes
  - Ensure that requirements essential to meeting minimum operational needs are not excluded.

o No
  - Have Tradeoffs been evaluated between Operational Needs and Program Costs?

PROCESS E13.3A2B3 Assess Interfaces and Coordination

STATEMENT OF PURPOSE:

Assessment of the interfaces and coordination of the maintainability program assures that input to the logistic support analysis process as well as coordination and combination with related reliability program tasks

E13.3A2B3-1 Are interface and coordination requirements established in contract documents to assure that all maintainability data used for logistic support is traceable to the maintainability program?

o Yes

o No

E13.3A2B3-2 Are related tasks within the reliability program assessed for possible combination with maintainability tasks to avoid duplication of effort?

o Yes

o No

E13.3A2B3-3 Has the Timing and Depth required for each maintainability task as well as actions to be taken on task outcome been coordinated with other Engineering Support Groups?

o Yes

o No
  - Why not?

PROCESS E13.3A2B4 Assess Quantitative Requirements

STATEMENT OF PURPOSE:

Assessment of maintainability quantitative requirements is to assure inclusion in specifications when essential to support at all levels of maintenance

E13.3A2B4-1 Are maintainability quantitative requirements specified for the system or end item for all levels of maintenance?

- o Yes
  - Ensure that requirements include mean time to repair and maintenance ratio as well as additional values as required for direct manhours per maintenance action, probability of fault detection, and proportion of faults that can be isolated.
- o No
  - What is the impact on the system/end item without maintainability requirements specified?

E13.3A2B4-2 Are Basic Maintainability requirements derived through analysis of user needs?

- o Yes
  - Are Operational and Deployment Constraints and Concepts assessed?
- o No
  - What is Rationale for Quantitative requirements?

E13.3A2B4-3 Are requirements levied at the equipment level as well as at each level of maintenance?

- o Yes
  - Are requirements consistent with maintenance concepts?
- o No
  - Why not?

PROCESS E13.3A2B5 Consolidate Purpose, Plan & Quantitative Requirements

STATEMENT OF PURPOSE:

The consolidation of results from assessments of the maintainability program procedures, interfaces, and quantitative requirements is provided as input to the identification of maintainability requirements

E13.3A2B5-1 Are general requirements for the maintainability program adequate to address procedures, interfaces and coordination, and quantitative requirements?

- o Yes
- o No
  - What methods will be employed to acquire required information?

PROCESS E13.3A3 Assess Plans & Controls

STATEMENT OF PURPOSE:

The assessment of maintainability program plans and controls is to assure that surveillance and control tasks are specified

E13.3A3-1 Are management and engineering tasks specified in the statement of work to adequately address planning and controls for the maintainability program?

- o Yes
  - Ensure that selected tasks have been tailored to satisfy the type of acquisition program and applicable phase.
- o No
  - Explain alternate procedures to establish planning and surveillance for the maintainability program.

E13.3A3-2 Are estimates of time and effort to complete tasks available to assist in selecting tasks which can be accomplished within schedule and funding constraints?

- o Yes
  - What is the task prioritization?
- o No
  - What steps can be taken to select tasks to fit the needs?

PROCESS E13.3A3B1 Identify Management & Engineering Tasks

STATEMENT OF PURPOSE:

Identification of management and engineering tasks is required for surveillance and control of the maintainability program

E13.3A3B1-1 For surveillance and control of the maintainability program, are tasks specified to develop a program plan, conduct program reviews, and establish a data collection and analysis system?

- o Yes
- o No
  - Explain alternate procedures to accomplish maintainability program surveillance and control.

E13.3A3B1-2 Is the government's approval and control requirements for contractor's efforts appropriate to primarily insure that acceptable maintainability is designed into the product?

- o Yes
  - Ensure that repair time quantitative requirements are realistic.
- o No
  - What steps can be taken to eliminate unnecessary contractor efforts?

E13.3A3B1-3 Are quantitative, qualitative, verification and demonstration requirements stated in the item specifications with schedule and documentation requirements stipulated as part of the statement of work?

- o Yes
- o No
  - Why not?

PROCESS E13.3A3B2 Review Maintainability Program Plan

STATEMENT OF PURPOSE:

Review of the maintainability program plan assures task identification, coordination, and description together with procedures for data integration with the logistic support analysis record

E13.3A3B2-1 'Does the maintainability program plan identify and coordinate required management accounting, and engineering tasks?

- o Yes
- o No
  - How are maintainability program requirements addressed/specified in lieu of the program plan.

E13A3B2-2 Is a preliminary maintainability program plan requested as a part of the request for proposal?

- o Yes
  - Explain its impact on source selection.
- o No
  - What alternate procedures are utilized to determine contractor's approach to the maintainability program.

E13.3A3B2-3 Is the maintainability program plan used to evaluate the contractor's procedures for implementing and controlling maintainability tasks?

- o Yes
  - Ensure that requirements are levied by the prime contractor on the subcontractors.
- o No
  - Explain how contractor's procedures are evaluated.

E13.3A3B2-4 Are requirements for maintainability program plan in accordance with task 101 of MIL-STD-470?

- o Yes
  - Was the task description tailored to fit the specific acquisition program and phase of development?
- o No
  - How will these requirements be specified?

PROCESS E13.3A3B3 Attend Program Reviews

STATEMENT OF PURPOSE:

Maintainability program reviews should be an integral part of system engineering review and evaluation and addresses progress on all maintainability related tasks

E13.3A3B3-1 Are maintainability program reviews established as an integral part of system engineering reviews and evaluations?

- o Yes
  - Ensure attendance at both preliminary design reviews and critical design review.
- o No
  - Explain alternate procedures established to address progress on maintainability related tasks.

E13.3A3B3-2 Are all pertinent aspects of the maintainability program identified and discussed at each of the following reviews?

- o Preliminary Design
- o Critical Design
- o Production Readiness
- o Program Status

o Yes

- How are results recorded and open items followed up?

o No

- Why not?

E13.3A3B3-3 Is task 103 of MIL-STD-470 specified to address maintainability reviews?

o Yes

- Ensure that reviews are applicable to the prime and equipment subcontractors.

o No

- Explain the alternative method used to establish maintainability program reviews.

PROCESS E13.3A3B4 Review Data Collection Analysis & Corrective Action Rqmt

STATEMENT OF PURPOSE:

Review of the maintainability data collection and analysis system ensures that design problems are identified and corrective action is initiated

E13.3A3B4-1 Based on the review of the maintainability data collection and analysis, is information sufficient to assess the maintainability performance of the system/equipment?

o Yes

- Explain how the data collection is compatible with other program area data systems.

o No

- List alternate procedures to identify maintainability design problems and ensure initiation of corrective action.

E13.3A3B4-2 Is the data collection system planning covered in the maintainability demonstration plan?

- o Yes
- o No
  - What are alternative procedures used to identify maintainability design problems and for initiating corrective actions?

E13.3A3B4-3 Is task 104 of MIL-STD-470 specified to establish a data collection and analysis system not later than the demonstration and validation or equivalent phase of the material acquisition program?

- o Yes
- o No
  - Why not?

PROCESS E13.3A3B5 Consolidate Program Data

STATEMENT OF PURPOSE:

Consolidation of the maintainability program plans, reviews, and reports results in identification of the program requirements, status, and assessments

E13.3A3B5-1 Are results from the following reviews and documents suitable as source data to identify maintainability requirements?

- o Maintainability Program Plan
- o Program and Design Reviews
- o Data Collection, Analysis and Corrective Action

- o Yes
- o No
  - Explain type and source of alternate or additional identification data.

PROCESS E13.3A4 Assess Allocations, Analysis, & Criteria

STATEMENT OF PURPOSE:

Assessment of design and evaluation tasks within a maintainability program includes allocations, analysis, and criteria to determine maintainability design characteristics.

E13.3A4-1 Does the maintainability program specify design and analysis tasks to allocate quantitative maintainability requirements and to determine maintainability design characteristics and criteria through analysis and reviews?

- o Yes
  - Ensure that the depth of detail is compatible with the acquisition program phase and the system/equipment design status.
- o No
  - Explain alternate procedures to schedule and accomplish maintainability design and analyses.

PROCESS E13.3A4B1 Identify Engineering & Accounting Tasks

STATEMENT OF PURPOSE:

Identification of engineering and accounting tasks is required for the design and analysis portion of the maintainability program

E13.3A4B1-1 Are engineering and accounting tasks specified for the design and analysis portion of the maintainability program to obtain the following data?

- o Maintainability Modeling, Allocations, Predictions, Analysis, Information, and Design Criteria
- o Input to a maintenance plan and logistics support analysis

- o Yes
  - List the tasks specified from MIL-STD-470.
- o No
  - Explain alternate procedures established to obtain maintainability design and analysis data.

PROCESS E13.3A4B2 Review Maintainability Model

STATEMENT OF PURPOSE:

Review of the maintainability mathematical model is to evaluate numerical apportionments, applicable maintenance levels, and compatibility with other plans, considerations and constraints

E13.3A4B2-1 Is the maintainability mathematical model suitable for evaluation of the following?

- o Numerical Apportionments for item maintainability
- o Applicable levels of maintenance
- o Compatibility with maintenance planning, supply considerations, and personnel constraints

o Yes

o No
  - Explain why maintainability modeling is not being utilized.

E13.3A4B2-2 Is task 201 of MIL-STD-470 specified to develop a maintainability model to evaluate item maintainability?

o Yes
  - Are sufficient details specified in the statement of work?

o No
  - Does the system equipment complexity warrant such a model?

E13.3A4B2-3 Are the Maintainability Models used to determine the effect change in one variable has on Acquisition or Total System Cost or Maintainability or Maintenance Performance Characteristics?

o Yes
  - Are they used to determine the impacts of changes in various maintainability characteristics?

o No
  - What is the Rationale for omitting this task?

PROCESS E13.3A4B3 Review Maintainability Allocation

STATEMENT OF PURPOSE:

System quantitative maintainability requirements should be allocated or apportioned to lower levels to establish design requirements.

E13.3A4B3-1 Are maintainability design requirements established for assemblies, subassemblies, and components based on allocations from system or end item quantitative parameters which are consistent with the maintainability model?

o Yes

o No
- Explain alternate design requirements and the correlation to the overall system.

E13.3A4B3-2 Is task 202 of MIL-STD 470 specified to assure that quantitative maintainability system requirements are allocated or apportioned to lower levels?

o Yes
- Are allocated maintainability values consistent with the maintainability model?

o No
- Explain how baseline maintainability requirements are determined for designers.

E13.3A4B3-3 Are Maintainability Allocation Objectives, Results, and Problems covered in both the Preliminary Design Review and the Critical Design Review?

o Yes
- What is the status of resolving identified problems?

o No
- When are specific maintainability requirements reviewed that items must be designed and achieved?

PROCESS E13.3A4B4 Assess Maintainability Predictions

STATEMENT OF PURPOSE:

Assessment of predicted maintainability is required early in a system/equipment development program to determine feasibility of the proposed design.

E13.3A4B4-1 Are predicted maintainability parameters available for the new system/subsystem/equipment and do they indicate that system maintainability requirements can be achieved with the proposed design?

o Yes
- Ensure that predicted values are being updated with actual experience and demonstration data when available.

o No

- Explain procedures and data utilized in lieu of predicted maintainability values.

E13.3A4B4-2 Is task 203 of MIL-STD-470 specified to obtain maintainability predictions for the system/subsystem/equipment related to each associated level of maintenance?

o Yes

- Are methods provided for making predictions?

o No

- What are alternative procedures for obtaining maintainability predictions?

E13.3A4B4-3 Are Maintainability Predictions at any maintenance level used as inputs to availability, Logistics Support and Maintenance Engineering Analysis?

o Yes

o No

- Why not?

PROCESS E13.3A4B5 Evaluate FMEA Maintainability Information

STATEMENT OF PURPOSE:

Maintainability information obtained from the failure modes and effects analysis is evaluate to establish fault detection and isolation characteristics.

E13.3A4B5-1 Is Task 103 of MIL STD 1629 specified in the development contract to obtain maintainability information during the failure modes, effects, and criticality analysis?

o Yes

- Are fault detection and isolation characteristics established?

o No

- Explain alternate procedures to develop maintainability information.

E13.3A4B5-2 Is the depth and scope of the failure modes and effects analysis based on the complexity of the item/equipment to the replacement units or subunits?

o Yes

- Is maintainability at unit, direct and general support levels of maintenance applicable?

o No

- Will a larger scope FMEA be performed to the depth of removable subunits at a later time?

E13.3A4B5-3 During the performance of Failure Modes and Effects Analysis, are modes of failure and their effects on symptoms identified such that Fault Detection, Diagnostic and Isolation Design can proceed effectively?

o Yes

o No

- Why is the alternate procedure utilized to establish failure modes and their effects?

PROCESS E13.3A4B6 Assess Maintainability Analysis

STATEMENT OF PURPOSE:

Assessment of the maintainability analysis is to ensure that a required maintenance capability is incorporated in the design approach and during design actions.

E13.3A4B6-1 Are results from the maintainability analysis utilized in the determination of repair policies for the system, subsystems, assemblies and components?

o Yes

- Ensure that results of maintainability analysis are incorporated in LSA documentation.

o No

- Provide alternate procedures for design integration with maintenance capabilities.

E13.3A4B6-2 Does the maintainability analysis include a corresponding analysis of test system makeup and design which must be an integral part of the design?

o Yes

- Does the test system require hardware and software beyond that required for the primary function?

o No

- Does complexity of the test system makeup and design require analysis?

E13.3A4B6-3 Is task 205 of MIL-STD-470 specified for performance of a maintainability analysis?

- o Yes
  - List the elements and procedures that are specified to accomplish maintainability design?
- o No
  - What alternative procedures are specified to accomplish maintainability design?

PROCESS E13.3A4B7 Review Maintainability Design Criteria

STATEMENT OF PURPOSE:

Review of maintainability design criteria ensures that quantitative and qualitative maintainability requirements are translated into hardware designs.

E13.3A4B7-1 Is maintainability design criteria utilized to translate maintainability requirements into detailed hardware designs?

- o Yes
  - Ensure that anticipated operational constraints are also considered during hardware design.
- o No
  - Explain alternative procedures for incorporating maintainability requirements into hardware designs.

E13.3A4B7-2 Is task 206 of MIL-STD-470 specified to identify maintainability design criteria?

- o Yes
  - Do the technical policies and procedures for the design engineers include maintainability design handbooks, checklists and guidelines?
- o No
  - Why not?

E13.3A4B7-3 Is the maintainability design criteria available for approval at the preliminary design review with final content and description presented at the critical design review?

- o Yes
- o No
  - What is alternate schedule for the maintainability design criteria availability?

PROCESS E13.3A4B8 Review Inputs to Maintenance Plan & LSA

STATEMENT OF PURPOSE:

The review of inputs to the Maintenance Plan and LSA for a system/equipment ensures that results from the maintainability program are an integral part.

E13.3A4B8-1 Are the results from maintainability program tasks provided as input to the maintenance plan and to Logistic Support Analysis Documentation?

- o Yes
  - What is the effect of the maintainability analysis on the Maintenance Plan?
- o No
  - Explain alternative procedures utilized to integrate maintainability data and requirements into the maintenance plan and into LSA.

E13.3A4B8-2 Is task 207 of MIL-STD-470 specified to identify and prepare inputs for LSA from results of maintainability program tasks?

- o Yes
  - Is the listing of outputs from the planned maintainability analysis available for approval at the preliminary design review?
- o No
  - What are alternative procedures for coordinating reporting requirements with LSA?

E13.3A4B8-3 Are the inputs provided for the Maintenance Plan and LSA based on results of Tasks 201, 205 and 206 of MIL-STD-470?

- o Yes
  - List other portions of the maintainability program also utilized.
- o No
  - Why not?

PROCESS E13.3A4B9 Consolidate Data

STATEMENT OF PURPOSE:

Consolidation of data from the maintainability program design and analysis tasks are used as input for identification of maintainability requirements.

E13.3A4B9 Do results from the maintainability program design and analysis tasks include the following?

- o Quantitative maintainability values
- o Design approach
- o Design characteristics
- o Design criteria

o Yes

- Explain how data is updated.

o No

- What alternative procedures are established to determine missing data and requirements?

PROCESS E13.3A5 Assess Testing & Acceptance

STATEMENT OF PURPOSE:

Assessment of testing and acceptance within the maintainability program will disclose design deficiencies, will provide measured maintainability data, and will assure compliance with quantitative requirements.

E13.3A5-1 Are maintainability demonstration tests scheduled to disclose deficiencies in item design and to provide measured maintainability data?

o Yes

- List the requirements for a test plan and test procedures.

o No

- What are alternate procedures to obtain maintainability data?

E13.3A5-2 Is data collected during maintainability demonstration tests integrated with results from the reliability program?

o Yes

- Explain integration with the data collection, analysis, and corrective action system.

o No

- Explain schedule and requirements for coordination with reliability program.

E13.3A5-3 Is task 301 of MIL-STD-470 specified for the conduct of maintainability demonstration tests?

- o Yes
  - Is MIL-STD-471 identified for conducting the tests?
- o No
  - What are alternative tests which will assure compliance with specified maintainability requirements?

PROCESS E13.3A6 Identify Maintainability Requirements

STATEMENT OF PURPOSE:

Identification of maintainability qualitative and quantitative requirements is obtained for program requirements, plans, reviews, design, and testing.

E13.3A6-1 Have qualitative and quantitative maintainability requirements been identified as input into the maintainability program?

- o Yes
  - Confirm that data and update are provided as input to the logistic support analysis record.
- o No
  - Explain alternative procedure to satisfy maintainability requirements.

E13.3A6-2 Are testability considerations included as part of the maintainability program?

- o Yes
- o No
  - Why not?

E13.3A6-3 Based on the system maintenance concepts, are alternative test strategies and diagnostic concepts included as part of the maintainability program?

- o Yes
- o No

E13.3A6-4 For those systems or functions deemed "mission critical" does the maintainability program consider methods of monitoring the performance of critical functions and functions involving personnel safety?

- o Yes
- o No

E13.3A6-5 Is the maintenance program going to use confidence checks prior to system initiation to achieve a high degree of availability?

- o Yes
- o No

E13.3A6-6 Have maintainability requirements for compatibility between ATE/TMDE/standard test system and equipment design been adequately specified?

- o Yes
- o No

E13.3A6-7 Have qualitative maintainability requirements been identified and met in the following areas?

- o Test Points
- o Modularity
- o Accessibility

- o Yes
  - Ensure adequate contractual provisions for design, testing and evaluation.
- o No
  - Why not?

E13.3A6-8 Have quantitative maintainability requirements been identified and met in the following areas?

- o Built-in Test/Built-in-Test-Equipment
- o On-system maintenance
- o Off-system maintenance

- o Yes
- o No
  - What corrective action is ongoing and when will it be completed?

E13.3A6-9 Have all technical risks and issues been identified based on the specified maintainability requirements and maintenance program?

- o Yes
- o No

PROCESS E13.4 Assess Availability

STATEMENT OF PURPOSE:

Assessment of availability is based on quantitative values of reliability and maintainability which is translated into an index of effectiveness.

E13.4-1 Are quantitative reliability and maintainability requirements based on availability requirements for the system/equipment?

- o Yes
- o No
  - Explain alternative requirements for the system/equipment.

E13.4-2 Was the Operational Summary/Mission Profile (OMS/MP) used to support development of system performance requirements and RAM requirements?

- o Yes
  - Ensure that the OMS/MP is attached as a annex to the Operational and Organizational (O&O) Plan.
- o No
  - Explain how system readiness objectives can be established without a completed OMS/MP.

PROCESS E13.4A1 Review Availability Measures

STATEMENT OF PURPOSE:

The review of availability measures includes operational values contained in requirements documents as well as inherent and achieved values.

E13.4A1-1 Is the availability requirement stated in the requirement document expressed as an operational value in accordance with Army regulations?

o Yes
  - What is the relationship to inherent and/or achieved availability values?

o No
  - Does the RAM rationale annex provide proper justification/explanation?

E13.4A1-2 Are Specified Values (SV) for RAM requirements included in contracts as a design requirement to be produced and delivered by the contractor?

o Yes
  - Are the SVs derived from operational RAM requirements?

o No
  - Why not?

E13.4A1-3 Are "Hardware" RAM design requirements stated in the contract and were the system specifications derived from Operational Profiles?

o Yes
  - Explain the K-Factor or Human Reliability values used.

o No
  - How will the system's operational values be met?

PROCESS E13.4A2 Assess Inherent Values

STATEMENT OF PURPOSE:

Assessment of inherent availability is essentially hardware reliability and considers only the operating time and unscheduled (corrective) maintenance downtime.

E13.4A2-1 Is inherent availability determined for a system/equipment wherein operating time and unscheduled corrective maintenance downtime is utilized but scheduled preventive maintenance downtime is ignored?

o Yes
  - Where are inherent availability values utilized in the program?

o No

E13.4A2-2 Based on regulations, is inherent availability not used in Army requirements documents?

- o Yes
- o No
  - How will Inherent Availability requirements be transformed into operational availability?

E13.4A2-3 If Inherent Availability is specified for contractual values, are operational factors of K-factors available for operations requirements?

- o Yes
  - Are factors based on experience or early test data?
- o No
  - Why not?

PROCESS E13.4A3 Assess Achieved Values

STATEMENT OF PURPOSE:

Assessment of achieved availability values is the portion of time that a system/equipment is operational considering operating time and total maintenance downtime.

E13.4A3-1 Is achieved availability determined for a system/equipment wherein operating time is utilized together with both the unscheduled corrective maintenance downtime and the scheduled preventive maintenance downtime?

- o Yes
  - Where are achieved availability values utilized in the program?
- o No

E13.4A3-2 For a system equipment requiring preventive scheduled maintenance, is the achieved availability less than its inherent availability?

- o Yes
  - Ensure that the achieved availability counts the down time for preventive maintenance.
- o No
  - Confirm that achieved and inherent availability are equal when the system equipment does not require preventive maintenance.

E13.4A3-3 Is achieved availability used for development and initial production testing?

- o Yes
  - Confirm that the following times are excluded
    - o Operation before-and-after operational checks and service
    - o Supply, administrative, and waiting times
    - o Standby times
- o No
  - Explain how all times are considered and incorporated.

PROCESS E13.4A4 Assess Operational Values

STATEMENT OF PURPOSE:

Assessment of operational availability values considers all calendar time and includes the combined effects of item design, quality, installation, environment, operation, maintenance, and repair.

E13.4A-1 Does the determination of operational availability for the system/equipment include standby time (not operating but assumed operable) as well as total administrative and logistics downtime (TALDT)?

- o Yes
- o No
  - Explain justification and impact on any variation.

E13.4A4-2 Does the operational availability value encompass the following?

- o hardware
- o embedded software
- o operator/crew
- o maintenance personnel
- o equipment publications
- o tools
- o test measurement and diagnostic equipment
- o support equipment
- o operating and support environment

- o Yes
  - Ensure that values are based on measured times obtained from testing or based on realistic values.

o No

- Explain justification and impact on any omissions or variations.

E13.4A4-3 Does the operational testing of the system equipment concentrate on determining RAM parameters when in the hands of typical user troops in an operational environment?

o Yes

- Confirm that tests are conducted in accordance with the operational mode summary/mission profile (OMS/MP).

o No

- How are RAM estimates normalized when not feasible to follow the OMS/MP?

PROCESS E13.5 Review RAM Report

STATEMENT PURPOSE:

Review of results from the reliability and maintainability program and from determined availability values is required to establish and meet requirement.

E13.5-1 Are results from the reliability and maintainability programs suitable to obtain and confirm data to establish and meet availability requirements for the system/equipment?

o Yes

o No

- What are the plans and schedules to obtain necessary data?

E13.5-2 Are the operational RAM requirements and allocated RAM parameters mutually compatible with logistic concepts?

o Yes

- List procedures established to insure that RAM data are compatible with logistic support analysis requirements.

o No

- What steps are being taken to enhance the achievement of an affordable and supportable system?

INDEX

A

Action Date Items List 5-10
Adding New Analyst 3-4
Adding New Equipment 3-1
Alert and Action Schedule Date Reports 5-10
Alert and Action Schedule Dates (Action Date Items) 5-28
Alert and Action Schedule Dates (Alert Date Items) 5-27
Alert Date Items List 5-10
Alert/Action Date 4-6
Analyst Identification Screen 3-2
Analyst Screens 3-2
Analyst Sign-On Screen 3-4
Answering Questions 4-3
Assessment Results 4-9
Assessment Results Report 5-6
Assessment Results Report (Current Review Session) 5-18
Assessment Results Report (Weapon System Current Status) 5-17
Assessment Selection Screen 3-8
Assessment Status Report 5-5
Assessment Status Report (Assessment History) 5-16
Assessment Status Report (Current Review Session) 5-15
Assessment Status Report (Weapon System Current Status) 5-13
Assessment Techniques and Procedure 4-1
Assessment Topics 3-7
Audit Trail 4-1

B

Background 3-1
Backspace Key 4-11
Backup Files 2-7
Boot-Up from Hard Drive 2-5
Boot-Up From Floppy 2-6
Boot-Up Software Using Floppy Disk 2-6
Boot-Up Software Using Hard Disk 2-5

C

Caps Lock Key 4-11
Changing the N/A 4-10
Changing Report Destination 5-3
Cost and Schedule Impact Rating Screen 4-8
Cost and Schedule Impacts Report 5-7
Cost and Schedule Impacts Report (Criticality Analysis) 5-21
Cost and Schedule Impacts Report (Current Review Session) 5-19
Cost and Schedule Impacts Report (Weapon System Current Status) 5-20
Cost and Schedule Impacts Report (Weapon System Summary) 5-22
Covers AR 700-127 1-1
Creating Back-Up Files 2-6
Criticality Analysis Report 5-8
Current Review Session 5-7
Current Session 4-1
Current Weapon System Status Report 5-6

D

Delete Key 4-11
Different Users 4-2

E

Edit Option 3-2
Editing Existing Information 3-4
Enter Key 4-11
Equipment Identification Screen 3-1, 3-2
Equipment Requirements 2-1
Equipment Sign-On Screen 3-1, 3-3
ESC Key 4-10
Example of the Assessment Screen 4-6
Exit 3-7
Explanation Response 4-5

F

File Names 2-8
File Output 5-4
Function Keys 4-10
F2 Key 4-4
F3 key 4-5
F4 Key 3-10

F10 Key 4-10

H

Hard Disk 2-2
Hardware 2-1
Help Key 4-11
Help Screens 3-10
Historical Records 4-1
Historical Report 5-6
Historical Results 4-1

I

Insert Key 4-11
Installation 2-2
Installation on a Hard Disk 2-2
Instructions 3-6
Instructions For Field Use 2-3
Introduction 1-1
Introduction 3-6
ILS Review Logic and Organization 1-2
ILS Software 1-4
ILS Software Architecture 1-2

M

Main Menu 3-4, 4-2
Main Menu Options 3-5
Main Menu Screen 3-5
Making a Field Copy 2-4
Marking a Question N/A 4-9
Milestone Assessment 4-8
Milestone Assessment Screen 4-9
Multiple Analyst Usage 4-2

N

Navigation 3-11
Navigation Keys 3-12, 4-10
Navigation Menu Option Descriptions 3-12
Navigation Menu Screen 3-10
NO Response 4-7

O

Operations 3-7
Overall Assessment Results Report 5-5, 5-2

P

Packing Databases 3-6
Perform Assessment 3-7
Performance & Sustainability 4-8
Performance and Sustainability Rating Screen 4-9
Performance & Sustainability Report 5-8
Performance and Sustainability Impacts Report (Current Review Session) 5-24
Performance and Sustainability Impacts Report (Criticality Analysis) 5-25
Performance and Sustainability Impacts Report (Weapon System Current Status) 5-23
Performance and Sustainability Impacts Report (Weapon System Summary) 5-26
Performing an Assessment 4-2
Power 2-2
Power On/Off 2-2
Pre Backup Instructions 2-6
Printer Output 5-3
Process Summary Screen 3-8
Program 1-3

Q

Question List 3-9
Question Menu Screen 3-9
Question Response 4-3
Question Selection 4-3
Questions with "Explanation" Answers 4-5
Questions with "N/A" Answers 4-9
Questions with "NO" Answers 4-7
Questions with "YES" Answers 4-6

R

Recovery From Corrupted Index Files 2-7
Recovery Procedures 2-7
Reorganizing Index Files 3-6
Report Choices 5-1
Report Files 5-4
Report Generation 5-1
Report Generation Main Menu Screen 5-2
Restore 2-7
Review Scope 1-2

S

Sample Question Screen 4-4
Scope 1-1
Screen Output 5-3
Select Options 4-8
Selecting a Report 5-1
Software Boot-Up Procedure 2-5
Software Installation and Backup 2-1
Software Provided 1-3
Start-Up Operations 3-1
Starting Assessment 4-2
Subprocess Menu Selection Screen 3-9
System Installation 2-2
System/Equipment Data Report 5-4
System/Equipment Data Report 5-11

T

Tab Key 4-11
Tagging Results 4-2
Terminating The Session 3-7
Text Question Screen 4-5
360K Field Copy 2-4

U

User's Guide 1-1
Utilities 3-5

W

Weapon System Summary Report 5-8
Word Processing Function Keys 4-11
Working Copy 2-3

Y

YES Response 4-6