MILITARY STANDARD

PROCEDURES FOR PERFORMING A FAILURE MODE EFFECTS AND CRITICALITY ANALYSIS

To all holders of MIL-STD-1629A

1. The following pages of MIL-STD-1629A have been revised and supersede the pages listed:

New Page	Date	Superseded Page	Date
v	24 November 1980	v	Reprinted w/o change
vi	28 November 1984	vi	7 June 1983
A-1	28 November 1984	A-1	24 November 1980
A-2	28 November 1984	New	
A-3	28 November 1984	New	
A-4	28 November 1984	A-2	24 November 1980

2. Make the following pen and ink changes:
   a. Existing page A-3, change page number to A-5.
   b. Existing page A-4, Change page number to A-6.
   c. Existing page A-5, change page number to A-7.
   d Existing page A-6, change page number to A-8.

3. RETAIN THIS NOTICE AND INSERT BEFORE TABLE OF CONTENTS.

4. Holders of MIL-STD-1629A will verify that the page changes indicated herein have been entered. This notice will be retained as a check sheet. This issuance is a separate publication. Each notice is to be retained by stocking points until the Military Standard is completely revised or canceled.

Custodians:
Army - CR
Air Force - 17

Preparing Activity
Navy - AS
(Project No. RELI-0037)

Review Activities:
Navy - SH, OS
Army - EA, AR

CONTENTS (Continued)

FIGURES

MIL-STD-1629A

CONTENTS (Continued)

ABBREVIATION TERM ABBREVIATION TERM

APPENDIX A

APPLICATION AND TAILORING GUIDE

10. GENERAL

10.1 Scope. This appendix provides notes for the guidance of the procuring activity in generating the contractual requirements for a failure mode, effects, and criticality analysis (FMECA).

10.2 Tailoring requirements. Each provision of this standard should be reviewed to determine the extent of applicability. Tailoring of requirements may take the form of deletion, addition, or alteration to the statements in Sections 3 and 4 and any specified tasks to adapt the requirements to specific system characteristics, procuring activity options, contractual structure, or acquisition phase. The tailoring FMECA requirements are specified in the contractual provisions to include input to the statement of work, contract data item list (CDRL), and other contractual means.

10.3 Duplication of effort. It is incumbent upon the procuring activity to review the contractual requirements to avoid duplication of effort between the reliability program and other program efforts such as safety, maintainability, human engineering, test and evaluation, survivability and vulnerability, maintenance planning, and integrated logistics support. Identification of the coincident use of FMECA results by the reliability program and other disciplinary areas is required in the FMECA plan or other appropriate program documentation to avoid duplication of effort by the procuring activity and the contractor.

20. REFERENCED DOCUMENTS (not applicable)

30. DEFINITIONS (not applicable)

40 GENERAL REQUIREMENTS

40.1 Ordering data. The procuring activity shall specify the following:

a. Title, number and date of this standard.

b. Task number(s) required.

c. FMECA plan (Task 105) if required.

d. Indenture level of analysis (4.3.3) required.

e. Steps to be used in the FMECA process (4.4.2).

f. FMECA report (4.5) if required. Code A in block 8 of DD1423 if preliminary draft is required. An automated LSAR output report LSA-060 or a nonautomated LSAR report, if required. If an automated LSAR output report is required, the information at figure A1 must be specified.

LSA-060, LCN Master File.

Basic Card Entry Instructions.

CARD COLUMN	DESCRIPTION	INSTRUCTIONS
1	Selection Indicator (SEL IND)	Mandatory entry of "S".
2-4	Report Selection Number (RSN)	Mandatory entry of "060" which is report number identifying the output report requested.
5	Report Control Code (RCC)	Mandatory entry of an alphanumeric code; "A"-"Z", "0"-"9", which will uniquely identify this report number selection. If a trailer or option card is associated with this report selection, it must match the RCC on the basic slection card. (If necessary, instructions for trailer cards will be provided by the requiring authority).
6	Type Card (TYPE)	Mandatory entry of "A" (basic card). If a listing of the entire content of the LCN Master File is desired, no further data is required to be entered on this card with the exception of cc 35.
7	Sequence Code (SEQ CD)	Leave blank.
8-18	Start Logistic Support Analysis Control Number (START LCN)	Enter the LCN identifying the first item to be included in the report. It identifies the system, subsystem, or component for which the report is desired. Data element definitions (DED) are contained in appendix F of MIL-STD-1388-2A. See DED 197 for a complete definition of LCN.
19	Alternate LCN Code (ALC)	If the report is required for an alternate design or maintenance concept of an associated LCN, enter the ALC. See DED 023 for a complete definition of ALC.

FIG A1 Basic card entry instructions

20-30	Stop LCN	Enter the Stop LCN to indicate the point where the LSAR ADP system will stop extracting information from the file. If no Stop LCN is entered, all data from and subordinates to the Start LCN will be considered as applicable for the report. See DED 197.
31-33	Useable on Code (UOC)	Enter the UOC for the model of the equipment for which the report is to be developed. The UOC must match a UOC entered on the record of the Start LCN. Data not matching the UOC entered will be omitted from the report. A blank UOC will result in selection of all UOCs within the specified Start and Stop LCN range. See DED 536 for a complete definition of UOC.
34	Service Designation Code	Enter "A", Army; "F", Air Force; "N", Navy; "M", Marine Corps' "O", Other and "X", all when the output report deals with specific task related data to be reported and output report headers.
35	B Sheet Option Code	Mandatory entry of "F" to obtain the FMECA data only. An "F" entry will always result in Header Prints.
36	Header Print Option (HEADER)	If the output is required to have data element headers for each record type, enter "X".
37	Magnetic Tape Option	Leave blank.

FIG A1 (cont'd) Basic card entry instructions

40.2 Data item descriptions (DID). The following listed DIDs provide a source of possible data item description and format requirements for required data.

SOURCE	DATA REQUIREMENTS	APPLICABLE DID
Task 105	Failure Mode, Effects and Criticality Analysis (FMECA) Plan	DI-R-7086
General Requirements Section 4-5 and Task 101	Failure Mode, Effects and Criticality Analysis (FMECA) Report	DI-R-7085A

50. APPLICATION CRITERIA

50.1 General considerations. This standard has been structured to facilitate the tailoring of FMECA requirements based upon individual program needs. Program variables such as system complexity, funding, and schedule influence the level of detail and timing of the FMECA and must be considered when tailoring the requirements. All programs do not require the same level of detail and all programs should not wait until full scale development to implement the FMECA requirements.

50.1.1 Level of detail. The level of detail applies to the level of indenture at which failures are postulated. The FMECA can be accomplished at various levels of indenture from system to part level depending upon the information available and the needs of the program. The lower the indenture level, the higher the level of detail since more failure modes will be considered. The choice of the level of indenture must be compatible with the program cost and schedule constraints and the system reliability requirements. A less detailed analysis which is available in time to contribute to system reliability is more valuable than a more detailed analysis which is late and makes changes costly and unfeasible. In general, the FMECA should not be performed below the level necessary to identify critical items or to the level required by the LSA candidate list, whichever is lower. The depth and detail of the FMECA effort must be defined in appropriate contractual and program documentation.

50.1.2 Timing. The objective of the FMECA is to support the decision making process. If the analysis fails to provide usable information at or before a project decision point, then it has made no contribution and is untimely. The time-phasing of the FMECA effort is important and should be identified in the FMECA plan to assure that analysis results will be available to support the project decision points during system development. Since program cost and schedule constraints require that available resources be used where they are most cost effective, the earliest possible availability of FMECA results is important so that the impact on cost and schedule can be minimized.

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