NON-MEASUREMENT SENSITIVE

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MIL-HDBK-1388

NOTE: This draft dated 1 Mar 94, prepared by the U.S. Army Materiel Command, Logistics Support Activity has not been approved is subject to modification.

DO NOT USE PRIOR TO APPROVAL

MILITARY HANDBOOK

LOGISTIC SUPPORT ANALYSIS

DRAFT

FOREWORD

1. This military handbook is approved for use by all departments and agencies of the Department of Defense (DOD).

2. Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Director, USAMC Logistic Support Activity, ATTN: AMXLS-ALD, Huntsville, AL 35898-7466 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

3. This handbook is directed toward improving the understanding of the Logistic Support Analysis (LSA) process as it pertains to MIL-STD-1388-1, Logistic Support Analysis and MIL-STD-1388-2, DOD Requirements for a Logistic Support Analysis Record and their associated interfacing standards and documents. This handbook is to be used in concurrent with MIL-STD-1388-1 and MIL-STD-1388-2. The tailoring of LSA data and LSA Record (LSAR) data should be done in accordance with the tailoring guidance provided by each of the respective documents.

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1.0 Purpose. This handbook provides an easy to understand ready reference document for the entire LSA process as it is generally applied to a DOD acquisition program.

1.1 Application of handbook. This handbook applies to all system/equipment acquisition programs, major modification programs, and applicable research and development projects through all phases of the system/equipment life cycle. This handbook is for use by both contractor and government activities. As used in this handbook, the requiring authority is generally a government activity but may be a contractor when LSA documentation requirements are levied on subcontractors. The performing activity may be either a contractor or government activity. The use of the term, contract, in this standard includes any document of agreement between organizations to include between a government activity and another government activity, between a government activity and a contractor, or between a contractor and another contractor.

1.1.1 Content of appendices. There are three appendices in this handbook. Appendix A contains a list of acronyms, appendix B is reference material on MIL-STD-1388-2B data tables and reports, and appendix c contains a procedural supplement to MIL-STD-1388-2B. This supplement will help in the documentation and report selection of provisioning related reports.

1.1.2 Tailoring. This handbook cannot be specified directly in a contract. MIL-STD-1388-1 and MIL-STD-1388-2 should be the standards specified in a contract. The requiring authority (RA) and the material developer (MD) will use MIL-STD-1388-1 in the selection of tasks for inclusion in the contract statement of work (SOW) and shall establish the LSA documentation requirements based upon the elements identified in those tasks.

1.1.3 LSA process. MIL-STD-1388-1 and MIL-STD-1388-2, implements the LSA guidelines and requirements established by DOD Instruction 5000.2, Defense Acquisition Management Policies and Procedures, and DOD Directive 5000.1, Defense Acquisition. This handbook discusses the LSA and LSAR process; contracting for LSA and LSAR; LSAR report selection option and report specifications; LSAR software validation process; LSA Control Number (LCN), Alternate LCN Code (ALC), and Usable On Code (UOC) application in a functional verse physical environment; and an explanation of the data modeling process which was used to develop the relational LSAR data base.

2. REFERENCED DOCUMENTS.

2.1 General. Completion of the LSA process requires use of many related documents from which the appropriate data can be obtained. The specific use of each document is identified in the appropriate chapter or appendix of this handbook. Unless otherwise specified, the following standards and handbooks of the issue listed in that issue of the Department of Defense Index of Specifications and Standards (DODISS), specified in the solicitation form, a part of this standard to the extent specified, herein.

Military Standards.

MIL-STD-335	Manuals Technical Repair Parts and Special Tools List
MIL-STD-470	Maintainability Program for Systems and Equipment
MIL-STD-471	Maintainability Verification/Demonstration/Evaluation
MIL-STD-680	Contractor Standardization Program Requirements
MIL-STD-756	Reliability Modeling and Prediction
MIL-STD-785	Reliability Program for Systems and Equipment Development and Production
MIL-STD-881	Work Breakdown Structures for Defense Materiel Items
MIL-STD-882	System Safety Program Requirements
MIL-STD-965	Parts Control Program
MIL-STD-1366	Transportability Criteria

MIL-STD-1367 Packaging, Handling, Storage, and Transportability Program Requirements for Systems and Equipment

MIL-STD-1379 Military Training Programs

MIL-STD-1388-1 Logistic Support Analysis

MIL-STD-1388-2 DOD Requirements for a Logistic Support Analysis Record

MIL-STD-1390 Level of Repair

MIL-STD-1478 Human Performance Analysis

MIL-STD-1629 Procedures for Performing a Failure Mode, Effect, and Criticality Analysis

MIL-STD-1839 Calibration and Measurement Requirements

MIL-STD-1843 Reliability Centered Maintenance for Aircraft Engines and Equipment

MIL-STD-2073-1 DOD Materiel Procedures for Development and Application of Packaging Requirements

MIL-STD-2073-2 Packaging Requirement Codes

MIL-STD-2097 Requirements for Acquisition of End Items of Support Equipment, Associated Integrated Logistics Support, and Related Technical Data for Air Systems

MIL-STD-2173 Reliability Centered Maintenance For Naval Aircraft Weapon Systems and Support Equipment

Military Handbooks.

MIL-HDBK-217 Reliability Prediction of Electronic Equipment

MIL-H-46855 Human Engineering Requirements for Military Systems, Equipments, and Facilities

Military Specifications.

MIL-T-31000 Technical Data Packages, General Specifications for

MIL-M-38807 Manuals, Techincal: Illistrated Parts Breakdown, Preparation of

MIL-M-49502 Manuals, Technical: Repair Parts and Special Tool List

MIL-M-63036 Manuals, Technical: Operator's, Preparation of (Army)

MIL-M-63038B Manuals, Technical: Organizational or Aviation Unit Direct Support, or Aviation Intermediate, and General Support

Maintenance (Army)

Federal Manuals and Catalogs.

H6-1	Federal Item Name Directory for Supply Cataloging

Other Documents.

AMCP 750-2	Guide to Reliability Centered Maintenance
DARCOM 750-16	DARCOM Guide to Logistic Support Analysis
DARS NO.6	Defense Acquisition Regulation Supplement NO. 6
DOD 4100.38-M	DOD Provisioning and Other Preprocurement Screening Manual
DODD 5000.1	Defense Acquisition
DODI 5000.2	Defense Acquisition Management Policies and Procedures
MTMC PAM 70-1	Transportability for Better Strategic Mobility
MRSAP 700-11	Cost Estimating Methodology for Logistic Support Analysis (CELSA) Guide

(Non-Government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.)

3. DEFINITIONS.

3.1 Assembly. A number of parts or subassemblies, or any combination thereof, joined together to perform a specific function and capable of disassembly (e.g., power shovel-front, fan assembly, audio frequency amplifier). NOTE: The distinction between an assembly and subassembly is determined by the individual application. An assembly, in one instance, may be a subassembly in another where it forms a portion of an assembly.

3.2 Component. An assembly or any combination of parts, subassemblies, and assemblies mounted together normally capable of independent operation in a variety of situations.

3.3 Design Change. An approved engineering change incorporated into the end item which modifies, adds to, deletes, or supersedes parts in the end item.

3.4 End Item. A final combination of end products, component parts/materials which is ready for its intended use, e.g., ship, tank, mobile machine shop, aircraft, receiver, rifle, or recorder.

3.5 LSA. The selective application of scientific and engineering efforts undertaken during the acquisition process, as part of the system engineering and design process, to assist in complying with supportability and other ILS

objectives.

3.6 LSAR. That portion of LSA documentation consisting of detailed data pertaining to the identification of logistic support resources requirements of a system/end item/equipment.

3.7 LSA Candidate. A component, subassembly, assembly, software, or end item/article on which maintenance action is considered feasible as a result of a preliminary or detailed tradeoff analysis.

3.8 LSA Documentation. All data resulting from performance of LSA tasks, conducted under MIL-STD-1388-1, to include LSAR, pertaining to an acquisition program.

3.9 Manufacturers Part Number. See reference number.

3.10 Material Developer. The organization, government or industry, that is overseeing the development of a piece of hardware/software.

3.11 Part. One, two or more pieces, joined together which are not normally subject to disassembly without destruction or impairment of designed use.

3.12 Part Number. See reference number.

3.13 Performing Activity. The organization, government or industry, that is building/designing a piece of hardware/software.

3.14 Reference Number. Any number, other than a government activity stock number, used to identify an item of production, or used by itself or in conjunction with other reference numbers to identify an item of supply. Reference numbers include: manufacturer's part, drawing, model, type, or source controlling numbers; manufacturer's trade name; specification or standard numbers; and, specification or standard part, drawing, or type numbers.

3.15 Repair Part. Material capable of separate supply and replacement which is required for the maintenance, overhaul, or repair of a system, equipment or end item. This definition does not include Support Equipment, but does include repair parts for support equipment.

3.16 Requiring Authority. The organization, government, that has a requirement for a piece of hardware/software.

3.17 Spares. Articles identical to or interchangeable with the end articles on contract which are procured over and above the quantity needed for initial installation for support of a system.

3.18 Subassembly. Two or more parts which form a portion of an assembly or a component replaceable as a whole, but having a part or parts which are individually replaceable (e.g., gun mount stand, window recoil mechanism, floating piston, telephone dial, mounting board with mounted parts, power shovel dipper stick).

3.19 Support Equipment. "Support Equipment" is that equipment required to make an item, system, or facility operational in its intended environment. This includes all equipment required to maintain and operate the item, system, or facility including aerospace ground equipment and ground equipment.

3.20 Support Items. Items subordinate to or associated with an end item, i.e., spares, repair parts, and support equipment.

10. LOGISTIC SUPPORT ANALYSIS AND THE ACQUISITION PROCESS.

10.1 Major Criteria. DOD Directives 5000.l and 5000.2 establish Integrated Logistic Support (ILS) and acquisition policies. Prime factors governing system acquisition programs are cost, schedule, and performance with supportability being a subset of performance. The LSA provides direct supportability and cost factor input for new systems and provides major input to system decisions. Specific criteria and emphasis varies from system to system, but three prime LSA outputs emerge at the level affecting acquisition decisions. These are described below.

10.1.l Manpower and Personnel Constraints. Manpower and skill level requirements are treated as any major design function. Personnel parameters begin with the initial concept. DODI 5000.2, Human System Integration in the Defense System Acquisition Process, sets system manpower estimating requirements. Manpower and personnel requirements are stated as numbers, skills, and skill levels during the design process and may use the manpower and personnel policies of Services.

10.1.2 System Readiness. Design parameters and logistic support resources relate to system readiness objectives and goals. Operational availability, sortie rates (surge/sustained), and percent coverage are wartime factors which are often used for peacetime readiness measurements. System readiness, as an integral part of system performance, must be managed beginning with the earliest conception of new/modified system/equipment.

10.1.3 Cost. Operation and support investment along with other acquisition costs must be considered for any acquisition. Comparison of life cycle cost (LCC) estimates to requirements for alternatives is vital to tradeoff decisions. Cost factors should address resource requirements to achieve specified levels of readiness for given conditions. Uncertainty of resources such as manpower and energy, must be addressed to minimize cost and meet system readiness objectives. The objective is to optimize an acquisition related to system performance, cost, and schedule goals of the system.

10.2 Acquisition Process. Figure 1.1 is an overview of the acquisition process, showing life cycle phases and LSA process decision points. The LSA process has five phases begining with a validated identified requirement. Program initiation documents are then prepared. The Acquisition phases are:

10.2.1 Concept Exploration/Definition (CED) Phase. Alternatives to satisfy the requirement are evaluated and compared in terms of performance, readiness, supportability, schedule, and cost. System level analysis which affect design and operational concepts, readiness, logistics and operational support characteristics are defined. These support the use study and ILS/LSA concept and strategy supportability constraints, of the proposed system. The ILS/LSA products include cost improvement and readiness targets, support concept alternatives, supportability related design and support system objectives.

10.2.2 Demonstration and Validation (D&V) Phase. Concepts now become hardware design. Removal of technical uncertainties in the design are verified and evaluated using advance development models. The ILS/LSA products now include

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firm support concepts, supportability related design goals and thresholds, readiness, and supportability system parameter objectives.

10.2.3 Engineering and Manufacturing Development (EMD) Phase. Validated designs are developed as models or prototypes. Functional/environmental testing verifies design performance requirements. The ILS/LSA effort is maximized to influence maintenance planning and identify detailed logistic support resource requirments and deficiency solutions which are validated by operational testing. Detailed analyses identify preventive/corrective maintenance, calibration, and servicing requirements. Firm logistic support and maintenance plans are developed. Manufacturing procedures, and control techniques are designed for economical mass production.

10.2.4 Production and Deployment (P&D) Phase. A model or prototype developed and optimized during EMD is produced and tested. An effective support base is established and new systems or equipment are readied for deployment and operational use.

10.2.5 Operations and Support Phase. This phase begins after initial fielding and overlaps Prod/Deploy. The ILS/LSA activities include: post production support; correction of quality and safety problems; and new training programs and feedback mechanisms are devised for reduction of readiness and supportability problem areas. The LSAR is maintained and updated during the life cycle of the system/equipment.

10.3 LSA Process. LSA is an iterative, multi-disciplined, process having many interfaces. It can be divided into two general parts: (a) analysis of supportability, and (b) assessment and verification of supportability.

10.3.1 Analysis of Supportability. These analyses affecting design and operational concepts begin at system level; identify gross logistic support resource requirements of alternative concepts; and relate design, operational, and supportability characteristics to system readiness objectives and goals.

10.3.1.1 System Level Analyses. These efforts are characterized by use studies, comparative analysis studies, support driver identification, technological opportunities, tradeoffs analysis, alternative support concepts such as organic versus contractor support, built-in versus external test capability, and varying maintenance levels.

10.3.1.2 System Level Tradeoffs. Analyses of lower indenture levels and support system optimization set by the system level analysis begin. These define logistic support resource requirements of the system using an integrated analysis of all operator maintainer functions and tasks. These are done to determine task frequencies, task times, personnel and skill requirements, and other support requirements, to include all ILS elements.

10.3.1.3 Optimization. This is achieved by allocating functions and tasks to specific maintenance levels, doing repair versus discard and Reliability Centered Maintnenance (RCM) analyses, and formulating design recommendations to optimize maintenance times and logistic support resource requirements. Data developed is used as direct input for products associated with each ILS

element e. g., provisioning lists, personnel and training requirements, and technical manuals. This assures compatibility between ILS element documents and permits common use of data which apply to more than one logistic element.

10.3.2 Assessment and Verification. The process begins with early planning to verify support concepts and is used during the entire life cycle to demonstrate and adjust analysis results and products as required.

10.4 Interfaces. Some major LSA activities and their interfaces which play key roles are listed below:

10.4.1 Comparative Analysis (Task 203). Interfacing activities: human factor, reliability, maintainability, safety, and design engineers and ILS element managers. This task is used to: define a sound, analytical foundation for projecting new system design and supportability features; to identify those which need improvements; identify those cost drivers which support the readiness of the new system; and document risks involved in using the comparative data in subsequent analyses.

10.4.2 Functional Requirements Identification (Task 301). Interfacing activities: design, reliability, maintainability, and human factor engineering, safety and ILS element managers.

10.4.3 Tradeoff Analysis (Task 303). Interfacing activities: design, reliability, maintainability, safety, and human factor engineering, cost estimating, and ILS element managers.

10.4.4 Task Analysis (Task 401). Interfacing activities: reliability, maintainability, human factor, and safety engineering. Performed to analyze required operations, maintenance, and support tasks to identify resources needed for each task; highlight are new or critical tasks, including hazardous materials and their environmental impact; define transportability requirements; identify support requirements which exceed desired goals, thresholds, or constraints; provide data supporting recommended designs which enhance readiness and supportability; and provide source data to develop required documents, i.e., Maintenance Allocation Charts (MAC), Technical Manuals (TM), Provisioning documentation, etc.

Figure 1.2 shows the interfaces and information flow from supporting military standards. Arrows indicate that information developed using one military standard is referenced as input from another standard. A military standard must specifically require information developed using another standard for a relationship to be shown.

For example: Failure Modes, Effects and Criticality Analysis (FMECA) data is developed using MIL-STD-1629, but is also used for analysis purposes in MIL-STD-1388-1A and is documented in MIL-STD-1388-2B; therefore, an arrow leads from MIL-STD-1629 to MIL-STD-1388-1A/2B. MIL-STD-1629 does not require data developed by MIL-STD-1388-1A/2B; therefore, no arrow leads from MIL-STD-1388-1A/2B to MIL-STD-1629.

Review of LSA interfaces should be described in the LSA Plan (LSAP) (Task 102)

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to assure input-output relationships, responsibilities, and timing of activities are properly addressed to prevent over-lap and duplication. Guidance found in subsequent paragraphs will reduce interface problems.

10.4.5 Inputs and Outputs for System Level LSA (Subtask 303.2.3). System level LSA may involve system analysis/engineering at the hardware-operating-support level. It is a collection, synthesis, and "system" analysis of various specialized input. It impacts interface activities by defining boundary conditions or goals of specialized engineering programs and ILS element concepts and plans. Figure 1.3 shows task 303.2.3 relationships.

10.4.6 Refinement and Extension of System Level LSA. As the process is iterated, limits, constraints, and objectives are refined and expanded based on engineering and ILS input. A support system is established with limits and objectives set. Follow-on tradeoffs between engineering specialties and ILS elements are made within established boundaries which include Built In Test (BIT)/Built In Test Equipment (BITE) verse external dignostics (Subtask 303.2.8) and training tradeoffs (Subtask 303.2.6).

10.4.7 Task Analysis Interfaces. LSA includes all task analyses, however, specific areas (e.g., critical maintenance tasks) may be analyzed as part of the human engineering program. Detailed task analyses input such as task frequencies, repair times, safety hazards, and failure effects, are normally developed by reliability, maintainability, and safety specialists.

10.4.8 Resource Requirements Identification. LSA identifies all logistic support resource requirements. This is an iterative process with information being passed between logistics, design and specialized engineering areas. These requirements are summarized in the LSA data base. These requirements are used by ILS managers for development of plans and products.

10.5 Strategy in Developing Analysis Requirements.

10.5.1 General. Cost effective analysis efforts channel available resources to areas offering the greatest benefit to the program. Strategies rely on establishing programs to achieve supportability and support system objectives. They must influence hardware design, support, and logistic support resource requirements. The requirements are translated into specific objectives early in the program when maximum flexibility exists. Objectives are iterated and refined until they are firm program goals/requirements. Developing analysis strategies is difficult due to the number of variables. Possible impact of variables must be addressed during the process when analysis tasks/subtasks are tailored and scheduled to meet milestones. Guidance provided will assist in the tailoring process, however, it must be adapted to specific programs.

10.5.2 Task Selection and Focusing.

10.5.2.1 General. Analysis requirements selection, begining at subtask level, includes a wide range of considerations. Figure 1.4 depicts a general tailoring logic tree useful when selecting tasks. Table 1 lists task/subtask use by development phase and engineering activity. Guidance must be adjusted for each program since program aspects may occur different acquisition phases

for different programs. Initial task/subtask selection is adjusted for: (a) design freedom; (b) time phasing adjustments if program is "fast track"; (c) work already done; (d) data availability/relevancy; (e) time and resource availability; (f) Policy directive (DODI 5000.2) requirements; (g) desired tasks not in the standard; and (h) procurement considerations. Most of these factors tend to reduce or restrict the amount of analysis activity. Additional guidance is provided later in this section.

10.5.2.2 Focusing. After initial subtask selection is completed, further focus is needed to concentrate effort in high leverage areas and to specify other requirements. Focusing considerations should include: (a) Modification or restriction of the subtask to significant areas; (b) Specification of subtasks to allow assignment to the appropriate activity; (c) Specification of models and associated data to be used; and (d) Specification of areas or activity requiring requester approval. RA must be specific when defining analysis needs for tasks and subtasks under the task input specified. Often 10 to 20 percent of system's subsystems control 80 to 90 percent of the total support demands. Some Task 303 evaluations and tradeoffs are very general and benefit from greater detail to focus on key areas. Models and definitions, particularly for LCC, desired for a particular analysis should be specified, if possible, especially if there is competition. Model considerations are discussed in greater depth under procurement considerations. The remainder of this section deals with specific factors considered during development of the LSA strategy.

10.5.3 Factors Impacting Strategy.

10.5.3.1 Type of Program/Change. Program categories are: new programs; planed product improvement (PPI); or "off-the-shelf" programs. Many modifications require redoing or a new approach to some of the analysis work already done. The program type impacts objectives, subtask selection and focusing. For PPI's, analysis objectives may focus on support risks on the altered part, or opportunities to improve the equipment by improving supportability characteristics. New or high technology efforts may increase risk to attain supportability goals. Those risks must be reduced. Using proven technology has less risk and may offer more opportunity to reduce logistic support burdens than a more advanced technology.

These factors greatly impact on initial objective determination. System versus equipment proposals impact subtask selection and focusing. For example, a limited, focused readiness analysis may be appropriate for an equipment contract, while alternative support concepts may be more appropriate for equipment level contracts due to a fixed system support concept.

System readiness objectives may be to "hold the line" or they may be more ambitious. Readiness goals must be a primary management focus beginning with program initiation. If such goals are ambitious, one focus of the early analyses should be toward readiness related system design and support objectives, such as reliability and turn around time.

Systems and equipments having large support personnel demands or high Operations and Support (O&S) costs obviously present greater investment

opportunities for improvement than those with low demands or costs and should receive greater consideration in selecting preliminary analysis objectives.

10.5.3.2 Amount of Design Freedom. The amount of design freedom is related to program considerations such as phasing and is a key factor in subtask election. The objective of most front end analysis subtasks is to influence selection of design characteristics to achieve improvements in readiness, supportability, and cost. For fixed designs, little benefit be derived from doing these tasks. Some of the factors listed in paragraph 10.5.3.1 provide clues in this regard.

Product improvements may limit design freedom to specific subsystems unless areas of no, or minor change are open to redesign opportunity to reduce logistic support burdens.

Fast track programs tend to move up or back various possible analysis subtasks, but fast track programs also tend to use existing technology and plan on preplanned product improvement rather than employ new technology. The point of design freedom thus shifts. Design freedom may exist for the support system but not the mission system. LSA effort and objectives should be focused accordingly.

The LSA objective of causing supportability requirements to be an integral part of system/equipment requirements and design can best be achieved if designers are oriented toward supportability objectives commencing with the design effort.

Technical information documented during the design process, must be provided to designers and logisticians to help identify interface problems between design concepts and operators, maintainers, and support equipment. Technical design information, e.g. electro-mechanical diagnostic features, interfaces, reliability estimates, item functions, and adjustment requirements, which determine supportability are an integral part of design documentation. If there is design freedom, the LSA plan should describe the generation, control, and approval of this type information.

10.5.3.3 Time and Resources Available. LSA requires time and resources to influence design. Do not specify tasks if results will not be available to affect design, or unless improvements can be scheduled as part of a PPI.

Fast track programs reduce time available for design influence analysis tasks. Therefore, some analysis task results should be saved as assets for later use. Design influence LSA requires resources in the form of people and money.

DOD policy is to fund readiness and support considerations upfront, however, resources are constrained in practice. If program funds are short, it may be possible to perform some tasks, such as comparative analysis and driver identification, by using in-house capabilities. If the in house capability is limited but funds are available, some subtasks may be done by "study" contractors having special expertise.

Another approach is to exploit inter-relationships between some tasks and subtasks, e.g., comparative analysis feeds driver identification, which in turn feeds selection of targets for improvement. If only one of these tasks is affordable, targets for improvement would be the logical choice. That approach loses precision since judgments are substituted for hard data on the deleted tasks. It should be used only as a last resort.

10.5.3.4 Work Already Done. Comparative analysis, driver identification and improvement initiatives completed in preparation of other program initiation or other requirements documents should be reviewed. If adequate, it may be updated rather than doing a complete revision. Also, program initiation or other requirements documents may prescribe objectives or constraints which tend to limit the scope of the analysis effort. However, it is essential to test such constraints or objectives and the analysis which supported their specification prior to accepting them as hard data.

10.5.3.5 Past Experience and Historical Data. The availability, accuracy, and relevancy of experience and historical data bases of similar systems is crucial to accomplish some tasks and subtasks. Available data bases must be examined to determine if extensive work is needed to provide focus or relevancy. If not available, a special sample data effort may be considered, particularly if the required data is in an area of possible high leverage.

10.5.3.6 Procurement Considerations. The RA must determine and specify the LSA tasks that will be performed by the government or independent agency, those shared by the government and the developer, and those required of the developer. Once completed, the LSA portion of the contract plan can be developed and work requirements writen into the statement of work (SOW).

Prospective performing activities (PA) must be allowed to recommend adding or deleting LSA tasks and to provide a more detailed subtask definition and schedule. Also, PA should be encouraged to use cost effective data generation procedures. Prospective PA's tailoring process and cost reduction efforts should become a factor in the assessment of their capability to perform the LSA.

Acquisition program objectives must be considered in preparing procurement documents. For example, in a technology demonstration procurement, one may specifically exclude certain LSA task requirements. Supportability objectives in this case would best be served through design influence and generation of an LSA data base for subsequent detailed analysis effort when the technology is utilized. If the acquisition program is oriented to develop and procure a system/equipment, then other LSA tasks become equally important.

The nature of the procurement may force the PA to do some analysis activity in order to make a rational bid. The procurement process offers an excellent opportunity to refine the LSA strategy by involvement of potential performing activities when competition is present. See chapter 2 for further discussion of contracting for LSA.

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10.6 LSA TASK APPLICATION.

10.6.1 LSA DEFINITION. LSA is any analysis that results in a decision on the scope and level of logistic support.

10.6.1.1 LSA Process. The LSA Process consists of:

LOGISTICS - Pertaining to developing, acquiring, testing and providing the elements of support;

SUPPORT - That which sustains, maintains, or preserves intact;

ANALYSIS - A method of examining something to determine its essential features and their relationships;

PROCESS - A planned series of actions directed to some end.

The overall term can then be defined as follows: The LSA PROCESS is a PLANNED TASK SERIES performed to EXAMINE all elements of a proposed SYSTEM to DETERMINE the LOGISTIC SUPPORT required to KEEP that system USEABLE for its intended purpose throughout its intended lifecycle; and to INFLUENCE the DESIGN so that BOTH the SYSTEM and SUPPORT can be PROVIDED at an AFFORDABLE COST.

LSA tasks can be grouped into three generic sets: those which ANALYZE AND SYNTHESIZE, support requirements, those which VERIFY the adequacy of logistic support identified and those required to MANAGE the other tasks. The number of tasks associated with each generic set varies widely and are generally performed in sequence. The MANAGEMENT tasks must begin before the program is formally initiated during the Mission Need Statement (MNS) phase. Developing/planning a strategy for the LSA is the first task performed. Coordination and control tasks continue during the life of the LSA program. Most ANALYTICAL tasks begin during the CED phase and are iterated during all later phases. The amount of information examined and level of detail identified increase with each task iteration. The ANALYZE AND SYNTHESIZE set of tasks can be further divided into three subsets; the system definition (hardware, software and support), the evaluation and tradeoff alternatives, and the identification of required resources.

Initially system level analyze and synthesize tasks are performed to: influence design and operational concepts; estimate gross logistic requirements of alternative concepts; and relate design, operation, and support characteristics to system readiness objectives.

Once the system level tradeoffs are made, emphasis shifts toward optimizing the support system within established system boundaries. As additional data is specified and refined, the analyze and synthesize tasks are iterated for progressively lower indenture levels. Sensitivities to changes in key factors are analyzed and tradeoffs between elements of support are made.

A more detailed identification of the required support resources can then be made. Support resources are optimized by: identifying repair and discard tasks; applying RCM; allocating tasks to specific maintenance levels; and formulating design recommendations to achieve improvements.

Verifying the accuracy and adequacy of the logistic support identified begins early in the process. Testing, evaluating and correcting deficiencies in both the design and the support system continue throughout the life cycle. The validity of the analysis results and attendant data products must be successfully demonstrated within stated confidence levels. Results of formal test and evaluation programs and post deployment assessments are analyzed and corrective actions implemented as necessary.

10.6.2 HARDWARE LEVELS TO WHICH THE LSA PROCESS IS APPLIED.

The LSA process is applied to the System/Subsystem and Subassembly/Component hardware levels. These levels correspond to the amount of information available for examination and the level of detail required to clearly determine and define the desired result. Two of the objectives of the LSA process are to influence the design of a proposed system and identify its logistic support resource requirements. There are two relationships that are significant in meeting these objectives: logistics influence on design is generally initiated at the system/subsystem level and projected downward; and logistic support resource requirements are identifies at the subassembly/component level and summed upward.

Figure 1.5 shows when the opportunity to influence the design logistically is greatest. It also illustrates a point beyond which the opportunity to influence the design is lost. In addition, this figure shows when the actions to identify and update the detailed ILS resource requirements should be taken.

10.6.3 LSA TASKS.

MIL-STD-1388-1A divides the LSA tasks into five general sections:

TASK SECTION 100 - PROGRAM PLANNING AND CONTROL
TASK SECTION 200 - MISSION AND SUPPORT SYSTEMS DEFINITION
TASK SECTION 300 - PREPARATION AND EVALUATION OF ALTERNATIVES
TASK SECTION 400 - DETERMINATION OF LOGISTIC SUPPORT
RESOURCE REQUIREMENTS
TASK SECTION 500 - SUPPORTABILITY ASSESSMENT

Figure 1.6 shows how the three broad generic sets of tasks constituting the LSA process relate to the five general task sections and 15 LSA tasks described in MIL-STD-1388-1A. It also shows the relationship of these LSA tasks to LSAR data tables.

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This section includes a summary of each LSA task as identified in MIL-STD-1388-1A. Each task summary addresses the following topics: Purpose; Required for; When required; Responsibility; Applicable Military Standards; LSA Documentation, for reference information see appendix b ;LSAR Reports, for reference information see appendix b; Products; and Input and Source.

The RA for each of the serivices is: Army is Training and Docturine Command (TRADOC); Air Force is Concept Action Group (user and Product Personnel); Navy is Operations Naval (OPNAV) (Aircraft, Sea, Sub, and Missles); and Marine Corps is Marine Corps Combat Development Command (MCCDC). Each of these RA's have responsibilities for LSA task accomplishment for their respective services. The MD for each of the services is: Army is Army Material Command (AMC); Air Force is Air Force Material Command (AFMC); Navy is Naval Aviation Command (NAVAIR), Naval Sea Command (NAVSEA), Naval Submarine Command (NAVSUB), and Space and Warfare Command (SPAWAR); and Marine Corps is Marine Corp Systems Command (MCSC). PA is the activity actually performing the LSA. It may be either a government organization or industry. It is emphasized that LSA task accomplishment is a cooperative effort between the RA, MD, and PA.

10.6.3.1 TASK 101 - DEVELOPMENT OF AN EARLY LOGISTIC SUPPORT ANALYSIS STRATEGY

PURPOSE: This task is the earliest planning activity for an LSA program. Its purpose is to: develop a proposed LSA program strategy for use early in the acquisition program; and identify the LSA tasks and subtasks which will provide the best return on investment and document the risks of accomplishing these objectives.

REQUIRED FOR: The LSA strategy interrelates with the acquisition strategy and is included in the ILS Plan. It should generally be available prior to preparation of any solicitation document containing LSA task requirements, and should be used as a guide in developing such documents.

WHEN REQUIRED: Initial LSA strategy development is begun in the CED phase concurrent with development of the acquisition strategy. The LSA strategy is generally updated through the (P&D) phase. Required updates should be completed prior to initiation of the next program phase, so that the updated LSA strategy is available concurrent with phase initiation.

RESPONSIBILITY: The RA is responsible for performing Task 101 to provide early management of the LSA program prior to initiation of D & V. The MD assumes responsibility for this task prior to D&V and retains it through P&D.

APPLICABLE STANDARDS: MRSAP 700-11.

LSA DOCUMENTATION: None.

LSAR REPORTS: None

PRODUCTS: Solicitation document and Statements of Work (SOW)

INPUTS AND SOURCE: MNS, Operational requiremetns Document (ORD), Integrated Program Summary (IPS), and Cost and Operational Effectiveness Analysis (COEA) of DODI 5000.2

10.6.3.2 TASK 102 - LOGISTIC SUPPORT ANALYSIS PLAN

PURPOSE: To develop a LSAP which will effectively implement the LSA program. It also documents the LSA management structure and authority; what LSA tasks are to be accomplished; when each task will be accomplished; what organizational units will be responsible for accomplishing each task; how all tasks are integrated and how results of each task will be used.

REQUIRED FOR: The LSAP is a basic tool for establishing and executing an effective LSA program to meet the system and logistic requirements. When it is submitted as part of the response to a solicitation document, it is used in the source selection process.

WHEN REQUIRED: The LSAP is generally prepared in CED and is updated in all subsequent phases.

RESPONSIBILITY: During CED, the RA is responsible for initial preparation of the LSAP. The MD assumes responsibility for updating the LSAP prior to D&V and retains LSAP responsibility during subsequent phases. The MD assess and verifies for completeness of all subtasks accomplished by the PA.

APPLICABLE STANDARDS: MIL-STD-881.

LSA DOCUMENTATION: None.

LSAR REPORTS: None

PRODUCTS: Management structure; what LSA tasks/subtasks are done, when, by whom, and how integrated; LSA schedules an their relationship to other schedules; system engineering interfaces; Data exchange; Work Breakdown Structure (WBS) for LSA Candidate list; LCN numbering system; Government Furnished Equipment/Government Furnished Information (GFE/GFI); and Review Procedures.

INPUTS AND SOURCE:

10.6.3.3 TASK 103 - PROGRAM AND DESIGN REVIEWS

PURPOSE: To provide for timely LSA program participation in the official review and control of design information; the scheduling of detailed LSA program reviews; and logistic risk assessments at program reviews. It also ensures that all pertinent aspects of the LSA program are addressed as an integral part of all formal program and design reviews.

REQUIRED FOR: These procedures for the review of design information from a support standpoint within the performing activity provide logistic support specialists a mechanism for accomplishing design influence and tradeoffs. LSA

program reviews include but are not limited to ILS management team meetings, reliability program reviews, maintainability program reviews, technical data reviews, test integration reviews, and provisioning reviews. They aid in monitoring the overall progress, quality, and consistency of the LSA effort.

WHEN REQUIRED: Program and design reviews are generally initiated during CED and are scheduled periodically throughout subsequent phases.

RESPONSIBILITY: The RA is responsible for Task 103 during CED. The MD assumes responsibility during D&V and subsequent phases. The PA has responsiblity for setting up and conducting the reviews.

APPLICABLE STANDARDS: None.

LSA DOCUMENTATION: None.

LSAR REPORTS: None

PRODUCTS: Program Reviews, LSA Reviews, Design Review, and Provisioning Reviews.

INPUTS AND SOURCE:

10.6.3.4 TASK 201 - USE STUDY

PURPOSE: To identify support factors related to the system's intended use. Also, to document quantitative data results (e.g. target audience description) which must be considered when developing support alternatives.

REQUIRED FOR: Quantitative support factors (operating requirements, transportation modes/times, allowable maintenance periods, and environmental requirements which include hazardous materials, hazardous waste, and other pollutants) identified by the use study are incorporated in the IPS/ORD.

WHEN REQUIRED: The Use Study is a PREREQUISITE to all other analysis tasks; therefore, it should be initiated in the CED phase. Updates of the use study are generally applicable through EMD. Once planned operational and support environments of the new system are identified, visits to existing units and depots which simulate those environments can provide significant input into use study updates.

RESPONSIBILITY: Task 201 is the responsibility of the RA through D&V. The MD has update responsibility during EMD.

APPLICABLE STANDARDS: None.

LSA DOCUMENTATION: LSAR Data Tables AA, AB, AC, AD, AE, AF, AG, AH, JA, JB, and JE.

LSAR REPORTS: LSA-003, 023, 075, and 085

PRODUCTS: ORD, Support Alternatives

INPUTS AND SOURCE: None.

10.6.3.5 TASK 202 MISSION HARDWARE, SOFTWARE AND SUPPORT SYSTEM STANDARDIZATION

PURPOSE: To define support and support related design constraints based upon support standardization considerations. It also provides support related input to mission hardware and software standardization efforts.

REQUIRED FOR: Initial task results support the IPS. Results of further iterations of this task are used in the ORD and development specification.

WHEN REQUIRED: Task 202 is initiated in the CED phase to establish support system standardization requirements for the system/end item level prior to beginning the design effort. This task is iterated at progressively lower hardware levels through EMD. During the P&D phase, Task 202 is generally applicable to design changes only.

RESPONSIBILITY: The RA is responsible for task 202 during MNS and CED. During D&V and subsequent phases, the MD is reponsible for this task. Data required for the latter part of Task 202 is normally provided by the standardization program and the parts control program. Coording these programs is required to avoid duplication of effort.

APPLICABLE STANDARDS: MIL-STD-680 and MIL-STD-965.

LSA DOCUMENTATION: None.

LSAR REPORTS: None

PRODUCTS: Determine benefits/risks if used, Define resultant design constraints, Provide support related input to standardized efforts, Recommend standardization approached, and Participate in standardization efforts.

INPUTS AND SOURCE: None.

10.6.3.6 TASK 203 - COMPARATIVE ANALYSIS

PURPOSE: This task will: define an analysis base needed to project new system design and supportability features and identify those needing improvement; identify features driving cost, support, and readiness of the new system; and document risks impacting comparative data in subsequent analyses.

REQUIRED FOR: Initial results are used to develop supportability factors needed for the Organizational and Operational (O&O) Plan and ORD. Results of later analyses are included in the ORD and development specification. Task results are also used to develop LSA input required for logistic support modeling techniques.

WHEN REQUIRED: Supportability factors for the IPS are identified during the CED phase and analysis reports are updated through the EMD phase.

RESPONSIBILITY: The RA is responsible for Task 203 during the MNS and CED phases. The MD is responsible for Task 203 during D&V and EMD.

APPLICABLE STANDARDS: None.

LSA DOCUMENTATION: Place comparative Reliability, Avalability, and Maintainability (RAM) data in LSAR data tables BD and BE. Existing facility data is placed in data tables FA, FB, and FC.

LSAR REPORTS: LSA-012 and 023.

PRODUCTS: None.

INPUTS AND SOURCE:

10.6.3.7 TASK 204 - TECHNOLOGICAL OPPORTUNITIES

PURPOSE: To identify state-of-the-art technology advancements and design approaches having opportunities to achieve system support improvements. Available technology is used to improve projected safety, cost, support, and readiness values, which reduce a new system's environmental impact, and resolve qualitative support problems or constraints identified.

REQUIRED FOR: Recommended design objectives and risks identified by task 204 are included in the IPS. Updated design objectives are incorporated in the ORD and development specification.

WHEN REQUIRED: Task 204 is generally initiated during CED and updated during D&V. The task is selectively applicable during EMD.

RESPONSIBILITY: The RA is responsible for Task 204 during CED, with the MD assuming task responsibility during D&V and during EMD when applicable.

APPLICABLE STANDARDS: None.

LSA DOCUMENTATION: None.

LSAR REPORTS: None.

PRODUCTS: None.

INPUTS AND SOURCE: None.

10.6.3.8 TASK 205 - SUPPORTABILITY AND SUPPORTABILITY RELATED DESIGN FACTORS

PURPOSE: To quantify operations and support characteristics of alternative design and operational concepts; and support related design objectives, goals and thresholds and constraints; and environmental impact factors to support requirement/decision/program documents and specifications.

REQUIRED FOR: Input to the IPS, ORD, and development specification. The

translation of these support related design objectives, goals and thresholds

into support requirements for inclusion in specifications is a critical element of this task.

WHEN REQUIRED: Task 205 normally begins during CED and is updated during D&V. Subtask 205.2.5 (Specification Requirements) normally applies through EMD. Subtask 205.2.7 (Supportability Goals and Thresholds) is only applicable during D&V.

RESPONSIBILITY: The RA is responsible for Task 205 during CED. The MD assumes task responsibility during D&V and subsequent phases.

REFERENCES: None.

LSA DOCUMENTATION: Documentation is recorded in LSAR Data Tables AA, AB, AC, AD, AE, AF, AG, AH, AI, AJ, GA.

LSAR REPORTS: LSA-003, 023, 075, 076, 077.

PRODUCTS: ORD and Specifications.

INPUTS AND SOURCE: None.

10.6.3.9 TASK 301 - FUNCTIONAL REQUIREMENTS IDENTIFICATION

PURPOSE: To identify missions (e. g., shoot, move, communicate) maintenance, and support (transport, maintain, dispose) functions that must be performed for each system/equipment alternative in the intended environment. It also identifies requirements for operations, maintenance and support, environmental considerations and documenting task performance requirements in a task inventory.

REQUIRED FOR: Identification of functional requirements and risks involved in meeting them are included in the ORD. Detailed operations and maintenance task identification and the formulation of design alternatives are normally included in IPS of the ORD.

WHEN REQUIRED: Task 301 usually begins in CED Phase. Subtasks 301.2.4 (Operations and Maintenance (O&M) Tasks) and 301.2.5 (Design Alternatives) may be deferred to the D&V phase. Applicable subtasks are updated during EMD. During Production and Deployment (P&D), Task 301 is generally only applicable to design changes.

RESPONSIBILITY: The RA is responsible for Subtask 301.2.1 (Functional Requirements) during CED. The MD assumes responsibility for all other subtasks applicable during CED and subsequent acquisition phases. All subtasks require major RA and MD input. The MD assess and verifies for completeness of all subtasks accomplished by the PA.

APPLICABLE STANDARDS: MIL-STD-1390/-1629/-1478.

LSA DOCUMENTATION: LSAR Data Tables AA, AB, AC, AD, AE, AG, BA, BB, BC, BD, BE, BF, BG, BH, BI, BJ, BK, BL, CA, CB, CC, CD, CE, CF, CG, CH, CI, GA, and XI.

LSAR REPORTS: LSA-001, 003, 004, 005, 006, 007, 008, 011, 012, 013, 014, 016, 018, 019, 023, 024, 027, 033, 037, 050, 056, 058, 065, 070, 071, 072, 074, 075, 076, 077, and 078.

PRODUCTS: FMECA report, RCM report, RAM report

INPUTS AND SOURCE: None.

10.6.3.10 TASK 302 SUPPORT SYSTEM ALTERNATIVES

PURPOSE: To establish support system alternatives for evaluation, tradeoff analysis, and determination of the best system to be developed.

REQUIRED FOR: These alternative support system concepts/plans and associated risks are addressed in the ORD and IPS. As tradeoffs are made, support system alternatives are refined, updated and included in the ORD and IPS.

WHEN REQUIRED: Those subtasks which establish support system alternatives and risks are required during CED. Subtasks which provide for alternative support plans and updates are generally applicable in EMD.

RESPONSIBILITY: The MD, with major support from the RA, is responsible for all applicable Task 302 subtasks, during CED and subsequent life cycle phases. The MD assess and verifies for completeness of all subtasks accomplished by the PA.

APPLICABLE STANDARDS:

LSA DOCUMENTATION: A, B, C, and F LSAR data tables, as applicable.

LSAR REPORTS: None.

PRODUCTS: None.

INPUTS AND SOURCE: None.

10.6.3.11 TASK 303 - EVALUATION OF ALTERNATIVES AND TRADEOFF ANALYSIS

PURPOSE: To determine the preferred support system alternative(s) and their associated risks for each proposed system; and to determine, through tradeoff analysis, the best approach to satisfying the need (the one that provides the best balance between risk, cost, environmental impact, schedule, performance, readiness and support).

REQUIRED FOR: Logistic influence on design is achieved by including early tradeoff analysis results in requirements documents (IPS and ORD), program documents (ILSP), and subsequently into the decision documents (IPS). Results of later tradeoff analyses are incorporated in the ORD and development specification.

WHEN REQUIRED: Task 303 is generally initiated during CED, with the exception of Subtask 303.2.7 (Level of Repair Analysis (LORA)) which is generally applicable during D&V. Both system and support system tradeoffs continue to be iterated through EMD; other key tradeoffs are only selectively applied during EMD.

RESPONSIBILITY: The RA is responsible for all applicable subtasks during CED; however, major MD support is required. The MD then assumes responsibility for all subtasks during D&V and, as applicable, during subsequent phases. The MD assess and verifies for completeness of all subtasks accomplished by the PA.

APPLICABLE STANDARDS: MIL-STD-1478.

LSA DOCUMENTATION: LSAR Data Tables AI, AJ, AK, HG, and XA

LSAR REPORTS: None.

PRODUCTS: LORA report

INPUTS AND SOURCE: None.

10.6.3.12 TASK 401 - TASK ANALYSIS

PURPOSE: To analyze operations, maintenance, and support tasks; identify resources required for each task; highlight new or critical resource requirements, including hazardous materials and environmental impact; define transportability requirements; identify support requirements meeting established goals/thresholds/constraints; provide supporting data for recommended design alternatives which enhance supportability or readiness; and provide data to develop required documents, i.e., MAC's, TM's, Provisioning documentation, etc.

REQUIRED FOR: Task analysis, when properly interfaced with system engineering disciplines and other ILS functional element inputs, effectively integrates/translates these inputs into ILS documentation output products.

WHEN REQUIRED: The overall program schedule, level of design and operation definition govern the timing and scope of the task analysis. The time period during which performance of this task can be cost effective is limited. It begins with availability of required input from design activities, and extends only to that point which allows time for analysis results to be used to develop ILS documents and acquire the identified support resources. Selective use of this task during D&V should be limited to identification/documentation of new/critical resources. Task 401 is generally applicable during EMD.

RESPONSIBILITY: The MD is responsible for detailed task analysis during EMD. The MD assess and verifies for completeness of all subtasks accomplished by the PA.

APPLICABLE STANDARDS: MIL-STD-335(TM), MIL-STD-470, MIL-STD-785, MIL-STD-882, MIL-STD-1367, MIL-STD-1478, MIL-STD-2073-1A, MIL-STD-2073-2A, MIL-H-46855, MIL-M-49502, MIL-M-63036(TM), and MIL-M-63038(TM).

LSA DOCUMENTATION: All LSAR data tables as applicable, except the A LSAR data tables.

LSAR REPORTS: All reports are applicable. Draft options should be used for those reports that have draft options until the end of EMD phase. At that time data development should be near completion and proof reports should be developed.

PRODUCTS: MAC, Repair Parts and Special Tool List (RPSTL), Indentured Parts Breakout (IPB), Stockage lists type III and IV, Preventive Maintenance Checks and Service (PMCS), AF and Navy Maintenance plans, Components of End Items List (COEIL), Basic Issue Items List (BIIL), Additional Authorization List (AAL), Expendable/Durable Supplies and Materials List (ESML), Support Equipment recommendations Data (SERD), Support Equipment (SE) Candidate List, Calibration and Measurement Requirements Summary (CMRS) report, Defense Logistics Services Center (DLSC) screening, Provisioning Technical Documentation (PTD), Bill of Materials, Provisioning Parts List, Spares Acquisition Integrated with Production (SAIP), Task Analysis, Task Inventory List, Manpower Requiremnents Criteria (MARC) Report, Manprint Report, Joint Maintenance interservice data, Packaging data requirements.

INPUTS AND SOURCE: None.

10.6.3.13 TASK 402 - EARLY FIELDING ANALYSIS

PURPOSE: To assess new system impact on current systems by identifying risk levels surrounding system performance/supportability; sources of manpower/personnel skills to meet new system requirements; the impact of not obtaining necessary logistic support resources; and determine combat essential logistic support resource requirements.

REQUIRED TO: Assure the new system is fielded with all required resources.

WHEN REQUIRED: This task analysis is conducted during the EMD phase.

RESPONSIBILITY: The MD is responsible for early fielding analysis during EMD. This analysis should be coordinated with and confirmed by the RA. The MD assess and verifies for completeness of all subtasks accomplished by the PA.

APPLICABLE STANDARDS: None.

LSA DOCUMENTATION: None.

LSAR REPORTS: None.

PRODUCTS: Early Fielding Report.

INPUTS AND SOURCE: None.

10.6.3.14 TASK 403 - POST PRODUCTION SUPPORT ANALYSIS

PURPOSE: To correct potential post production support problems prior to closing production lines and to develop a plan to ensure effective support of the system during its life cycle. Post production support plan should identify single/dual source items and those for which the government has no data rights. Plans should include available organic support assets, production line buy-out, or contractor logistic support agreements.

REQUIRED FOR: Plans should document identified problems (e.g., inadequate sources of supply/repair); analyze alternative solutions, their associated costs and risks; and outline estimated funding and actions required to implement the preferred solution(s).

WHEN REQUIRED: Task 403 is only applicable during the P&D phase.

RESPONSIBILITY: The post production support analysis is the responsibility of the MD during production. The MD assess and verifies for completeness of all subtasks accomplished by the PA.

APPLICABLE STANDARDS: Defense Acquisition Regulation Supplement (DARS) No. 6.

LSA DOCUMENTATION: None.

LSAR REPORTS: None.

PRODUCTS: None.

INPUTS AND SOURCE: None.

10.6.3.15 TASK 501 - SUPPORTABILITY TEST, EVALUATION, AND VERIFICATION

PURPOSE: To assess achievement of support parameters specified; identify reasons for deviations from projections; and recommend changes to correct deficiencies and improve system readiness.

REQUIRED FOR: The formal Test and Evaluation (T&E) program. This task is used to develop a strategy for testing the support parameters of a system which are input to the system T&E Master Plan (TEMP). Criteria are established to identify test resources, procedures and schedules required to meet TEMP input objectives; and to analyze T&E results, develop corrective action, and update the support plan and LSAR. Post-deployment supportability assessment is obtained by analyzing the operational system maintenance and supply data.

WHEN REQUIRED: Subtask 501.2.1 (T&E Strategy) usually begins during CED.

Development of the System Support Package (SSP) component list (Subtask 501.2.2), establishment of T&E program objectives and criteria (Subtask 501.2.3), and updates/corrective actions (Subtask 501.2.4) are generally applicable during D&V and EMD. Subtasks 501.2.5 and 501.2.6, which involve post deployment supportability assessment, only apply during EMD and P/D.

RESPONSIBILITY: The MD has primary responsibility for Task 501 in all applicable life cycle phases. However, supportability testing issues are developed in coordination with the RA. The MD is responsible for technical test (TT) and for coordinating preparation of the TEMP. Test and Evaluation Commands for each of the services are responsible for user test (UT) and preparation of that portion of the TEMP. The MD assess and verifies for completeness of all subtasks accomplished by the PA.

APPLICABLE STANDARDS: MIL-STD-471.

LSA DOCUMENTATION: All LSAR data tables as applicable.

LSAR REPORTS: All reports as applicable.

PRODUCTS: All products as applicable.

INPUTS AND SOURCE: None.

10.6.4 LSA TAILORING PROCESS. The LSA effort must be tailored to meet the objectives of the specific acquisition program in a cost effective manner. Tailoring is accomplished through the selective application of analysis requirements at the subtask level. Some of the considerations which must be addressed in the tailoring process include: type of program, amount of design freedom, time and resource available, work already done, past experience/historical data, and acquisition strategy. Additional guidance on these factors is provided in Appendix A of MIL-STD-1388-1A.

10.6.5 LSA AND THE MANAGERIAL FUNCTIONS. Actions required to MANAGE the LSA process include, to some degree, all of the functions of the manager, i.e.: PLANNING which identifies LSA objectives and schedules the actions required to achieve them. Planning is also decision making as it involves selecting among alternatives. ORGANIZING which involves establishing an LSA organization structure; identifying LSA tasks/subtasks; assigning tasks to specific organizational units; delegating authority; and providing for coordination of authority relationships both within the LSA program structure and with related program structures. STAFFING which involves manning and keeping manned the technical and management positions identified in the organization structure. DIRECTING which provides motivation, communication, and leadership. CONTROLLING which measures performance, corrects negative deviations, and assures accomplishment of plans.

10.6.5.1 PLANNING AND CONTROLLING. Planning and controlling the LSA program is significantly aided by a time-event network analysis such as Program and Evaluation Review Technique (PERT). Management oriented summaries generated by the LSAR Automatic Data Processing (ADP) system are useful in assessing the achievement of established objectives and identifying problem areas.

10.6.5.2 COORDINATION. Good coordination solves problems as they occur; excellent coordination anticipates and prevents problems. Effective coordination of the LSA program with related program elements will identify mutual interests, maximize the benefits of mutually supporting tasks, and

prevent duplication of effort.

10.7 ILS, LSA, LSAR, AND SYSTEM ENGINEERING. LSA is a design analysis tool which is employed as part of the ILS program. The LSA strategy which summarizes accomplished LSA tasks outputs and projects LSA task requirements for succeeding program phases is documented in the ILS Plan. LSA program management and technical resources requirements, plan, procedures, schedules, and controls identified in the LSA Plan are incorporated in the overall ILS Program planning, scheduling, and funding.

LSA as an integral part of system engineering, provides initial determination and establishment of supportability criteria as input to system design; and evaluation of alternatives and tradeoff analysis between support alternatives; and between support, design and operational alternatives.

Links between the LSA program, system engineering, and other related discipline programs are described in the LSA Plan. The input-output relationships must be defined, specific responsibilities assigned, and interfacing activities properly scheduled.

The system level LSA outputs impact interfacing activities by setting conditions and goals for specific engineering efforts and ILS element plans.

When data from other system engineering related disciplines programs can be sourced for LSA tasks or vice versa, data requirements must be coordinated and combined to prevent costly duplication of effort.

Figure 1.7 lists LSAR data tables used to record, store and process data used in the LSA program, but is generated by other disciplines.

Figure 1.8 describes the LSA process flow which shows the input of other engineering/related disciplines programs, the information developed from the LSA analysis, and the output of the LSA and ILS programs.

The results of analyses from other system engineering/related discipline programs can be used as source data for LSA tasks or vice versa. The LSA tasks and other disciplines are used to develop the LSAR. The LSAR is a depository of this information integrated in way as to provide support information on the system/equipment.

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10.8 LSA DOCUMENTATION

10.8.1 LSA Information. LSA documentation encompasses all information developed as a result of performing the tasks identified in MIL-STD-1388-1A. The hardware level covered by the LSA documentation should equal, but not exceed, that developed and documented as a result of the system engineering/design process. The LSA documentation is to serve as the primary source of design related logistic support data for a system acquisition. It is to provide a clear audit trail of actions taken and decisions made. Actions, decisions and resultant products relating to logistic support of the system are to be based on, and supported by, the LSA documentation.

10.8.2 Updates. Changes in program concepts, requirements or schedules are to be incorporated as they occur. The LSA documentation is to be updated as data is specified, refined, tested, validated, and corrected. Procedures for configuration control of LSA documentation are to be established to ensure that updates are properly coordinated and approved

10.8.3 LSAR. The LSAR is a subset of the LSA documentation. The LSAR is that data set which provides for the documentation of detailed engineering and logistic support requirements data generated by the LSA process. Standard requirements, data element definitions, LSAR data tables format, and LSAR standard reports are prescribed in MIL-STD-1388-2B.

10.8.3.1 LSAR Documentation Process. Figures 1.9 thru 1.12 illustrates the LSAR data documentation process. Figure 1.9 illustrates the overall process, looks very messy doenst it, but it isnt reallly. The fist step is the docuemtnation the O & M requirements (A data tables). The specifications, studies, and requirements can be used to develop much of the "A" data tables and to start the design process on the system/equipment. The design process and its related drawings are used by the logistician in the development of the LCN structure, provisioning information, failure modes effects and criticality analysis, and transportation related information. All of this information is input in to the LSAR. The analysis of this information will then be used by both the design engineer and the logistician, by means of the different tradeoff analyses, to then make changes to the design of the system. The LCN structure is first entered into the LSAR through the "X" tables. These tables establish among others the End Item Acronym Code and its associated LCN Indentured Items, figure 1.10. The LCN structure will provide the basis for tracking of the system as it is analyzed and documented for each of its supportability considerations. The drawings are used in conjunction with the LCN structure to develop the "B" data tables. These tables are the RAM, FMECA, and Maintainability analyses for supportability, figure 1.11. FEMCA and RCM are used to identify the areas for which a maintenance task must be accomplished for the system to meet its intended goal(s). Task analysis is documented within the "C" data tables. This analysis identifies many of the supportability areas which need to be addressed for the system to meet its intended goals. The supportability areas which may be identified are Provisioning ("H" Tables), Skills ("G" Tables), Facilities ("F" tables), and Support Equipment ("E" and "U" Tables), figure 1.12.

10.9 LOGISTIC SUPPORT ANALYSIS RECORD (LSAR).

10.9.1 PURPOSE. The purpose of the LSAR is to provide a uniform, organized, yet flexible, technical data base which consolidates the engineering and logistics data necessary to identify the detailed logistic support requirements of a system. The LSAR data base is used to determine the impact of specific design features on logistic support; determine how the proposed logistic support system affects system RAM characteristics; influence the design; provide input data for tradeoff analyses, life cycle cost studies, and logistic support modeling; exchange valid data among functional organizations; provide source data for the preparation of logistic products.

10.9.2 LSAR DATA PROCESS. As illustrated in the preceding section, the LSA process is conducted on an iterative basis through all phases of the life cycle. The LSAR, as a subset of the LSA documentation, documents the detailed logistic support requirements data generated by the LSA process. The LSAR data resulting from each iteration of the LSA tasks are used as input to follow-on analyses and as an aid in developing logistic products.

10.9.3 MANUAL VERSES AUTOMATED LSAR. The LSAR data may be maintained manually on the LSAR data tables or equivalent format approved by the RA. Automation of the LSAR data is not mandatory but should be a consideration in tailoring the LSAR data effort. Other factors to be considered in selecting an automated LSAR versus a manual LSAR include schedules and funds, complexity of hardware, life cycle phase, design stability, compatibility with other LSARs, and RA involvment.

10.9.4 LSAR DATA TAILORING PROCESS. The extent, and consequently the cost, of LSAR input and outputs required to document and support the LSA process varies with each program. The type of LSAR data effort is initially determined by the life cycle phase of the program. LSAR is applicable during the CED and is used to document gross requirements identified as a result of system/subsystem level LSA tasks performed on initial design approaches early in the program life cycle. During this phase, the LSAR's content is carefully selected from the standard LSAR data record input data to provide the minimum essential data elements necessary to document alternatives and influence the selection of design and support approaches. It may also be tailored to provide a projection of spares costs and schedules. D&V, EMD and P&D Phases: The LSAR effort during these phases must be carefully tailored based upon: LSA tasks/subtask selection; Other engineering related analysis efforts; and Requirements for logistic products. Figure 1.13 portrays a simplified LSAR data decision logic diagram to be followed in commpleting the LSAR Data Selection Sheets, DD Form 1949-3.

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10.10 LSAR DATA TABLES AND REPORTS.

10.10.1 General. The LSAR data tables and data element definitions are prescribed in Appendix A and E of MIL-STD-1388-2B. The LSAR reports and their layouts, selection options and data table development requirements for each report are described in appendix B of MIL-STD-1388-2B and are also decribed in chapter 3 of this document. Appendix b of this document provides: comparison of MIL-STD-1388-2A and 2B reports; LSAR data tables, table codes and table titles; LSAR report numbers and their titles; and a cross reference of table to reports. To summarize the information provided in these appendices, this section addresses the following topics for each LSAR functional data table area: Description; Hardware indenture level relationship; When required; Data source, Functional responsibility/interface requirements; Primary LSAR reports and their intended use.

10.10.2 CROSS FUNCTIONAL REQUIREMENT

DESCRIPTION: The "X" data tables have attributes which cross multiple functional areas or link various functional data tables. These tables include: Functional and physical LCN breakdown, LCN, ALC, and UOC assignment, TM identification, and government provided LSA modeling information.

HARDWARE INDENTURE LEVEL RELATIONSHIP: "X" data table information will be used at any indenture level since it establishes the major keys for entry/storage of data in all functional area tables.

WHEN REQUIRED: The "X" data tables are prepared as a result of any information needed for the LSAR.

DATA SOURCE, FUNCTIONAL RESPONSIBILITY/INTERFACE REQUIREMETNS: Information in portions of the "X" tables are provided by the RA and may be included with solicaitation, or addressed at the LSA/LSAR guidance conference. This information is used to document supply, maintenance, and personnel data in support of tradeoff analysis. The MD assess and verifies for completeness of these data tables accomplished by the PA.

PRIMARY LSAR REPORTS AND INTENDED USE: Data documented in these tables do not have a specific LSAR report associated with them, but the information is needed for each of the other data tables and are needed for all of the output reports.

10.10.3 OPERATION AND MAINTENANCE (O&M) REQUIREMENTS

DESCRIPTION: The "A" data tables consolidates information related to the planned operation of the system, its maintenance and operational environment, and allocation of system maintnance requirements.

HARDWARE INDENTURE LEVEL RELATIONSHIP: A separate series of "A" Data tables are prepared for the system and for each subsystem for which maintenance requirements are to be imposed, including GFE/GFI.

WHEN REQUIRED: Initial operation and maintenance information to be documented on the "A" data tables should be developed during the MNS iteration of LSA Task 205. The "A" data tables should be completed during CED as a result of subsequent iterations of this task, particularly LSA Subtask 205.2.5 (Specification Requirements). The "A" data tables data must be available prior to or concurrent with initiation of LSA Task 301 (Functional Requirements) in the CED phase.

DATA SOURCE, FUNCTIONAL RESPONSIBILITY/INTERFACE REQUIREMENTS: Data for the "A" data tables is normally developed by the RA and MD. This data is provided by the RA and MD to the PA and should be available in applicable program requirement documents.

PRIMARY LSAR REPORTS AND INTENDED USE: "A" data tables document the operational and maintenance concepts and supportability and supportability related design constraints. LSAR Report LSA-003, Maintenance Summary, is used to compare current status of system maintenance parameters with the requirements recorded on "A" data tables, so that timely corrective action can be initiated during development of the detailed maintenance plan. The LSA-023, Air Force Maintenance Plan, part 1 of this report is used to identify the required O&M constraints verses part 2 of the report which shows the acheived O&M aspects of the system.

10.10.4 ITEM RELIABILITY, AVAILABILITY, AND MAINTAINABILITY REQUIREMENTS; FAILURE MODE EFFECTS AND CRITICALITY ANALYSIS; AND, MAINTAINABILITY ANALYSIS

DESCRIPTION: "B" data tables describes the function of each item under analysis, outlines the maintenance concept to be utilized and identifies any design conditions/coniderations imposed on the system. In addition, the "B" data tables summarizes RAM characteristics; provides for evaluation of logistic considerations impacting RAM; documents results of the application of RCM logic and narrative information pertaining to RCM; and provides for narrative related to any potential system redesign. Also, "B" data tables accommodate the Failure Modes and Effects Analysis (FMEA), the criticality and maintainability analyses as described in Tasks 101, 102, and 103 of MIL-STD-1629, respectively. The FMEA documents the effects of an item failure upon system operations and is used to classify each potential failure according to the severity of those effects. The "B" data tables will also accommodate the Damage Mode and Effects Analysis to be utilized for survivability and vulnerability assessments as described in Task 104 of MIL-STD-1629. The purpose of the criticality analysis is to rank each identified failure according to the combined influence of severity classification and the failure probability of occurrence. The maintainability analysis serves as the starting point for the maintenance task analysis to be documented in the "C" data tables.

HARDWARE INDENTURE LEVEL RELATIONSHIP: Initially the "B" data tables are prepared to an indenture level sufficient to support the allocation of RAM parameters and quantitative reliability and maintainability parameters. During EMD, additional "B" data tables are completed for lower indenture levels of the system to include each reparable item.

WHEN REQUIRED: "B" data tables should be completed as a result of LSA Subtask 301.2.4 (Operation and Maintenance Tasks). This subtask is only selectively applicable during CED and may be deferred to the D&V phase. It must be available prior to or concurrent with the analysis of LSA Task 401 (Task Analysis).

DATA SOURCE, FUNCTIONAL RESPONSIBILITY/INTERFACE REQUIREMENTS: The functional requirements of the system documented on the "B" data tables are identified through the function analysis step of the system engineering process (LSA Subtask 301.2.1) initiated by the RA during CED. LSA Subtask 301.2.4, which includes FMECA and RCM analysis, is the responsibility of the MD usually during D&V. The MD assess and verifies for completeness of these subtasks and data tables accomplished by the PA. When the FMECA requirements of this subtask are included as part of the Reliability program, coordination of the interfaces with the LSA program becomes a critical management function. Timing of the FMECA, level of detail and documentation requirements must be integrated with the LSA program requirements to ensure timely availability of the FMECA results as inputs to subsequent LSA tasks.

PIMARY LSAR REPORTS AND INTENDED USE: The "B" data tables provide input to a number of reliability and maintainability oriented summary reports. LSA reports LSA-003, 023, 050, 056 and 058 are used to assess the achievement of R&M goals, to indicate the need for corrective action when specified requirements are not being met, to identify high risk items and facilitate the evaluation of design features, to identify potential candidates for RCM analysis or design review, and aid in evaluating the effectiveness of preventive maintenance (PM) tasks. The LSA-056 report can be used in lieu of FMECA worksheets.

10.10.5 TASK ANALYSIS, PERSONNEL AND SUPPORT REQUIREMENTS.

DESCRIPTION: These tables summarize O&M data which consolidate O&M tasks for reparable assemblies. They also list support requirements (training equipment, facilities, tools, and support equipment); and identify task performance factors for skill positions required to operate/maintain the system. These data tables result from analysis of RCM, maintainability, and maintenance tasks. The "C" tables provide detailed, step-by-step procedures for performance of tasks listed on the Task Summary, to include specific skill specialty requirements, and applicable task manhours per skill specialty. These tables also provide data needed to develop technical manuals, training programs of instruction, supply support, and personnel requirements.

HARDWARE INDENTURE LEVEL RELATIONSHIP: The "C" data tables are initially prepared to the same indenture level as the "B" data tables. During D&V the "C" data tables are prepared for all new or critical tasks identified. During EMD, the "C" data tables are completed for all significant operation, maintenance and support tasks identified by the task analysis.

WHEN REQUIRED: The "C" data tables are initiated during D&V as part of LSA Subtask 301.2.4 (O&M Tasks). Data resulting from LSA Subtask 401.2.1 (Task Analysis) are also documented in the "C" data tables selectively during D&V and completely during EMD. Although LSA Task 401 can be selectively applied

during D&V, it is generally not applicable until EMD. Results of LSA Tasks 205 and 301 are required as input to LSA Task 401 and for completion of "C" data tables.

DATA SOURCE, FUNCTIONAL RESPONSIBILIY/INTERFACE REQUIREMENT: LSA Subtasks 301.2.4 and 401.2.1 are the responsibility of the MD. Completion of "C" data tables are largely a maintenance engineering function based upon efforts documented in the "B" data tables. However, the requiring authority is responsible for LSA Subtasks 205.2.7 and 301.2.1 which are required as input to these subsequent analysis tasks. The MD assess and verifies for completeness of these subtasks and data tables accomplished by the PA. The LSA program integrates and translates these inputs into output products required for preparation of ILS documents. These input-output relationships increase the need for effective coordination between the development commands as well as between related programs. Task analysis is the area that requires the most coordination and interfacing. This is true because it involves essentially every system engineering discipline and ILS functional element. Functional responsibility is maintenance engineering; input from or close coordination with technical publications and training is required. Design, R&M, human engineering and safety also have review/input responsibility. The quality of coordination achieved early in the LSA program will impact on the effectiveness of the total LSA effort. When properly interfaced, task analysis provides a very cost effective means of assuring suppotability of the equipment and developing an integrated support system.

PRIMARY LSAR REPORTS AND INTENDED USE: Information on the "C" data tables are summarized in a variety of LSAR reports. Of primary importance are LSA-004, 016, 019, 023, and 024 which provide reports of task allocation by maintenance function and level to be used in preparing draft maintenance publications. LSA-011, 012 and 013 highlight those maintenance tasks requiring new or modified training equipment, facilities, tools and support equipment. LSA-001, 003, 005, 007, 008, 014, and 065 summarize the training, personnel, support equipment, and supply support requirements identified for each maintenance task. These reports are used to: justify the need for support equipment and determine quantity and distribution requirements; develop tool kits for each skill specialty at each maintenance level; determine recommended order quantities of repair parts; and provide the basis for recommending specific tasks for training. The LSA-077, Depot Maintenance Interservice Data Summary, contains all repairable items and the applicable tasks which are to be performed at depot; all support equipment; new/modified depot facility requirements; new/unique depot support equipment, associated test program sets and tasks requiring these support items. The LSA-018, Task Inventory Summary, provides a listing of all tasks performed by system personnel to operate and maintain the item. This report is used by the Human Factor Engineering (HFE) community for work load analysis.

10.10.6 SUPPORT EQUIPMENT AND TRAINING MATERIAL REQUIREMENTS

DESCRIPTION: "E" data tables are structured to consolidate the pertinent information related to existing or new support/test equipment, training equipment/material, calibration requirements, physical characteristics, and test parameters.

HARDWARE INDENTURE LEVEL RELATIONSHIP: "E" data tables are required for each peculiar support/test equipment and any training equipment requirement identified in the "C" data tables. Each article requiring support with a task code in the "C" data tables which identifies a function to be performed using the support/test or requiring training equipment should be documented in the "E" data tables.

WHEN REQUIRED: "E" data tables are generally prepared during EMD as a result of LSA Subtask 401.2.3.

DATA SOURCE, FUNCTIONAL RESPONSIBILITY/INTERFACE REQUIREMENTS: LSA Task 401 and associated subtasks are the responsibility of the materiel developer. The MD assess and verifies for completeness of these subtasks and data tables accomplished by the PA. The evaluation criteria and tradeoff results from LSA Subtasks 303.2.6, Training Tradeoffs; and 303.2.8, Diagnostic Tradeoffs, should be available for input to Subtask 401.2.3. Coordination with training specialists and test, measurement and diagnostic equipment (TMDE) specialists may be necessary to describe and justify training and support/test equipmemt requirements.

PRIMARY LSAR REPORTS AND INTENDED USE: Support/test equipment related reports, LSA-005, -007, -009, -019, -030, and Requirements for Special Training Devices, LSA-011, are generated from the "C" data tables. Data included in the "E" data tables provide design information together with more detailed description and justification required for LSA-070, SERD. The LSA-071, Support Equipment Candidate List, provides a consolidated list of the support equipment candidates which were accepted and rejected. "E" data tables also provide unique input to LSA-072, TMDE Requirements Summary, which may be used to propose entry of a new item of TMDE into a service TMDE Register. LSA-074, Support Equipment Tool List, provides a four-part summary of all stock listed, commercial, modified or developmental tools required.

10.10.7 UNIT UNDER TEST REQUIREMENTS AND DESCRIPTION:

DESCRIPTION: "U" data tables are structured to identify the Unit Under Test (UUT) and those hardware and software elements required to test the UUT with off-line support/test equipment. These data include identification of: all articles of support (i.e., those with tasks specifying functions to be performed which require the support/test or training equipment being described; and the specific unit(s) (subsystems or components) in the system) required to enable the support/test or training equipment end item to be operated for its intended purpose (support function). The unique combination of these elements required for a specific UUT and support/equipment configuration is a Test Program Set (TPS). In addition to defining the TPS elements, this information provides the configuration identification of the UUT (i.e., the UUT and the support/test equipment to be used in the test). This information is established for each UUT which has a requirement to be tested by the support/test equipment documented. Additionally, CMRS information is captured in these tables.

HARDWARE INDENTURE LEVEL RELATIONSHIP: The "U" table data is required for each unit to be tested using support equipment defined in the "E" tables.

WHEN REQUIRED: The "U" data tables are prepared as a result of LSA Subtask 401.2.3 generally during the EMD phase.

DATA SOURCE, FUNCTIONAL RESPONSIBILITY/INTERFACE REQUIREMENTS: The MD is responsible for LSA Subtask 401.2.3. Coordination with the RA is required on all training equipment and device development actions. The MD assess and verifies for completeness of these subtasks and data tables accomplished by the PA.

PRIMARY LSAR REPORTS AND INTENDED USE: The "U" data tables contributes significantly to the LSA-070 (SERD), LSA-072 (TMDE Requirements Summary), and LSA-076 CMRS. It also augments other support/test equipment related reports generated by the LSAR ADP system. In addition to defining the TPS elements, "U" data tables provide configuration identification of the UUT, and identifies its fault isolated replaceable units.

10.10.8 FACILITIES CONSIDERATIONS

DESCRIPTION: The "F" tables describe and justify all proposed special or added facility requirements which are indicated as a result of the maintenance task analysis. Sketches or other information may be included as part of the hard copy storage. These data are required to provide facility designers with technical information necessary to prepare facility plans.

HARDWARE INDENTURE LEVEL RELATIONSHIP: The "F" tables are used for each facility requirement identified in the "C" tables. Each task code described in the "C" tables which identify a function requiring a facility should be documented in the "F" tables.

WHEN REQUIRED: The "F" tables are generally prepared during EMD as a result of LSA Subtask 401.2.3.

DATA SOURCE, FUNCTIONAL RESPONSIBILITY/INTERFACE REQUIREMENTS: LSA Subtask 401.2.3 is the responsibility of the MD. Facility related supportability constraints identified as a result of LSA Subtask 202.2.1 should be available as input to Subtask 401.2.3. Facility designers are the primary preparers of "F" data tables. The MD assess and verifies for completeness of these subtasks and data tables accomplished by the PA.

PRIMARY LSAR REPORTS AND INTENDED USE: Facility Requirements (LSA-012) are generated from data summarized in the "C" tables, which list all maintenance tasks which require facilities. This report, and detailed data documented in the "F" tables, are used by ILS managers to justify new or modified facility requirements. When specified by the requiring authority, "F" table data and the LSA-012 can be used by facility planners to program workload requirements created by the new system at existing facilities. New/modified depot facility requirements documented in the "F" tables are included in LSA-077, Depot Maintenance Interservice Data Summary. The technical information

described in the "F" tables is used by facility designers to prepare facility plans.

10.10.9 PERSONNEL SKILL CONSIDERATIONS

DESCRIPTION: "G" data tables are used to describe and justify any new or modified personnel skills required to support the system/equipment.

HARDWARE INDENTURE LEVEL RELATIONSHIP: A separate series of "G" data tables are required for each new/modified personnel skill identified as a result of the training analysis documented on the "C" data tables. Each task code described on "C" data tables which identifies a function to be performed by a new/modified personnel skill should be documented in the "G" data tables.

WHEN REQUIRED: "G" data tables are prepared as a result of LSA Subtasks 401.2.3 and 401.2.4 generally during the EMD phase.

DATA SOURCE, FUNCTIONAL RESPONSIBILITY/INTERFACE REQUIREMENTS: LSA Task 401 and associated subtasks are the responsibility of the MD. The evaluation criteria and tradeoff results from LSA Subtasks 303.2.5, Manpower and Personnel Tradeoffs, and 303.2.6, Training Tradeoffs, should be available as input to the skill evaluation. Training specialists are the primary preparers of the "G" data tables. The MD assess and verifies for completeness of these subtasks and data tables accomplished by the PA.

PRIMARY LSAR REPORTS AND INTENDED USE: LSA-014, Training Task List and LSA-018, Task Inventory Summary, are both generated from data documented in the "C" data tables. The LSA-014 report is by skill specialty code, which rationalizes training recommendations and training location requirements. The LSA-018 report is a listing of tasks required to operate and maintain the system. "G" data tables provides specific input to LSA-075, Consolidated Manpower, Personnel, and Training Report. This report summarizes man-power and personnel needs and new/modified skill and training requirements needed as a baseline for performing hardware-man power requirements analysis. The additional information recorded in the "G" data tables are used by ILS element managers/training specialists to prepare Qualitative and Quantitative Personnel Requirements Information (QQPRI), Individual and Collective Training Plans (ICTP), and resultant training documentation.

10.10.10 PACKAGING AND PROVISIONING REQUIREMENT

DESCRIPTION: The "H" data tables are used to document packaging and provisioning data requirements. Included in these tables are static parts data (nonapplication dependent) related to provisioning screening, catologing, packaging, and common maintenance data. Also included under these data tables are information concerniong the application of the item for initial support requirements determination, repair parts manuals, and design change information. See Appendix A for an explanation of the provisioning process

HARDWARE INDENTURE LEVEL RELATIONSHIP: The "H" data tables are completed only one time for a given reference number. This data record should be prepared to an indenture level sufficient to support the maintenance and support concepts

and provisioning documentation requirements of the acquisition. The indenture level is to be specified by the RA and may include every item in the system, i.e., nonreparable piece-parts and assemblies; bulk items; reparable end items, components and assemblies; tools, support and training equipment, and the resources required for their support.

WHEN REQUIRED: The "H" data tables are generally prepared as a result of LSA Subtask 401.2.8 during the EMD phase.

DATA SOURCE, FUNCTIONAL RESPONSIBILITY/INTERFACE REQUIREMENTS: The MD is responsible for LSA Subtask 401.2.8 and for acquiring provisioning data. The MD assess and verifies for completeness of these subtasks and data tables accomplished by the PA. Completion of the "H" data tables requires a continuous interchange of information among personnel responsible for provisioning, packaging, cataloging, TM preparation and maintenance planning. This includes coordinating requirements for provisioning data to be obtained through LSA with appropriate Government and contractor activities to ensure the timeliness of all provisioning actions.

PRIMARY LSAR REPORTS AND INTENDED USE: Data documented in the "H" data tables provide unique input to the following LSAR reports: LSA-009, -025, -026, -032, and -036. These reports summarize information required to perform provisioning, provide packaging instructions, and monitor provisioning screening submittals. LSA-036, Provisioning Requirements, is used in the selection procedures to identify repair parts requirements in support of the equipment to be fielded. In addition, LSA-030 can be used to satisfy the listing portion of RPSTL, IPB, or Stockage List Type Four requirements. The LSA-040, Authorization List Items Summary, with options for producing lists such as: COEIL, BIIL, AAL, ESML, and Stockage List Type Three is another provisioning oriented report. LSA-154, Provisioning Parts Breakout Summary, identifies critical pricing and parts breakout program information including selected parts application data. LSA-155, Recommended Spare Parts List for Spares Acquisition Integrated with Production (SAIP), provides the data for a SAIP list as specified by MIL-STD-1388-1A.

10.10.11 TRANSPORTABILITY ENGINEERING ANALYSIS

DESCRIPTION: The "J" data tables are structured to capture the information pertaining to the transportability shipping modes and to the item being transported.

HARDWARE INDENTURE LEVEL RELATIONSHIP: The "J" data tables are prepared for the end item in its shipping configuration. When the end item is sectionalized for transport, "J" data tables are completed for each section of the end item. Removing external items and storing them inside the package during transport is not considered sectionalization.

WHEN REQUIRED: "J" Data Tables are generally prepared during EMD as a result of LSA Subtask 401.2.7 (Transportability Analysis).

DATA SOURCE, FUNCTIONAL RESPONSIBILITY/INTERFACE REQUIREMENTS: LSA Subtask 401.2.7 is the responsibility of the MD. Transportation

requirements/constraints identified by the RA as a result of LSA Tasks 205 and 301 should be available as input to the transportability analysis. Evaluation criteria and results from LSA Subtask 303.2.12, Transportability Tradeoffs, should also be available. The MD assess and verifies for completeness of these subtasks and data tables accomplished by the PA. Transportation specialists are the primary preparers of "J" data tables.

PRIMARY LSAR REPORTS AND INTENDED USE: Data documented in the "J" data tables provide unique input, including environmental/hazardous material information, into the LSA-085, Transportability Summary. Data documented in the "J" data tables are used by ILS element managers/transportation specialists to prepare transportability plans.

20. CONTRACTING FOR LSA

20.1 Application in Procurement. This section discusses some aspects of the procurement process prior to issuance of the request for proposal (RFP) or other solicitation document, and considerations in preparing the LSA portion of the RFP. The guidance in this section should be applied as appropriate to the phase and nature of the program.

20.1.1 Pre-RFP and Bidders Briefings. Properly structured pre-RFP and bidders briefings can provide opportunities for feedback from potential bidders on selecting and focusing analysis task and data item requirements. This helps assure the RA that it has not included inappropriate RFP requirements, such as trades in areas where there is no freedom to trade, or data requirements which are premature or duplicative.

20.1.2 Preparing LSA RFP Requirements. The RFP is normally the first formal communication between the Government and industry. It is, therefore, a key document in the acquisition process. Industry interprets an RFP to be an expression of all the items of importance to the Government since it will be around these items that a contract will be written. Industry taxes its ingenuity to provide a competitive product that meets the stated requirements. This section discusses some suggested practices in preparing the RFP.

20.1.2.1 Broad Versus Specifics. Give the total support picture as early as possible. Structure the RFP to pose the broad problem to be addressed by the LSA program and provide information on absolutely necessary analysis subtasks and data required. Don’t go into unnecessary detail in establishing requirements at too early a time, especially if the scenarios are conceptual and design is still only crudely defined. Describe the freedom the bidder has for feedback. The bidder can then draw from experience and innovation to fine tune the requirements. Bidder feedback should be considered as recommendations only to preclude legal problems. Don’t destroy credibility by asking for inputs which are inconsequential in source selection or to the program as a whole.

20.1.2.2 Interfaces. The RFP should state that coordination of all disciplines that interface with LSA should be considered to reduce duplication of effort. Coordination of these interfaces are a major management challenge. How industry plans to coordinate these efforts should be described to assure that input-output relationships, responsibilities, and timing of activities are properly addressed to prevent over-lap and duplication.

20.1.2.3 Interweave Supportability Requirements and Constraints. Structure the RFP in such a way that supportability constraints and supportability related design requirements are interwoven into the appropriate system/development specification sections or other system/equipment description. This gives everyone involved with the design an appreciation of the supportability constraints and requirements. A properly structured RFP requires readiness and supportability inputs into many sections of the RFP. Consequently, more than just the logistics portions of the SOW and contract data requirements list must be addressed. The major areas for supportability

input into an RFP include the following:

a. Section B, Supplies/Services and Prices. Establish supportability work efforts and requirements as separate contract line items where possible.

b. Section C, Description/Specifications. Enter supportability work efforts and supportability design requirements.

c. Section F, Deliveries or Performance. Consider statement that delivery of the system/equipment will not be accepted without concurrent delivery of required logistic products.

d. Section H, Special Provisions. Consider inclusion of supportability incentives such as a design to life cycle cost goal.

e. Section I, General Provisions. Ensure that applicable Defense Acquisition Regulation clause(s) on rights in technical data and computer software are included.

f. Section L, Instructions and Conditions, and Notices to offerors. Ensure proposal preparation instructions relative to supportability aspect of the RFP are detailed and clearly written. Consider a separate proposal section for supportability.

g. Section M, Evaluation Factors for Award. Ensure sufficient weighting is given to supportability.

20.1.2.4 Relative Importance of Requirements. State the order of importance of the supportability related parameters being requested to the source selection criteria. This permits the LSA team to make an honest effort to provide the best LSA subtask selection for the least cost. For example, indicate that R&M are to be of high priority, and size and weight to be of low priority only if it is true; not when the size and weight requirements are inflexible and paramount. Identify any requirements which are soft, and in which the requester would consider slight reductions for other significant benefits. Contractors must be made aware of their responsibility to obligate their vendor/subcontractors to fulfill the applicable requirements, procedures, terms, conditions, and data requirements stated within this document.

20.1.2.5 Support Related Design Drivers. Consistent with the degree of design freedom, ask the bidder to identify those design attributes which may prove to be the key influencing factors in readiness, acquisition cost, O&S cost, and logistic support resource demands. Have the bidder identify the LSA subtasks that will be used to analyze these requirements.

20.1.2.6 Alternate Support Concepts. It is DOD policy to encourage innovative analysis approaches which can be used to pinpoint potential readiness, O&S cost, and supportability benefits. When options are not foreclosed due to prior investments, the RFP should allow the contractor to suggest analysis approaches to reduce support costs by changing the way an item is supported. This does not mean that a contractor should be permitted to violate the basic requirements; on the contrary, the contractor should be

made to understand that proposed alternatives must be totally compliant with the requirements. However, the contractor should be permitted to offer alternatives which go beyond basic compliance. It should be possible to favorably evaluate a contractor who proposes LSA techniques that can be used to identify system/equipment design that meets requirements together with an innovative alternate support scheme, if the alternate scheme meets support requirements and realistically promises lower support costs.

20.1.2.7 Evaluation Methods and Models. The RFP should indicate how the requester plans to evaluate the degree to which LSA requirements have been satisfied. The proof of compliance with such requirements should be as straightforward as that for compliance with performance requirements. The contractor should be told what technically auditable information he needs to provide to permit such evaluations. It is imperative that data structure, fixed constraints, and defining statements be identical for all competing contractors. If contractors are required to perform modeling, identical models tailored to the competition and the specifics of the program should be provided to all, and all bidders should be required to use them.

20.1.2.8 Provisioning Procedures. In addition to the supply support associated requirements stated in paragraphs 20.1.2.3 - 20.1.2.6, the following information is required to identify and establish the required provisioning program. Specific provisioning requirements should be stated in the SOW for inclusion in the solicitation or contract. The provisioning requirements in conjunction with applicable DD Form 1423 series, Contract Data Requirements List (CDRL), establishes requirements for schedules, identifies actions, and delineates the specific procedural and deliverable data requirements applicable to a particular solicitation or contract. If omitted in the solicitation or contract, provisioning requirements may be incorporated into the contract after the award by contract modification.

a. Provisioning Performance Schedule (PPS). Significant events and milestones can be stated in the PPS. The PPS can be included with the solicitation or contract. The PPS will be developed, updated or finalized as required at the guidance conference, and incorporated into the contract by contract modification if the contract is already awarded. The requirements not covered by the PPS may be included in the Statement of Work under LSA, when prescribed by the procuring activity.

b. Provisioning Technical Documentation (PTD). The requiring authority will be responsible for requiring PTD on the DD Form 1423 series. Specific data elements to be included in each list should be as specified by the LSAR Data Requirements Form, DD Form 1949-3, Part II. The applicable Data Item Description (DID) for PTD should be cited and tailored to obtain the exact parts lists being requested. The contractor should submit the required PTD or include a Statement of Prior Submission (SPS) for those Provisioning Lists previously submitted. PTD (i.e. Subtask 401.2.8) is defined in Appendix B of MIL-STD-1388-1A.

c. Method of Provisioning. The Provisioning Activity should determine whether this method should be by Resident Provisioning Team (RPT), Conference Team, In House, or LSAR. These methods are defined in Appendix B of MIL-STD-1388-1A.

d. Engineering Data for Provisioning (EDFP). The Statement of Work (SOW)/contract should make reference to MIL-T-31000, Specifications for Technical Data Packages, in order to obtain product engineering drawings and commercial data to support the provisioning process (i.e. Subtask 401.2.8). The DOD preference is not to acquire a new or separate MIL-T-31000 Technical Data Package, but to use an existing contract DID to support the Provisioning Process. Generally this can be done by acquiring copies of products being developed for the MIL-T-31000 DIDs at the time of the Provisioning event for the cost of reproduction and delivery without regard to completeness of the drawing. EDFP must be obtained by citing DI-DRPR-81000, Product Drawings and Associated Lists, using a CDRL tailored to support the Provisioning Process as stated in this paragraph. The SOW/contract order of precedence for EDFP should be product engineering drawings, in process/incomplete product engineering drawings adequate for the provisioning process and finally, commercial drawings or associated lists. The associated DD Form 1423 series should state the following: "If product Technical Data Package (TDP) requirements have not been achieved, the contractor shall submit the available data that satisfies the SOW/contract conditions." Commercial data, when used, must be delivered by using DI-DRPR-81003, Commercial Drawings and Associated Lists. DI-ILSS-81289 may be cited for engineering data only when MIL-T-31000 requirements have been excluded from the SOW. The intent of DID DI-ILSS-81289 is to use the requirements and specifications of MIL-T-31000 DIDs without using that standard directly on the support contract. EDFP shall not be provided when the item is: (1) identified by a government specification or standard which completely describes the item including its material, dimensional mechanical and electrical characteristics, (2) identified in the Defense Integrated Data System with a type item identification of 1, 1A (K) or 1B (L) or (3) item is listed as a reference item (subsequent appearance of an item) on a parts list.

e. Design Change Notice (DCN). Design Change Notices for procurable type items should be prepared in the same format as other PTD or in accordance with instructions from the PA, (i.e., Subtask 401.2.11). The notices should be accompanied by EDFP and submitted within twenty-one (21) days after release of the EDFP for contractor design items and forty-two (42) days after release of the EDFP for the subcontractor supplied items. Design Change Notices for non-procurable type items should be prepared in accordance with instructions from the provisioning activity and should be supported by applicable EDFP and should be submitted within sixty (60) days after release of the EDFP. Design change conditions should be as specified in the LSAR update process or as specified by the PA. A DCN for administrative purposes or to facilitate the production control process is not acceptable. Refer to Appendix B of MIL-STD-1388-1A for DCN definition.

f. Additional Provisioning Requirements. Specific provisioning requirements that have not been included in the CDRL may be requested in DD Form 1949-3, LSAR Data Requirements Form. This information establishes requirements for schedules, identifies actions, and delineates specific procedural and deliverable data requirements applicable to a particular solicitation or contract.

g. Provisioning Conference. This conference is used by the government to

validate the support items and to assign technical and management codes made during the LSA process. When specified, one or more of the following articles should be available to conduct the provisioning conference:

(1) PTD.

(2) Personnel with expert technical knowledge of the end item with regard to the design, reliability and maintenance characteristics of the end item or the portion of the end item being provisioned.

(3) Sample articles for disassembly or government viewing, including required tools/test equipment and adequate workspace near sample articles, when specified by the provisioning requirements.

(4) LSA/level of repair analysis data as specified by the government.

(5) Program parts selection list (PPSL) per MIL-STD-965 when a PPSL is a contract requirement.

(6) Provisioning screening results printout, when required by the PRS.

20.1.2.9 Spares Acquisition Integrated With Production (SAIP). This procedure places orders for installed components and spares concurrently. For vendor items, the spares order may be placed by the prime contractor on behalf of the Government or directly by the Government. The advantages obtained are timely availability of spares, integrated configuration and quality control, and quantity price breaks due to economy of scale. (i.e., Subtask 401.2.6). Contractor's Procurement Schedule for SAIP (DI-ILSS-81290) and Recommended spare Parts List for SAIP (DI-ILSS-80293) are to be placed on contract if SAIP is applied. These data items provide the information needed to employ the SAIP procedure.

20.2 Task Documentation. The development and maintenance of good documentation covering the results of LSA tasks contained in MIL-STD-1388-1A serves the following purposes:

a. Provides an audit trail of analyses performed and decisions made affecting the supportability of a system/equipment.

b. Provides analysis results for input to follow-on analysis tasks later in the system/equipment's life cycle.

c. Provides source data for use by ILS element functional managers and a standard method of recording ILS element data from functional managers.

d. Provides input into materiel acquisition program documents.

e. Helps prevent duplication of analyses.

f. Provides an experience data base for use on future acquisition programs.

20.2.l Individual analysis tasks performed as part of a system/equipment's LSA program may be performed by a Government activity, contractor activity, or

both. Task documentation must be developed to the degree that will allow another activity to use the task results as input data to perform other LSA tasks, or as input to conduct the same task to a more detailed level in a later acquisition phase. When some tasks are performed by the Government and others are performed by a contractor, procedures must be established to provide for the data interchange between the performing activities. Tasks performed by Government activities should be documented equivalent to the applicable DID requirements to assure compatibility of documentation.

20.2.2 When LSA tasks are performed by a contractor, task documentation that is required for delivery to the Government will be specified on the CDRL, DD Form 1423, with appropriate DID's being cited. The CDRL will identify data and information that the contractor will be obligated to deliver under the contract. DID's are used to define and describe the data required to be furnished by the contractor. Applicable DID's that describe the data resulting from performance of the LSA tasks contained in this standard are identified in Table III of MIL-STD-1388-1A. These DID's are structured to identify the maximum range of data that can be documented in a report. Provided in Table 2 is an example of products and their DIDs. Also identified are the direct and indirect LSA tasks needed to develop these products and if applicable the LSAR reports and data tables associated with these products. The RA can tailor down these requirements by deleting unwanted data from Block 10 of the DD Form 1664 and making appropriate use of the CDRL. For example, if the requiring authority wants a System/Design Trade Study Report which only covers the tradeoff analysis results (Task 303) or the data from only one of the tradeoff subtasks (e.g., 303.2.7, level of repair analysis), this can be accomplished through appropriate entries on the CDRL. By appropriately completing the CDRL and lining out unwanted data in Block 10 of the applicable DID's, the requiring authority can structure the deliverable data products to cost effectively meet program requirements.

20.2.3 There is a considerable distinction between data and the documentation of data. Additionally, there is a large number of different forms of documentation for LSA data which frequently overlap. Because of these factors, LSA program data and data formatting requirements must be carefully scoped to meet program needs in a cost effective manner. Factors which affect data and documentation costs include the following:

a. Timing of preparation and delivery. Documentation or recording of data should coincide with the generation of such data in the design and analysis sequences in order that such data will not have to be recreated at added expense at a later date. Delivery of data should be postponed until actual need date in order to acquire data in its most complete form without repetitive updates.

b. Use of the data by the performing activity. The less use, the more expensive.

c. Special formatting requirements.

d. Degree of detail required.

e. Degree of research required to obtain the data.

f. Accuracy and amount of verification required.

g. Duration of responsibility for data contents.

h. Availability and accuracy of source data from which to construct documentation. For example, poorly prepared or inaccurate schematics will increase the cost of technical manuals.

20.2.4 Data and data documentation costs can be effectively controlled by the following methods:

a. Screening requirements prior to preparation of solicitation documents. Each data requirement should be reviewed for data content, end use, formatting needs, scheduled delivery, and estimated cost to eliminate duplication and assure proper integration and scheduling of requirements. This function is generally performed by ILS management.

b. Using contractor format whenever possible. This generally reduces cost and may also provide important insights to contractor controls, checks, and balances between design and LSA functions. Additionally, reformatting requirements often results in a distillation of original data which can provide misleading or incomplete information.

c. Involve potential bidders in briefings and planning conferences prior to issuance of a solicitation document. This helps assure that data and data documentation requirements are realistic and that maximum use is made of data already available.

PRODUCT/DID	DIRECT LSA TASKS	INDIRECT LSA TASK	LSA REPORTS	DATA TABLES
Materiel Fielding Plan DI-S-7118	402.2.1, 402.2.2, 402.2.3, 402.2.4, 402.2.5	401.2.1, 401.2.2, 401.2.3, 401.2.4, 401.2.6, 401.2.7, 401.2.8, 401.2.11		
Test and Evaluation Master Plan	401.2.9, 501.2.1, 501.2.3, 501.2.4, 501.2.5	303.2.2, 303.2.4, 303.2.5, 303.2.7, 401.2.5, 401.2.6		
Amended BOIP/QQPRI DI-ILSS-81138 DI-ILSS-81165	302.2.3, 302.2.4, 302.2.5, 303.2.1, 303.2.3, 303.2.4, 303.2.5, 303.2.6, 303.2.7, 303.2.11, 401.2.1, 401.2.2, 401.2.4, 401.2.5, 401.2.6, 401.2.11	301.2.1, 301.2.2, 301.2.3, 301.2.4, 301.2.5, 301.2.6, 302.2.1, 302.2.2,	LSA-001 LSA-065	A,C,H
System Configuration Provisioning List DI-ILSS-81285	401.2.1, 401.2.2, 401.2.3, 401.2.8, 401.2.11	202.2.2, 202.2.3, 202.2.4, 301.2.4, 302.2.3, 303.2.4, 303.2.7	LSA-036	H
Provisioning Parts List DI-ILSS-81285	401.2.1, 401.2.2, 401.2.3, 401.2.8, 401.2.11	202.2.2, 202.2.3, 202.2.4, 301.2.4, 302.2.3, 303.2.4, 303.2.7	LSA-036	H
Short Form Provisioning Parts List DI-ILSS-81285	401.2.1, 401.2.2, 401.2.3, 401.2.8, 401.2.1	202.2.2, 202.2.3, 202.2.4, 301.2.4, 302.2.3, 303.2.4, 303.2.7	LSA-036	H
Long Lead Time Items List DI-ILSS-81285	401.2.2, 401.2.3, 401.2.8, 401.2.11	202.2.2, 202.2.3, 202.2.4, 301.2.4, 302.2.3, 303.2.4, 303.2.7, 401.2.1	LSA-036	H
Interim Support Items List DI-ILSS-81285	401.2.1, 401.2.2, 401.2.3, 401.2.8, 401.2.11	202.2.2, 202.2.3, 202.2.4, 301.2.4, 302.2.3, 303.2.4 303.2.7	LSA-036	H
Tools and Test Equipment DI-ILSS-81285	401.2.1, 401.2.2, 401.2.3, 401.2.8, 401.2.11	202.2.2, 202.2.3, 202.2.4, 301.2.4, 302.2.3, 303.2.4, 303.2.7	LSA-036	H
Common and Bulk Items List	401.2.1, 401.2.2, 401.2.3, 401.2.8,	202.2.2, 202.2.3, 202.2.4, 301.2.4, 302.2.3, 303.2.4,	LSA-036	H

PRODUCT/DID	DIRECT LSA TASKS	INDIRECT LSA TASK	LSA REPORTS	DATA TABLES
DI-ILSS-81285	401.2.11	303.2.7		
Post Conference List DI-ILSS-81285	401.2.1, 401.2.2, 401.2.3, 401.2.8, 401.2.11	202.2.2, 202.2.3, 202.2.4, 301.2.4, 302.2.3, 303.2.4 303.2.7	LSA-036	H
Design Change Notice DI-ILSS-81285	401.2.1, 401.2.2, 401.2.3, 401.2.8, 401.2.11	202.2.2, 202.2.3, 202.2.4, 301.2.4, 302.2.3, 303.2.4 303.2.7	LSA-036	H
Repairable Item List DI-ILSS-81285	303.2.7, 401.2.1, 401.2.2, 401.2.3	301.2.4, 301.2.6	LSA-036	H
Provisioning Parts List Request DI-V-7193	401.2.1, 401.2.2, 401.2.3, 401.2.8, 401.2.11	202.2.2, 202.2.3, 202.2.4, 301.2.4, 302.2.3, 303.2.4 303.2.7		
Provisioning & Other Preprocurement Screening Data DI-ILSS-81286	401.2.5, 401.2.8	202.2.2, 202.2.3, 202.2.4, 303.2.7, 401.2.1, 401.2.2	LSA-032	H
Spares Acquisition Integrated w/ Production (SAIP) DI-ILSS-80293	401.2.1, 401.2.2, 401.2.3, 401.2.8	302.2.3, 302.2.4, 302.2.5, 303.2.2, 303.2.3, 303.2.4	LSA-155	H
Supplementary Provisioning Technical Documentation DI-V-7000	401.2.1, 401.2.2, 401.2.3	202.2.2, 202.2.3, 202.2.4, 302.2.3, 302.2.4, 302.2.5, 303.2.2, 303.2.7, 303.2.8		
Recommended Repair Parts List DI-V-6180	401.2.1, 401.2.2, 401.2.8, 401.2.11	301.2.4		
Parts Control Program DI-MISC-80526, DI-E-7029, DI-E-7030, DI-ILSS-80117 , DI-MISC-80071, DI-MISC-80072	202.2.2, 202.2.3, 202.2.4		LSA-154	H
Repair Parts &	401.2.1, 401.2.2,	301.2.4, 302.2.3,	LSA-030	H

PRODUCT/DID	DIRECT LSA TASKS	INDIRECT LSA TASK	LSA REPORTS	DATA TABLES
Special Tools List(RPSTL) DI-L-7188 DI-ILSS-81156	401.2.3, 401.2.8, 401.2.11	303.2.2, 303.2.7		
Technical Manuals DI-ILSS-81153, DI-ILSS-81157, DI-ILSS-81160, DI-M-6152, DI-TMSS-80527 , DI-M-6154 , DI-M-6155	401.2.1, 401.2.2, 401.2.8	301.2.1, 301.2.2, 301.2.3, 301.2.4, 301.2.5, 301.2.6, 302.2.3, 302.2.4, 302.2.5, 303.2.2, 303.2.3, 303.2.4, 303.2.5, 303.2.6, 303.2.7, 303.2.8	LSA-019 LSA-033 LSA-040	B, C, E, H
LSAR Program Design Reviews	103.2.1, 103.2.2, 103.2.3, 103.2.4			
LSAR Program and Minutes and Agendas DI-A-7088, DI-A-7089				
Technological Opportunity Report DI-S-7117	204.2.2, 204.2.3			
TMDE Rqmnts Summary and Registration DI-ILSS-80288	401.2.1, 401.2.2, 401.2.3, 401.2.8, 401.2.11	301.2.4, 303.2.2, 303.2.4, 303.2.7, 303.2.8	LSA-072	C, E, U, H
Depot Maintenance Interservice Summary DI-ILSS-80291	401.2.1, 401.2.2, 401.2.3, 401.2.8, 401.2.11	302.2.3, 302.2.4, 302.2.5, 303.2.2, 303.2.3, 303.2.4, 303.2.5, 303.2.6, 303.2.7, 303.2.8, 303.2.13	LSA-077	A, C, C, E, F, G, H
Preliminary Maint. Alloc. Chart (PMAC) DI-ILSS-81151	401.2.1, 401.2.2	301.2.1, 301.2.2, 301.2.3, 301.2.4, 302.2.1, 302.2.2, 302.2.3, 302.2.4, 302.2.5, 303.2.2, 303.2.3, 303.2.7, 303.2.8	LSA-016	C, E, H
Maintenance Allocation Chart (MAC) DI-ILSS-81140	401.2.1, 401.2.2, 401.2.3	301.2.1, 301.2.2, 301.2.3, 301.2.4, 302.2.1, 302.2.2, 302.2.3, 302.2.4, 302.2.5, 303.2.2, 303.2.7, 303.2.8	LSA-004	C, E, H

PRODUCT/DID	DIRECT LSA TASKS	INDIRECT LSA TASK	LSA REPORTS	DATA TABLES
Air Force Maintenance Plan DI-ILSS-81183	401.2.1, 401.2.2, 401.2.3	301.2.1, 301.2.2, 301.2.3, 301.2.4, 302.2.1, 302.2.2, 302.2.3, 302.2.4, 302.2.5, 303.2.2, 303.2.7, 303.2.8	LSA-023	A, B, C, E, H
Navy Maintenance Plan DI-ILSS-80119B	401.2.1, 401.2.2, 401.2.3	301.2.1, 301.2.2, 301.2.3, 301.2.4, 302.2.1, 302.2.2, 302.2.3, 302.2.4, 302.2.5, 303.2.2, 303.2.7, 303.2.8		B, C, E, H
Support Equipment Recommendation Data(SERD) DI-ILSS-80118	401.2.3	303.2.2, 303.2.7, 303.2.8	LSA-070	E, U, H, J
MANPRINT Report DI-ILSS-80290	301.2.4, 401.2.1, 401.2.2, 401.2.3	301.2.1, 301.2.2, 301.2.3, 303.2.2, 303.2.3, 303.2.4, 303.2.5, 303.2.6, 303.2.7	LSA-075	A, C, G
FMECA Report DI-ILSS-81163	301.2.1, 301.2.2, 301.2.3, 301.2.4		LSA-056	B, H
RCM Summary DI-ILSS-81162	301.2.1, 301.2.2, 301.2.3, 301.2.4		LSA-050	A, B, C, G
Maintainability Prediction Report DI-MNTY-80827	301.2.4,401.2.1, 401.2.2, 401.2.3	301.2.1, 301.2.2, 301.2.3, 302.2.3, 302.2.5, 303.2.2, 303.2.3, 303.2.5, 303.2.7, 303.2.8, 303.2.11		
Maintainability Analysis Report DI-MNTY-80828	301.2.4, 401.2.1, 401.2.2, 401.2.3	301.2.1, 301.2.2, 301.2.3, 302.2.3, 302.2.5, 303.2.2, 303.2.3, 303.2.5, 303.2.7, 303.2.8, 303.2.10, 303.2.11		
Reliability Mathematical Models DI-R-7081	301.2.4	301.2.1, 301.2.2, 301.2.3		
Reliability Prediction Models	301.2.4	301.2.1, 301.2.2, 301.2.3		

PRODUCT/DID	DIRECT LSA TASKS	INDIRECT LSA TASK	LSA REPORTS	DATA TABLES
DI-R-7082				
Logistic Support Analysis Plan DI-ILSS-80531	102.2.1, 102.2.2			
Nuclear Survivability DI-ENVR-80266 DI-ENVR-80267	301.2.4, 401.2.1, 401.2.2	301.2.1, 301.2.2, 301.2.3, 303.2.7, 303.2.11		
Level of Repair Analysis (LORA) DI-ILSS-80654 DI-ILSS-80655	301.2.4, 303.2.7	301.2.1, 301.2.2, 301.2.3, 302.2.1, 302.2.2, 302.2.3, 302.2.4, 302.2.5, 303.2.1		
Calibration/Measurement Rqmt Summary DI-QCIC-80278 DI-ILSS-81167	4012.1, 401.2.3, 401.2.8, 401.2.11	302.2.3, 302.2.4, 302.2.5, 303.2.2, 303.2.8	LSA-076	A, C, E, U, H
Test Program Sets DI-A-6102 DI-ATTS-80284 DI-ILSS-80395 DI-ATTS-80285	301.2.4, 401.2.1, 401.2.2, 401.2.3	301.2.1, 301.2.2, 301.2.3, 302.2.3, 302.2.4, 302.2.5, 303.2.13		
Human Factors Engineering Program DI-HFAC-80740 DI-HFAC-80745 DI -HFAC-80746 DI-HFAC-80747 DI-ILSS-81152	401.2.1, 401.2.2, 401.2.3, 401.2.4, 401.2.5	301.2.1, 301.2.2, 301.2.3, 301.2.4, 303.2.2, 303.2.5, 303.2.6	LSA-018	C
Training Program DI-ILSS-81099 , DI-ILSS-81070 , DI-ILSS-81078, DI-ILSS-81150	401.2.1, 401.2.2, 401.2.3, 401.2.4, 401.2.11	301.2.1, 301.2.2, 301.2.3, 301.2.4, 302.2.3, 302.2.4, 302.2.5, 303.2.2, 303.2.3, 303.2.4, 303.2.5, 303.2.6, 303.2.7	LSA-014	C
Training Program Development/Management Plan DI-ILSS-81070	401.2.1, 401.2.2, 401.2.3, 401.2.4	303.2.5, 303.2.6		
Facilities Maintenance Training Eqpmt	401.2.1, 401.2.2, 401.2.3, 401.2.4	302.2.3, 302.2.4, 302.2.5, 303.2.2, 303.2.3, 303.2.4,		

PRODUCT/DID	DIRECT LSA TASKS	INDIRECT LSA TASK	LSA REPORTS	DATA TABLES
DI-H-6135		303.2.5, 303.2.6, 303.2.7		
Training Course Control Document DI-ILSS-81075		303.2.2, 303.2.3, 303.2.4, 303.2.8, 401.2.1, 401.2.2		
Test Requirements Document DI-ATTS-80041	301.2.4, 401.2.1, 401.2.2, 401.2.3	301.2.1, 301.2.2, 301.2.3, 302.2.3, 302.2.4, 302.2.5, 303.2.13		
Facilities Plan DI-ILSS-81148	301.2.4, 401.2.1, 401.2.2, 401.2.3	301.2.1, 301.2.2, 301.2.3, 302.2.3, 302.2.4, 302.2.5, 303.2.13	LSA-012	C, F
Computer Resources Support DI-MCCR-80015 DI-MCCR-80024 DI-MISC-80711	401.2.1, 401.2.2, 401.2.3, 501.2.1, 501.2.3, 501.2.4	205.2.3, 302.2.3, 302.2.4, 302.2.5, 303.2.2, 303.2.5, 303.2.6, 303.2.7		
Packaging Data Requirements DI-PACK-80120	401.2.1, 401.2.2, 401.2.3, 401.2.8		LSA-025 LSA-026	H
Supportability Assessment Report DI-S-7121		501.2.4, 501.2.6		
Supportability Assessment Report Plan DI-S-7120		501.2.1, 501.2.3, 501.2.5		
Transportability Report DI-PACK-80880	401.2.7	303.2.12		
Transportability Summary DI-ILSS-81170	401.2.7	303.2.12	LSA-085	H, J
System Support Package Component List DI-ILSS-80532	501.2.2	303.2.5, 303.2.6, 303.2.7, 303.2.8, 303.2.13, 401.2.1, 401.2.2, 401.2.3, 401.2.4, 401.2.7		
LSAR Master Files				

PRODUCT/DID	DIRECT LSA TASKS	INDIRECT LSA TASK	LSA REPORTS	DATA TABLES
DI-ILSS-81173				
Trade Study Report DI-ILSS-81021				
Baseline Comparative Analysis DI-S-7116	203.2.1, 203.2.2, 203.2.3, 203.2.4, 203.2.5, 203.2.6, 203.2.7, 203.2.8	303.2.9		
Supportability Constraints DI-MISC-80711	202.2.1			
Post Product on Support Plan DI-P-7119	403.2.1			

20.3 CONTRACTING FOR LSAR

20.3.1 OBJECTIVE. Provide guidance on tailoring the LSAR data and reporting requirements based on the specific needs of a weapon system program.

20.3.2 FACTORS TO CONSIDER. Figure 2.1 lists some factors to consider when contracting for LSAR. The first three factors; Type of Acquisition, Phase of Development and LSAR Level of Effort are key factors when identifying the logistic products required. The next two factors; Previous LSAR Efforts and Degree of Program Control help refine the logistics products and logistic analyses reports that will be needed for a weapon system program.

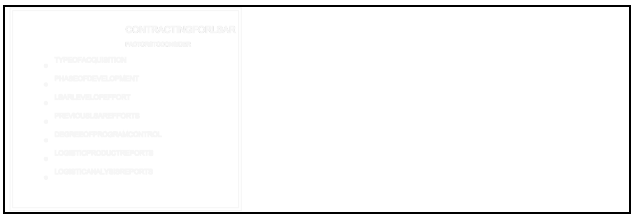

FIGURE 2.1

20.3.2.1 TYPE OF ACQUISITION. The type of an acquisition program is a major driver of LSAR cost. For LSAR purposes, most programs can be classified into these areas:

a. Developmental Item. The most extensive LSAR programs generally fall into this category since DOD has significant influence on the design of hardware and its support systems. In this type of acquisition all LSAR data should be considered, but not all data may be purchased.

b. Streamline Development. This process is the same as a full development. The major difference is that timing of data development becomes important. Again in this type of acquisition all LSAR data should be considered, but not all may be purchased

c. Product Improvement Program (PIP). For LSAR purposes, a PIP is defined as the process by which an existing system is improved to the extent that it will satisfy more stringent user requirements, provide improved performance, or significantly reduce logistic support and operating costs. PIP's are good examples of how previous LSAR data can be used to lower the LSAR effort. The LSAR data is used as a baseline or starting point. Not all of the LSAR will have to be redone for a PIP. The LSAR should be tailored to satisfy the needs for the new requirements identified by the PIP effort.

d. Non-Developmental Item (NDI). NDIs are systems available from a variety of sources requiring little or no development effort by the government. NDIs include materiel developed and in use by other U.S. military services or government agencies, and materiel developed and in use by other countries, as well as commercially available materiel. All the LSAR data may not need to be considered for a NDI or commercial off the shelf item. This is dependent on the item and what is available with that item. If there are good

operator and repair manuals, then C tables may not need to be considered. The same hold true for provisioning information and reliability data.

20.3.2.2 PHASE OF DEVELOPMENT. Another consideration when developing a product list is the phase of development. Early on in the acquisition, in the first phase of development, the Requiring Authority (RA) concentrates on developing requirements. Usually there is very little LSAR developed in this phase. In the next phase there isn't a need to consider or request detailed or final products, because tradeoffs are still being conducted. The analysis effort provides initial information for documentation in the LSAR. The second phase is a good place to request the analysis type LSAR reports. During the third phase the design is firmed up and finalized. A detailed task analysis can be accomplished in the fourth phase. In the third and fourth phases the LSAR data should be developed and finalized for the ILS products. The phase of the life cycle is important when asking for data and will make a difference when asking for products.

20.3.2.3 LSAR LEVEL OF EFFORT. Levels of maintenance and hardware indenture should be considered when deciding what LSAR products are needed for the acquisition. The levels of maintenance for the item under analysis have a direct effect on the LSAR. If the item is to be maintained at organizational, direct support, intermediate support, depot, or a special repair activity then manuals, spare, tools, test equipment, and man power for each of these maintenance levels must be considered. A level of repair analysis should be done to correctly identify which of these maintenance levels are needed. That way the LSAR is keep to a minimum. The indenture level to which the hardware is broken down will effect the LSAR. When a FMECA is documented it may look down to the major components or it may look down to the lowest repairable item. Hence the level of effort is effected by hardware indenture level, because of the amount of documentation.

20.3.2.4 PREVIOUS LSAR EFFORTS. There may already be existing LSAR data for this item, from another system or from a previous life cycle phase. The data needs to be reviewed to see if it is applicable to this system. When reviewing the data some of the areas to consider are format, level of effort, age, etc. The data may be in an acceptable/unacceptable format (e.g., In the previous LSAR effort the format used was DARCOM 750-16, but now under this development effort the format is MIL-STD-1388-2B). What must be considered in this case is whether or not the data should be converted from the 750-16 format to 2B format, there will be costs involved in converting this data. Again level of effort comes in to play. Is the level of effort in the previous LSAR acceptable? Do you need to do analysis further on down, going from LRU to piece part or from organizational and intermediated maintenance levels to depot maintenance?

20.3.2.5 DEGREE OF PROGRAM CONTROL. Degree of program control is the constraint placed on the developer in terms of control of the LSAR data. The data accession list can be used to look at data the developer has created through his engineering process. This is the lightest degree of program control. Reviewing the data on sight during formal design reviews is another degree of program control. Another means of control, delivery of the master tables, is when the reports and final products are produced in-house. The tightest level of program control is when the developer is responsible for

producing all the reports and all the final products.

20.4 DETERMINE LOGISTICS PRODUCTS. In each functional area/systems engineering discipline there are specific deliverable products required for a given contractual phase. Specific LSAR reports can be used to either satisfy completely or provide source information to the generation of these deliverable products. For example, provisioning technical documentation is normally required at the end of engineering development and manufacturing. The LSA-036 report satisfies the requirement for this product from the LSAR data base. This section addresses the products by functional area that are normally required, the LSAR report that can satisfy or provide source information for development of the product and the DID's and documents associated with the product. Knowing what LSAR reports are required is a key step in determining what LSAR data elements are required. Figure 14 in MIL-STD-1388-2B identifies the data elements required for each report. This allows the user to fill in the 1949-3 regarding data required.

20.4.1 Logistic Product Figures. Figures 2.2 - 2.10 can be used as reference for paragraphs 20.4.2 - 20.4.10. The figures headings on these charts are LSAR Tables, LSAR Reports, Products, and Documents. These headings describe were information comes from, which reports are generated, identifies the products created by the LSAR system, and what documents govern these reports. Also described in the figures are the DIDs that should be called out for these reports to be generated and whether or not the report actually satisfies the product needs. Source identifies the report as source data to be used in a final product. Satisfies identifies the report as being a final product.

20.4.2 Reliability and Maintainability. Figure 2.2 depicts the three reports that can provide reliability and maintainability data. The LSA-050, Reliability Centered Maintenance (RCM) report, can be used as source data for a final RCM report. This will satisfy MIL-STD-2173(AS), MIL-STD-1843, and AMCP 750-2 requirements. The RCM report identifies preventive maintenance tasks by evaluating maintenance required for an item by its reliability characteristics. The DID called out in the SOW and CDRL for this report is

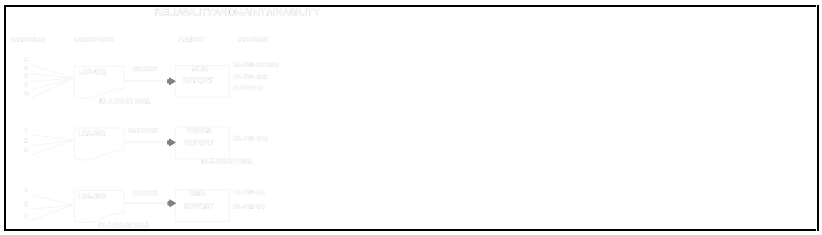

FIGURE 2.2

DI-ILSS-81162A. The LSA-050 report pulls information from 5 different LSAR

functional areas, shown in figure 2.2. The exact data elements called for this report are in figure 14 appendix B from MIL-STD-1388-2B. The FMECA report, LSA-056, report will satisfy MIL-STD-1629A's requirement for a FMECA report. The DID to use to get this report is DI-ILSS-81163A. This report can be used to identify the results or effects of a potential failure on the system. The LSA-058 report can be used as source information for any type of RAM report. It also can be used as a quick overview of most of the RAM type information. The DID used to get this report is DI-ILSS-81164A.

20.4.3 Maintenance Planning. Figure 2.3 depicts the 5 reports that can provide information for maintenance planning. The LSA-004 report, the Maintenance Allocation Chart (MAC), satisfies the Army requirements laid out in MIL-M-63038 (TM). The DID for this report is DI-ILSS-81140A. The MAC provides man-hour allocations by maintenance function and level. Also included in the MAC are the tools and test equipment required by the task function and maintenance level. The LSA-016 satisfies DI-L-7190 for a Preliminary MAC (PMAC). The DID for this report is DI-ILSS-81151A. The report identifies tools and equipment by maintenance levels needed to perform the maintenance functions, and to validate Source, Maintenance, and Recoverability (SMR) Codes for spares and repair parts. The LSA-023 satisfies the requirements for an Air Force maintenance plan. The DID for this report is DI-ILSS-81183A. The report compares the requirements for a system end item to the Reliability, Availability, and Maintainability (RAM) characteristics. It identifies the preventive and corrective maintenance actions along with a listing of required support equipment for those maintenance actions. The LSA-024 satisfies the requirements for a Navy maintenance plan. The DID for this report is DI-ILSS-80119C. The report identifies general considerations, the required repair capabilities, and maintenance tasks needed for the item under analysis. The LSA-033 report satisfies the requirements for a Preventive Maintenance Checks and Service (PMCS) for MIL-M-63038 (TM) and MIL-M-63036 (TM). The DID for this report is DI-ILSS- 81157A. This report provides operator/crew and organizational level preventive maintenance task identification, description, and whether or not the equipment has full mission capability during the maintenance action.

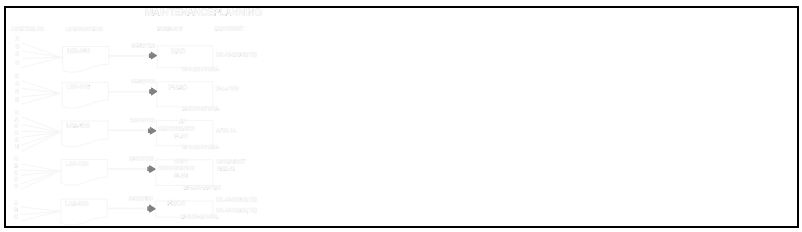

FIGURE 2.3

20.4.4 Technical Data and Manuals. Figure 2.4 depicts the reports used for development of technical manuals. The LSA-019 report is task narrative data and has multiple options for selecting that report. The report can be selected by maintenance level, item category code (ICC)(s) , task narrative, hardness critical procedures, task interval, and task function. This report is similar to the task narrative master file in 2A. It serves as feeder data to operators' and maintainers' Technical Manuals (TM). The DID for this report is DI-ILSS-81153A. The LSA-030 report can be used for developing parts manuals. It serves as source information for the Repair Parts and Special Tools List (RPSTL) for the Army, the Illustrated Parts Breakdown (IPB) for the Air Force and the Stockage List Type Four for the Marine Corps. These 3 products are part of the LSA-030 report and need to be specified when asking for the LSA-030 report. The DID for this report is DI-ILSS-81156A. The Component of End Item List (COEIL), Basic Issue Items List (BIIL), Additional Authorization List (AAL), and Expendable Durable Materials Supply List (EDMSL) are also used as source data for TM development. Those four lists and the Marine Corps Stockage List Type Three are contained in the LSA-040 report. The DID for this report is DI-ILSS-81160A. Appendix B of Army TM's will include the Maintenance Allocation Chart (MAC), the LSA-004 report. The LSA-033 report will satisfy the requirements to develop an operator/crew and organizational level PMCS TM.

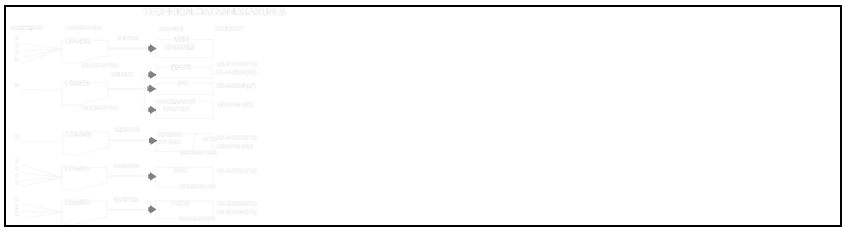

FIGURE 2.4

20.4.5 Support and Test Equipment. The reports, in figure 2.5, are used when developing pieces of support equipment. The Support Equipment Recommendation Data (SERD) report, LSA-070, describes requirements for a piece of support equipment. The DID for this report is DI-ILSS-80118C. The

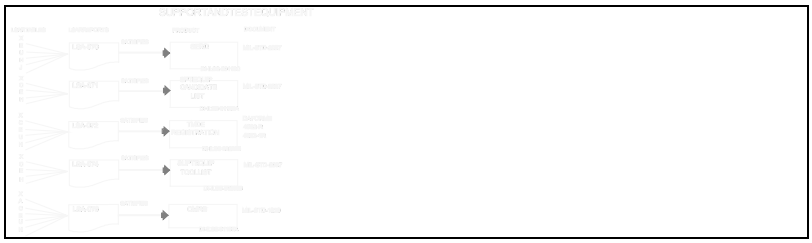

FIGURE 2.5

LSA-071, Support Equipment Candidate List, provides a list of support equipment requirements by active and disapproved candidates. The DID for this report is DI-ILSS-81166A. The LSA-074 report, Support Equipment Tool List, provides a list of tools currently in the inventory and tools that are not in the inventory, but need to be developed. The DID for this report is DI-ILSS-80289B. These three reports satisfy the requirement established by MIL-STD-2097. When a piece of support equipment needs to be registered in the Army inventory, use the LSA-072 report, Test Measurement and Diagnostic Equipment (TMDE) Registration. The DID for this report is DI-ILSS-80288B. To satisfy MIL-STD-1839 use the LSA-076 report, Calibration Measurement and Requirement Summary (CMRS). The DID for this report is DI-ILSS-81167A. This report provides details of the TMDE and its calibration procedures.

20.4.6 Supply Support. Figure 2.6 identifies two of the reports used in the supply support area. During the engineering design effort there will be requirements for screening parts thru Defense Logistic Service Center (DLSC) files. This is used to identify any new parts, brought about by the design effort. The new parts identified by this process will be introduced into the military inventory. DLSC screening can identify a part that already exists in the inventory. The DID for this report is DI-ILSS-81286. The LSA-036 report provides these lists for provisioning requirements: Provisioning Parts List (PPL); Long Lead Time Items List (LLTIL); Repair Item List (RIL); Interim Support Items List (ISIL); Tools and Test Equipment List (TTEL); Common and Bulk Items List (CBIL); Design Change Notices (DCN); System Configuration Provisioning List (SCPL); Short Form Provisioning Parts List (SFPPL); and Post Conference List (PCL). The lists produced by the LSA-036 report satisfy the requirements of MIL-STD-1388-1A, Notice 4. The DID for these Provisioning lists is DI-ILSS-81285.

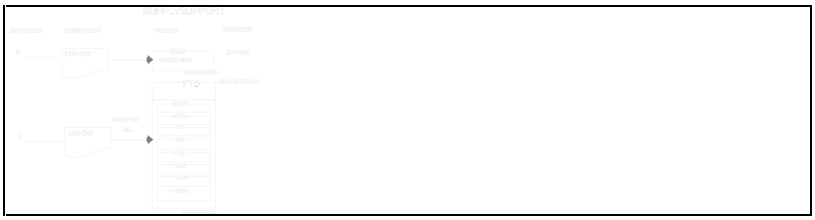

FIGURE 2.6

20.4.7 Supply Support (continued). These 3 reports, figure 2.7, are used to document supply support. There may be a need to check the LSAR data against a drawing. This would be done to make sure that every part within the drawing breakdown is within the LSAR. The LSA-080 report would be used for this purpose. The DID for this report is DI-ILSS-81169A. The LSA-151 report provides a cross reference between referenced number and the applicable

Provisioning List Item Sequence Number (PLISN) of the provisioning list as required by MIL-STD-1388-1A. The DID for this report is DI-ILSS-81287. When Spares Acquisition Integrated with Production (SAIP) is invoked, the LSA-155 report will satisfy that requirement. The DID for this report is DI-ILSS-80293B.

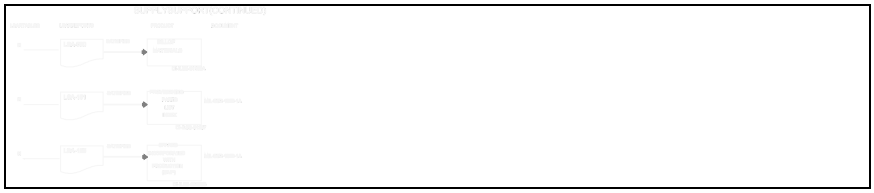

FIGURE 2.7

20.4.8 Manpower, Personnel, and Training. These 5 reports, Figure 2.8, are used for identifying manpower, personnel, and training (MPT) considerations. In the area of MPT the LSA-019 report can be used as feeder data to the task skill analysis. The LSA-018 report can be used to develop a task inventory list. This report should be used when there is a need for the development of human factors type task analysis. This report will satisfy MIL-STD-1478. The DID for this report is DI-ILSS-81152. The LSA-014 report should be requested when a training task list is required. This report will satisfy the requirements of MIL-STD-1379. The DID for this report is DI-ILSS-81150A. The Army's LSA-065 report, the Manpower Requirements Criteria (MARC) summary, will satisfy the requirements for a MARC report. The DID for this report is DI-ILSS-81165A. The Manprint report, LSA-075, can be used as the Manprint report. The DID for this report is DI-ILSS-80290B.

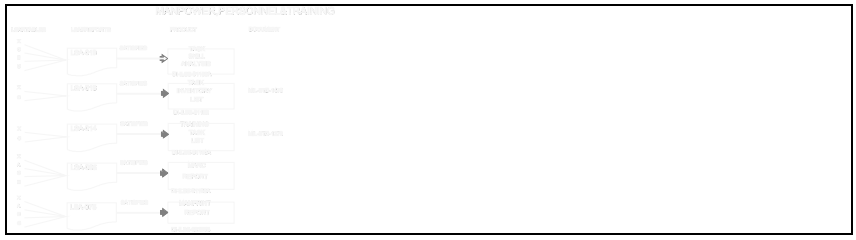

FIGURE 2.8

20.4.9 Facilities. In the area of facilities, Figure 2.9, the LSA-012 report can be used to identify the facilities needed to do maintenance tasks and training. This report can be used by the services to develop their service peculiar facility requirements. The DID for this report is DI-ILSS-81148A. The LSA-077 report should be used when there is a need for a joint depot maintenance facility. This report can be used to satisfy those requirements of JCL Forms 28/29/30. The DID for this report is DI-ILSS-80291B

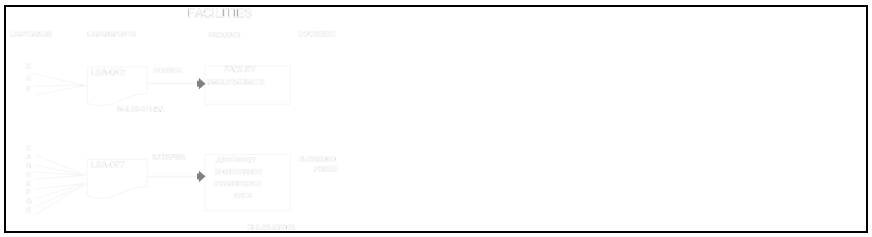

FIGURE 2.9

20.4.10 Packaging, Handling, Storage, and Transportability. Figure 2.10 identifies the reports that can be used in the packaging, handling, storage, and transportation areas. The LSA-025 report and LSA-026 report can be used to identify those requirements for packaging developmental data and packaging requirements data. These reports will satisfy the requirements of MIL-STD-2073-1. The DIDs for these reports are DI-PACK-80120 and DI-ILSS-81154A, respectively. The LSA-085 report will provide source data to the transportability report. The DID for this report is DI-ILSS-81170A.

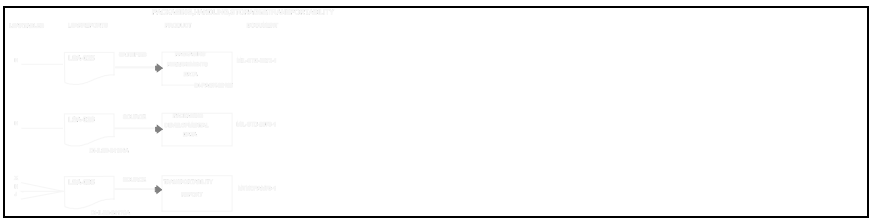

FIGURE 2.10

20.5 LSAR Analysis Reports. There may be times when a product report is not needed and an analysis report will suffice. These analysis type reports can be used to analyze different logistic needs. These next paragraphs describe the analysis reports and identifies the DIDs associated with each report.

20.5.1 LSA-001, Annual Man-Hours by Skill Specialty Code and Level of Maintenance. The report is divided into two parts. It is used to determine manpower requirements of the system/equipment, and to determine the time required and number of personnel, by Skill Specialty Code (SSC), and person identifier to perform each task. Part I contains a summary of annual man-hour expenditures by maintenance levels and SSC. Man-hour totals are based on the number of systems supported by level of maintenance. Part II contains a report of the man-hours, by person identifier, expended on each maintenance task. The DID for this report is DI-ILSS-81138A.

20.5.2 LSA-003, Maintenance Summary. This report compares the current status of the system maintenance parameters with the requirements recorded on the A data tables. The DID for this report is DI-ILSS-81139A.

20.5.3 LSA-005, Support Item Utilization Summary. This report, by ICC, shows the use of the item by maintenance level and LCN. The report should be used to justify the requirement for support equipment and determine the quantity and distribution requirements. The report should also be used to determine recommended order quantities of repair parts based on their total use. The DID for this report is DI-ILSS-81141A.

20.5.4 LSA-006, Critical Maintenance Item Summary. This report provides a list of all maintenance tasks which exceed a specific value for task frequency, or elapsed time, or man-hours, or annual man-hours. The specific value(s) exceeded is identified as critical criteria. The report may be selected for any maintenance level or combination of levels and for scheduled or unscheduled maintenance. The report should be used to pinpoint problem areas and plan maintenance for critical components. The DID for this report is DI-ILSS-81142A.

20.5.5 LSA-007, Support Equipment Requirements. This is a report of all support equipment (i.e., tools, test equipment, etc.) utilized by SSC and level of maintenance. The report may be selected for any maintenance level or combination of levels. This report should be used to develop tool kits for each skill specialty at each level of maintenance. The DID for this report is DI-ILSS-81143A.

20.5.6 LSA-008, Support Items Validation Summary. This summary provides a listing of those support items required to support/perform the task at each maintenance level. The support items are categorized in groups of:

Support/Test Equipment and Tools (ICC D, G, H, M, N, P, R, V, 1-8, AC)
Spare and Repair Parts (ICC X, Y, Z, 9, AA, AB, AE)
Other (ICC, E, F, J, Q, S, T, W, AD)

This summary should be used to review support items requirements for the maintenance and operator task(s) involved and may be selected for an entire equipment, specific LCN range, maintenance level, or ICC(s). The DID for this

report is DI-ILSS-81144A.

20.5.7 LSA-009, Support Items List. This is a report by LCN, reference number, and national stock number (NSN), of all repair parts, tools/test equipment necessary to support the system/equipment. The report should be used to provide information necessary to assist in performing provisioning. The DID for this report is DI-ILSS-81145A.

20.5.8 LSA-010, Parts Standardization Summary. This is a report by reference number of all spare and repair parts comprising the system/equipment. It can be utilized to assist in performance of DOD Replenishment Parts Breakout Program. The DID for this report is DI-ILSS-81146A.

20.5.9 LSA-011, Requirements for Special Training/Device Summary. This is a report of all operator or maintenance tasks, which have been identified as requiring a special training device and the narrative explanation of the training equipment requirement. The report should be used to identify the requirements, and provide justification, for the acquisition of training devices. The DID for this report is DI-ILSS-81147A.

20.5.10 LSA-013, Support Equipment Grouping Number Utilization Summary. This is a report by maintenance level and Support Equipment Grouping Identification Number of the tasks, which use the support equipment group. The report should be used to provide the requirements, quantity, and justification for the acquisition of support equipment. The DID for this report is DI-ILSS-81149A.

20.5.11 LSA-027, Failure/Maintenance Rate Summary. This report identifies an item and annual operating requirements by LCN and task code. This report should be used to provide information necessary to monitor failure rates, failure modes, task frequencies, and MRRs. The DID for this report is DI-ILSS-81155A.

20.5.12 LSA-037 Spares and Support Equipment Identification List. The purpose of this report is to provide information that identifies the investment spares (Section I), expense spares (Section II), support equipment (Section III), and tools and test equipment (Section IV) required for system support under contractor logistic support. The DID for this report is DI-ILSS-81158A.

20.5.13 LSA-039, Critical and Strategic Item Summary. This is a report of items assigned a critical item code (CIC) or industrial materials analysis of capacity (IMAC) code. Part 1 of the report lists CIC items. Part 2 of the report lists IMAC items. The DID for this report is DI-ILSS-81159A.

20.5.14 LSA-046, Nuclear Hardness Critical Item Summary. This summary provides a listing of all support items which are coded as nuclear hardness critical. The DID for this report is DI-ILSS-81161A.

20.5.15 LSA-078, Hazardous Materials Summary. This report provides a summary of all hazardous materials required to support a selected end item. This summary identifies all items having associated hazardous materials storage cost, hazardous waste storage cost, and hazardous waste disposal costs. This summary also identifies the maintenance tasks requiring quantities and costs

per task. The summary is used to eliminate or reduce identified hazardous material items during the system design process. The DID for this report is DI-ILSS-81168A.

20.5.16 LSA-126, Hardware Generation Breakdown Tree. This summary provides a concise summary of information pertaining to a system/equipment breakdown. Each item is blocked in and indented to the proper level in the hardware family tree and displayed by line relationship beneath the appropriate assembly in which the item is contained. The DID for this report is DI-ILSS-81171A.

20.5.17 LSA-152, PLISN Assignment/Reassignment. This summary provides a listing, by reference number, of PLISN, Indenture Code (IC), Next Higher Assembly (NHA) PLISN, and PRIOR ITEM PLISN, assigned by the LSAR system based on parameters of the assignment select card. The summary is automatically produced and will depict the file content before and after the assignments or reassignments are made (PLISNs are assigned using the EBCDIC collating sequence). As an option, this report can be used to assign provisioning related control and reference data to the LSAR Master Table. The DID for this report is DI-ILSS-81172.

20.5.18 LSA-154, Provisioning Parts Breakout Summary. This report provides a two-part summary of each reference number and can be utilized to assist in performance of the DOD Replenishment Parts Breakout Program. Included in part I of the report are critical pricing and breakout program information. Part II contains selected parts application data. The DID for this report is DI-ILSS-80292B.

20.6 AD-HOC Queries. If neither product or analysis reports can satisfy a requirement AD-HOC Queries are another option. AD-HOC reports can be created, when using a Relational Data Base Management System (RDBMS), to satisfy a requirement when it can not be satisfied by the standard reports. MIL-STD-1388-2B, Appendix A, data tables, were developed in a relationalship format and should reside on a RDBMS. Most RDBMS use Structured Query Language (SQL) for AD-HOC capabilities. Some have advanced capabilities to help build queries without knowing SQL.

20.6.1 Example AD-HOC Query. Since SQL is the basic query language of all RDBMS it will be used to develop an example query. In this example there is a need to compare the 3rd and 4th positions, maintenance levels, of the SMR code to the 3rd position, maintenance level of the task code. This requirement can not be satisfied by LSAR reports; therefore, an AD-HOC query is required for this comparison. The AD-HOC query, using SQL, would look like this

```
1  SELECT HG.EIACODXA, HG.LSACONXB, HG.ALTLCNXB, HG.CAGECDXH, HG.REFNUMHA,
HG.SMRCODHG, CA.TASKCDCA
2  FROM CA, HG
3. WHERE HG.EIACODXA = CA.EIACODXA
4  AND HG.LSACONXB = CA.LSACONXB
5  AND HG.ALTLCNXB = CA.ALTLCNXB
6  AND HG.LCNTYPXB = CA.LCNTYPXB
```

This simple query will print out the End Item Acronym Code (EIAC), LCN, ALC,

Commercial and Government Entity Code (CAGE), Reference Number, SMR Code, and Task Codes. The comparison can then be done manually. To do a comparison automatically would be a more in depth query which should be developed by a programmer.

20.7 DD Form 1949-3, LSAR Data Requirements Form. When the reports needed for either products or analysis are identified, the DD Form 1949-3 can be completed. To fill out the 1949-3 use figure 14 in appendix B of MIL-STD-1388-2B, to identify the data elements needed for the reports.

20.7.1 Data Element Selection. The best way to show how the data elements are selected is by example. In this example a FMECA report, LSA-056 report, is required by the reliability community. The first step is to use figure 14, in appendix B, of MIL-STD-1388-2B or figure 2.11 (an excerpt from figure 14 and DD Form 1949-3) to identify the data elements and their corresponding tables. To identify the data elements needed for the LSA-056 report look across the top of figure 2.11 and identify the LSA-056 report column. Next identify the data elements that have a mark in that column. If a data element has any mark in the column then it should be marked as required on the DD Form 1949-3.

20.7.2 Selection of 1949-3 Data Elements. The LSAR data requirements form (DD Form 1949-3) provides a vehicle for identifying the required LSAR data elements to be completed and, when applicable, the media of delivery. Preparations of the LSAR data requirements forms should be a result of the LSAR tailoring process. The data requirements form can be used to identify the specific data elements that are required and identified on the relational data tables. DD Form 1949-3, LSAR data requirements form is referenced by paragraphs 4.1, 5.1, and 5.2 in the main body of MIL-STD-1388-2B.

20.7.2.1 DD Form 1949-3 Sections and Parts. The 1949-3 consists of a general information section plus two other sections. The first section consists of RA furnished data. Spaces are provided to allow the RA to fill in values for these data elements. The second section consists of the LSAR data selection sheets and is divided into three parts. Part I is the LSAR data selected by an entry in the Required column. Part II is the LSAR provisioning data selected by an entry in the required column and the type of provisioning list. Part III is packaging data selected by an entry under a packing categorization.

20.7.2.2 DD Form 1949-3, General Information. The general information section of the 1949-3 explains the codes appearing in the key column of the data selection sheets. These key codes are designed to make the selection of data a non burdensome process. The media selection, the header, and sequencing, provisioning lists, and provisioning guidance conference information are also in this section.

20.7.2.3 Section 1 of DD Form 1949-3, Government Furnished Data. This section consists of the data elements that should be provided by the RA. The first sheet, page 4, consisting of information from tables XA, AI, AJ, and AK which pertains to the end item. This sheet should be filled out once for each end item documented in the LSAR. The second sheet, pages 5 and 6, should be filled out by the RA and pertains to the item or LCN under analysis. This sheet may filled out against any item or LCN for which the RA feels should be

given to the developer. There may be numerous sheets identifying the information for each item or LCN for these tables XB, XC, AA, AB, AC, AD, AE, AF, AG, and AH. The third sheet, page 7, consisting of information form tables EA and EB, it should be filled out by the RA and pertains to one piece of support equipment that is or will be supporting the item under analysis. The forth sheet, page 8, consisting of information from tables UA, HA, HG, and HP should be filled out by the RA and pertain to the item under analysis.

20.7.2.4 Peculiarities of the 1949-3. Part I of section 2, of the 1949-3, consists of data pertaining to the item(s) under analysis. The information is grouped in relationalship table format, for functional area's (X, A, B, C, E, U, F, G, H, and J tables) . There are peculiarities of DD Form 1949-3, figure 2.11, that should be pointed out. It must be understood that as the tables progress from parent to child the data element which were keys in the parent table are then dropped off of the child table (e.g. XA table, EIAC is dropped when the information is used in the XB table). It also means that when information is selected in a child table there should be a concerted effort to make sure that the keys which form the parent tables are selected. This holds true within a functional area. At the start of each functional area the main set of keys will be duplicated (e.g. BA table has End Item Acronym Code, LCN, ALC, and LCN Type all which originate in the X tables) this is done to facilitate the parent to child relationships between functional areas.

20.7.2.4.1 Data Element Selection. Selection of a data element shall constitute the selection of data keys or data dependencies required to document the element in the LSAR data base. One thing that must be stated is that the only mandatory data elements for a report are the ones identified by a F, K, * or M in the report column of figure 14, MIL-STD-1388-2B. Where more than one data element code applies to a data selection, the code column contains dashes (----) (e.g. Table XA, Personnel Turnover Rate is divided into two categories civilian and military, but is included under one data element definition). For narrative data, where each data element definition is separately selectable to a common data table, the code column is blank (e.g. Table BB, RAM Characteristics Narrative; Item Function, Maintenance Concept, Minimum Equipment List Narrative, Qualitative and Quantitative Maintainability Requirements, and Maintenance Plan Rationale are narrative data and their corresponding code fields are blank). Text sequencing codes for narrative, measurement bases and unit of measures are not show in the 1949-3 because they are required for the narrative or numeric data element to exist in the data base. There are exception to this rule for measurement base and unit of measure, this exception occurs only when the measurement base or unit of measure is a key in that table.

20.7.2.5 Data Element Selection DD Form 1949-3 Example. Figure 2.11 shows the data elements needed for the FMECA report, LSA-056, from figure 14 of MIL-STD-1388-2B, and transfers the selected data elements to the 1949-3. First identify the LSA-056 column, then find the data elements that have a mark next to them. If the data elements have any mark by them then they are needed for processing or can be output on the LSA-056 report. The first data element,

EIAC, needed for the LSA-056 report is pulled from the XA table. The next data elements needed for the LSA-056 report are LCN, ALC, LCN Type, LCN Nomenclature, Technical Manual/Functional Group Code (TM/FGC), and the Reliability, Availability, and Maintainability (RAM) Indicator. Now look at the 1949-3, notice that the EIAC doesn't exist in the XB table and that's because the EIAC doesn't originate in the XB table. When a data element is a key it only shows on the 1949-3 in the table in which it originated. Find the next table that has a mark in the 56 report column. The next table is XC, the 56 report requires the use of the UOC and Provisioning Contract Control Number (PCCN). The PCCN is selected for the 56 report because it is a mandatory data element in the XC table. Mark the UOC and PCCN in the XC table on the 1949-3. The XF and XG tables are needed for system processing so they must be marked on the 1949-3. The cage code is needed from the XH table so it must be marked also. The next data elements marked as required is the EIAC, LCN, ALC, and LCN type from the BA table so mark them on the 1949-3. (NOTE A; These main set of keys that establish a functional area are repeated again on the 1949-3. The EIAC is established in the XA table and the LCN, ALC, and LCN Type are established in the XB table, and are marked accordingly, but they are also marked at the start of a functional area. The RA should not pay for these data elements again, because they were already established in the cross functional area.) Only one other data element is needed from the BA table and that's the failure rate data source, so it needs to be marked on the 1949-3. The next data elements to be marked on the 1949-3 are the RAM characters narrative code and the RAM minimum equipment list narrative from the BB table. (NOTE B; On all narrative tables, such as the BB table, the Narrative code must be selected to identify which narrative is needed for the report). The LSA-056 report also requires information from the BC table in the form of Logistic Consideration Code and the logistic narratives associated with these codes. The LSA-056 needs additional information form the BD table in the form of the RAM indicator code, failure rate and failure rate measurement base (MB). (NOTE C; In all cases the measurement base for any item is automatically selected when the item its associated with is selected. This is very similar to Note B in that on the 1949-3 there is not a failure rate MB to select, but is inherently selected when the failure rate is selected. Both the item and its MB must be used for the item to pass ADP system requirements.) Failure mode indicator, engineering failure mode Mean Time Between Failure (MTBF), and failure mode ratio are selected from the BF table and should be marked on the 1949-3. The BG table is similar to the BB table. The Failure Mode and Reliability Centered Maintenance (RCM) narrative code is needed to distinguish between the narratives from the BG table on the 56 report. The narratives needed are: failure damage mode effect local, next higher and end effect; failure cause; failure damage mode; failure mode detection method; failure mode predictability; failure mode remarks; and redesign recommendations narrative. The task requirement LCN, task requirement ALC, task requirement LCN Type, task code, and task type are needed from the BH table. (Note D; The task requirement LCN, task requirement ALC, task requirement LCN Type, and task code originate in the CA table, but to tie the repair tasks to their failures are shown in the BH table also.) The Safety Hazard Severity Code (SHSC), Failure Effect probability, Failure Mode Criticality Number, Failure Probability Level, and Operation Time are selected from the BI table. The narrative compensating design provisions and compensating operator actions are selected from the BJ table. The RAM SHSC and Item Criticality Number are selected form the BK table. The Mission Phase code and Mission Phase

Operation Mode are selected from the BL table. Reference back to Notes A and D, EIAC, LCN, ALC, LCN type, and Task Code are selected from table CA. Also selected from the CA table are the referenced LCN and AOR LCN. The Cage Code, Reference number, Reference Number Category Code (RNCC), Reference Number Variance Code (RNVC) are needed by the 56 report, from table HA, to identify the Drawing Number; therefore, they are selected on part II of the 1949-3. There is also a possibility that there is alternate or additional drawing numbers for the item under analysis and those alternate or additional drawing numbers are pulled from the HB table in part II. To pull these additional drawing numbers the Additional Reference Number (ARN) CAGE Code, ARN Reference Number, ARN category Code, and ARN Variance Code must be selected from the HB table. The last data elements required for the 56 report are the EIAC, LCN, ALC, and LCN type from table HG. This is where the LCN for the item and the reference number for the item are tied together for part application. This table is used as a link to get the drawing number needed for the LSA-056 report.

20.8 Delivery of LSAR Data. The delivery of LSAR data can consist of hard copy, master tables, on-line access or a combination of all three. Each of these delivery options should be considered carefully. What is provided next is a description of each option and its pro's and con's.

20.8.1 Hard Copy LSAR Reports. The RA and MD can ask the developer to delivery hard copies of the product, analysis or AD-HOC reports to be used as products or as inputs into final products or analysis reports. The RA and MD would request these reports, who should receive them, any specific selection options, when delivered, and the report DID numbers should be called out on DD FORM 1426, CDRL. A statement could be made in the SOW that states the reports should be delivered in accordance with the CDRL.

PRO'S. The RA and MD can hold the developer accountable for the final products.

CON'S. The RA and MD will have to pay for each delivery and paper report. These usually contain outdated information. The RA and MD will have to create the AD-HOC query or request that the developer create it.

20.8.2 Master Table Delivery. The RA and MD may request that the master tables be delivered so that the different LSAR products, analysis, or developed AD-HOC reports can be produced. The RA and MD would request the master tables, who should receive them, when delivered, format and the master table DID number on DD FORM 1426, CDRL. A statement could be made in the SOW that states the master tables should be delivered in accordance with the CDRL. The RA and MD will need a MIL-STD-1388-2B validated LSAR ADP system to produce these reports.

PRO'S. Cost wise it is toward the RA's and MD's advantage, if they

have a 2B LSAR ADP system, to have the developer provide the master tables for loading into the RA's and MD's ADP system. The RA and MD can produce the reports and as many of the reports as needed.

CON'S. The RA and MD can not hold the contractor accountable for the final products. The master tables will need to be updated incrementally to show the latest data. Again there will be some lag time for the data. The RA and MD will be responsible for the AD-HOC query development.

20.8.3 On-Line Access. The RA and MD may request the capability of on-line access to review the LSAR data without a need for paper products. The RA and MD would request this capability in the SOW. There are considerations for on-line access. The RA and MD should decide if these considerations should be put in the SOW. The consideration are: is there a need for communication hardware or software to access the developers database, how many users will there be, are there any interfacing requirements with other databases, will there be a dedicated line, will people need training on how to access the database and run standard and ad-hoc reports, security issues, who has access to the computer, and on-line comment capability. These are the things that must be considered and specified in the Statement of work when a developer provides these service to the RA and MD.

PRO'S. The RA and MD will have the latest information. The RA and MD will be able to make comments, on the data in the data base, on-line. The on-line comment capability will mean a reduction in TDY costs. The RA and MD can produce the product, analysis and AD-HOC reports when required. On-site reviews are reduced.

CON'S. There will be additional costs for this on-line access capability.

20.8.4 Delivery Combination. The RA and MD may want the best of all worlds. He may want to have on-line access, with the master tables delivered at the end of the phase, and have the developer responsible for certain product reports. The RA and MD would request the master tables and reports, who would receive them, when delivered, selection options, delivery format, and DID numbers on DD FORM 1426, CDRL. The on-line access capabilities and any special requirements associated with these capabilities would be documented in the SOW.

PRO'S. The RA and MD can hold the developer accountable for some of the most important final products. The RA can have the master files for historical purposes. He can have up to date information using the on-line access capability.

CON'S. Cost.

20.9 Example Statement of Work. This is an excerpt from a SOW produced by Logistics Planning and Requirements Simplification System (LOGPARS) concerning the documentation of data in the LSAR and the different possible delivery

modes.

C.3.4. Logistic Support Analysis Record (LSAR). LSAR Data.

a. Data and information generated from the LSA program tasks shall be documented and maintained in the LSAR IAW MIL-STD-1388-2B, and the requirements contained herein. The LSAR shall be developed as the central file of validated, integrated and design related logistic data for the system. The LSAR shall be maintained as specified in the approved LSA plan and herein. The LSAR shall be used to satisfy applicable and related data items as specified in the CDRL.

b. The contractor shall update LSAR documentation to reflect changes in support requirements resulting from:

(1) Changes to equipment design, support or operational requirements as a result of logistic demonstration, TM reviews, training results, contractor/government testing or other ILS considerations.

(2) Logistic support improvements or the correction of deficiencies discovered through analysis of test results or by the contractor's verification of LSAR documentation.

(3) ILSMT/LSAR review team recommendations.

c. The contractor shall assign LCNs to individual equipment items to facilitate data storage and retrieval. The structure of the number shall represent a hardware generation breakdown of the hardware and will include support and test equipment, training equipment, and installation hardware items. Each item of equipment, from the end item down to each individual piece part shall be assigned a unique LCN. The LCN will be assigned for each application of the item throughout the system to identify its relationship to the next higher assembly. The LCN structure must agree with the hardware breakdown as it will be displayed in the engineering drawings for the equipment. The contractor is responsible for ensuring the compatibility and integration of subcontractor/vendor LCNs within the overall coding arrangement. The first character of the LCN may be assigned by the procuring agency to maintain compatibility with the Work Breakdown Structure (WBS) codes, the Commodity Command Standard System (CCSS), and other government management information system requirements. The contractor's proposed numbering system shall be described in the LSA plan and requires government approval.

d. The contractor shall establish and maintain automated sets of LSAR data for the management and control of the LSAR. As a minimum, the contractor shall maintain a set of LSAR review data and a set of government approved LSAR data. The LSAR data in the review set shall be data that has been subjected to the internal contractor review procedures and frozen pending review and approval by the government. The LSAR review data shall be updated with new additions on a weekly frequency regardless of the approval status of their content since the last update. Upon government approval, LSAR data contained in the review data set shall be transferred to the government approved LSAR data set. All government-directed changes resulting

from LSAR reviews shall be incorporated prior to the relocation of the data. The government approved LSAR data shall be cumulative of all government-approved LSAR data.

The contractor shall provide LSAR output reports and LSA master files in the following forms:
- hard copy

In addition to the predefined LSAR output reports, the contractor shall establish and maintain the capability for on-line ad hoc query/report generation. AD HOC reporting capabilities shall be defined by the contractor's LSAR ADP system software and presented in the LSA portion of the proposal. As a minimum, the ad hoc report generation shall be capable of keying on and displaying all LSAR data elements as identified on the attached DD Form 1949-3.

The software will provide the capability for terminal display of the specified queries or data files in 80 and/or 132 character format and will include the capacity to print the queries on a local printer at the designated locations. The user shall have the capability to specify queries from the review data set, the approved data set, or a combination of the two. The contractor shall provide the Government with interactive access capability Monday thru Friday 0800-1700. Government use of the access capability shall be limited as described below:

Access shall be limited to the following location: - LOGSA, Huntsville, AL

The contractor shall establish the telecommunications capability using one or more of the following methods and shall establish a means for ensuring completeness and accuracy of data transmissions:
- Point-to-point dedicated lines

In addition, the contractor shall provide:
- hardware and software for each of the designated locations

Data Interface. The LSAR shall be used to the maximum extent feasible to satisfy requirements for deliverable data as listed on the current CDRL and for future deliverable data requirements.

o Maintenance Allocation Chart (MAC) IAW the CDRL. LSA-004, Maintenance Allocation Chart shall be utilized as the data base to satisfy the CDRL for a MAC. The LSAR will be used to produce both of these reports in "proof" version in conformance with the requirements of MIL-M-63038B.

o Provisioning Technical Documentation. The contractor shall plan for and provide provisioning requirements IAW provisioning procedures as stated in MIL-STD-1388-2B and the CDRL. The LSA-036 report shall be used to satisfy the requirements for provisioning data. A list of specific provisioning lists is contained in paragraph C.9, Supply Support, of this SOW.

o Technical Manuals. The LSAR shall be used as source data for the technical manuals required as a part of the contract. The LSA-019 report shall be used to develop the narrative portion of the manuals. The LSA-033

report shall be used to identify crew/operator Preventive Maintenance Checks and Services for the operator's technical manual. The LSA-040 report shall comprise the Authorization List Items Summary which includes sections listing end item components, basic issue items, additional authorization items and expendable/durable supplies and materials.

o Repair Parts and Special Tools List. The LSA-030 reports shall be used to satisfy the requirement for a RPSTL. The LSAR is capable of producing both of these reports in final form and satisfies the requirements of MIL-STD-335.

o Support Equipment Recommendation Data (SERD). The LSA-070 report shall be used to satisfy the requirement for a SERD. This report satisfies the requirements contained in MIL-STD-2097.

o Transportability. The LSA-085 record shall be used as source data to satisfy the requirements for transportability data as required by the Military Traffic Management Command Transportation Engineering Activity and this SOW.

o TMDE Requirements and Registration Data. The LSA-072 report shall be used to satisfy the requirements for TMDE data as required by AR-750-43 and this SOW.

o Packaging Data Requirements. The LSA-025 and LSA-026 reports shall be used to satisfy the requirements for packaging data as required by MIL-STD-2073.

o Depot Maintenance Study/Plan. The LSA data report shall be used as source data to document the requirements for depot maintenance as required by the SOW. Depot maintenance interservice data will be provided in the LSA-077 report IAW the CDRL.

o Parts Control Program. The LSA-154 report shall be used as source data for the Parts Control Program as specified be MIL-STD-965 and required by this SOW.

20.10 Conversion From 1388-2A to 1388-2B. The RA may request that a previous LSAR effort be converted to MIL-STD-1388-2B format. The RA would request this action be accomplished in the SOW. The previous LSAR effort may consist of data for this item, from another system or from a previous life cycle phase. The data needs to be reviewed to see if it can be converted at a minimal expense. If the data is coming from a MIL-STD-1388-2A format 85% of the MIL-STD-1388-2A data can be converted to MIL-STD-1388-2B format. A MIL-STD-1388-2A to MIL-STD-1388-2B conversion routine may be obtained free of charge from USAMC LOGSA at (205) 955-9836. If the data is coming from a Army DARCOM 750-16 LSAR system 75% of the data is converted. This conversion routine can be obtained from LOGSA at (205) 955-9867.

20.10.1 Additional Data. When a system is converted from either 2A or 750-16 format there needs to be a consideration of whether new data needs to be generated to correct deficiencies or to satisfy new requirements. If additional data is required, the additional data elements must be identified

on DD Form 1949-3. The RA must decide if there is value added with the purchase of the new data elements. Value added can consist of the capability to produce final products automatically instead of by hand, eliminate old man power intensive ADP system, the ability to have AD-HOC reporting capability, and the increase efficiency of the developers ADP systems.

LSAR REPORT SPECIFICATIONS

30. LSAR REPORTS. This chapter describes each of the 48 standard LSAR reports. The report specifications are broken out by selection options, processing, format, report sequence, and data sources. The selection options paragraph identifies mandatory and optional selections that can be made by the user to tailor the report output. In the processing paragraph many things are discussed including qualifying criteria for report data, report calculations, and specific instructions regarding how the data should be presented on the report. Each specification has an attached sample report showing its format. Report sequences specify the sort criteria for a given report, and each Part/Section within a report. There is an attached listing of data sources for the elements that are on a report. This data source listing provides the report header for each element; and its MIL-STD-1388-2B table, DED number, and 8 position element codes. The data source listings were developed by viewing each report in a left-to-right, top-to-bottom sequence. If an element shows up more than once on a report and each subsequent occurrence is pulled from the same MIL-STD-1388-2B table location as the previous one, then that element is only listed once in the data source listing. However, if an element is listed more than once and each occurrence is pulled from different MIL-STD-1388-2B table locations, then that element will be listed for each report occurrence. In addition to the data source listings, the report formats contain a 11 position codes which provide the MIL-STD-1388-2B table and 8 position element code where this data element is pulled from (i.e., CA.LSACONXB is the LCN pulled from the CA table).

30.1 COMMON SELECTION CRITERIA. For a majority of the reports there are 7 common selections. These common selections are EIAC, LCN, ALC, LCN Type, UOC, Service Designation Code, Operations and Maintenance Level (O/M), and Item Category Code (ICC).

30.1.1 EIAC. LCN selections must specify an EIAC parameter.

30.1.2 LCN. LCN selections may have both a start LCN and a stop LCN. If a start and stop LCN are selected then it will pull those LCNs that fall within that range of LCN's selected, it is interpreted as such (Start LCN $\leq$ LCN < Stop LCN), unless start and stop LCN are equal then just pull that LCN. If a Start LCN is selected but not a stop LCN then only that LCN leg will be pulled. Selections from the "A", "B", "C", "F", "G", and "J" tables which may have data under combinations of functional and physical LCNs, the following rules apply:

a. If the report selection specifies an LCN Type "F", an attempt to match each qualified LCN to the XG functional/physical LCN mapping table is first performed. If a match is found in this table, then report data is extracted under the physical LCN equivalent. The Functional LCN, however, is displayed on the summary. If no match for a functional LCN is found, then search for the report data for the non-matched LCN is conducted using the functional LCN value directly.

b. If the report selection specifies a "P" LCN Type, the search for report data is conducted directly under the appropriate tables for report generation. It will not be necessary to search under the XG table for functional equivalent LCNs.

30.1.3 ALC When a selection is made with a specific ALC, only items matching the selected ALC are displayed. If ALC is left blank on a selection, then other report qualifiers only, e.g., LCN range, UOC, are used.

30.1.4 UOC. UOC's are mandatory on most of the reports and are used to identify specific model of the end item.

30.1.5 SERVICE DESIGNATION. For selections, choosing a SERV DES of A, F, N, or M results in the selection of the matched SERV DES and X and J codes. Choosing code T results in selection of T and J. Choosing X, J, S, or O results in only those codes being selected. Service Designator codes are interpreted as follows:

A	ARMY	T	FAA
N	NAVY	S	NSA
F	AIR FORCE	Y	COAST GRD
M	MARINES	J	FAA/SERV
X	ALL SERV	O	OTHER

30.1.6 O/M LEVELS. O/M levels will interpret the 3rd position of the task code as follows:

Army (A)		Air Force (F)	
C	CREW	C	CREW/OP
O	ORG	O	ORG
F	DS	F	INT(F)
H	GS	H	INT(H)
L	SRA	L	SRA
D	DEPOT	D	DEPOT

Navy (N)		Marine Corps (M)	
C	CREW/OP	C	OP/CREW - 1ST ECH
O	ORG	O	ORG - 2ND ECH
F	AFL	F	INT - 3RD ECH
G	ASH/AFL	H	INT - 4TH ECH
H	ASH	L	SRA
L	SRA	D	DEPOT - 5TH ECH
D	DEP/YD		

All other Service Designators. Codes are not interpreted. (Display code only).

30.1.7 ICC's. The default value for selectable Item Category Codes (ICCs) is all applicable ICCs. Specifications denote allowable ICCs. If ICCs are selectable but not denoted in the specification, then all ICCs listed under Data Element Definition 173 (ICC) in Appendix E, MIL-STD-1388-2B are allowed.

30.2 SUBORDINATE LCN/ALC. Subordinate LCN/ALC selections can be of use when multiple configurations, or alternate design and maintenance concepts are stored on file for the equipment. The ALC specified for the subordinate selection(s) for any LCN within the LCN range of the basic card overrides the basic ALC selection. The output report will include the alternate assembly(s)

requested including its subordinate items, if applicable. Once the alternate assembly and their breakdown have been selected, the process will revert back to the configuration and LCN range specified on the basic selection. For example, if the basic selection is LCN = A, ALC = 00, no Stop LCN (implies a stop LCN of B), with subordinate LCN/ALC selections of A0102/01, A010207/02, and A04/01 yields the following LCN/ALCs selected:

LCN (From)	LCN (To)	ALC
A	A0101ZZZZZZZZZZZZZ	00
A0102	A010206ZZZZZZZZZZZ	01
A010207	A010207ZZZZZZZZZZZ	02
A010208	A0102ZZZZZZZZZZZZZ	01
A0103	A03ZZZZZZZZZZZZZZZ	00
A04	A04ZZZZZZZZZZZZZZZ	01
A05	AZZZZZZZZZZZZZZZZZ	00

30.3 TASK REFERENCING OR SUBTASK REFERENCING. Table CA in MIL-STD-1388-2B allows for referencing of tasks and their related information. To reference a task, a user will input the "Referenced" End Item Acronym Code (REFEIACA), LCN (REFLCNCA), ALC (REFALCCA), LCN Type (REFTYPCA), and Task Code (REFTSKCA) following the table CA key set (or "Referencing" keys). As paragraph 70.1.a of MIL-STD-1388-2B denotes, this task referencing capability should only be utilized when the data of table CA and subordinate tables CB-CI are identical for the referenced and referencing tasks. All non-key attributes in table CA and all data in subordinate tables (CB-CI) will be pulled from the Referenced Task and its subordinate tables. Therefore, only key entries, referenced task entries described above, and mandatory element entries (Task Frequency) are required in table CA, and no further entries are required in subordinate tables CB-CI. Subtask referencing is similar to task referencing. Paragraph 70.2.a in Appendix A of -2B describes the "Referenced" data elements that must be entered in table CB (same as table CA with the addition of Referenced Subtask Number) following the normal (referencing) key set entries. With subtask referencing, data is pulled from tables CB-CD (not CB-CI) of the referenced subtask for the referencing subtask and, therefore, tables CC and CD do not require further entries.

30.3.1 REPORT USAGE OF REFERENCED TASKS/SUBTASKS. When utilizing task or subtask referencing, two cautions should be remembered. First, many LSAR ADP systems allow only 1 tier of referencing for tasks and subtasks. In other words, task A can reference task B as long as task B does not reference task C (the same is true for subtasks). If task B does reference task C, then task A must reference Task C instead of task B. The number of tiers that an LSAR ADP system will allow for referencing is up to the developer’s discretion. Second, in any LSAR reports dealing with task information and related calculations, LSAR ADP systems must pull and utilize referenced task and subtask information for report outputs.

30.4 LSA-001 ANNUAL MAN-HOURS BY SKILL SPECIALTY CODE AND LEVEL OF MAINTENANCE REPORT SPECIFICATION

30.4.1 SELECTION. The LSA-001 summary is selectable by mandatory EIAC, Start LCN, LCN-TYPE, UOC and SERV DES; and optional ALC, Stop LCN, SSC, Number of systems supported per Maint Level (default=1) and Report Part (PARTS).

30.4.2 PROCESSING. The same qualifying criteria is used for both parts I and II. Task Codes are qualified by matching on selected SERV DES (Task Code 4th pos). Qualified tasks must have an entry in table CD with a valid Mean Man-Minute per Person ID (SUBMMMCD) over the range of selected LCNs.

a. It is possible to select only Part I of the report. If Part II is selected, Part I will also be displayed. If a selection is made by SSC, then both parts I and II will be generated.

b. Report calculations:

(1) Part II M-H PER PERSON ID is computed by summing all SUBMMMCD for each subtask entry matching an identical PERS ID (SUBPIDCD) and SSC (SKSPCDGA). This value is then divided by 60.

(2) Part II ANL M-H/ITEM is computed by multiplying the M-H PER PERSON ID (from b(1) above) by the Task Frequency (TSKFRQCA).

(3) Part II TOTAL ANL M-H is computed by multiplying the ANL M-H/ITEM (from b(2) above) by the NUMBER OF SYSTEMS SUPPORTED BY MAINTENANCE LEVEL input through the report selection.

(4) Part I Man Hour Summary MAN-HOURS is computed by summing all TOTAL ANL M-H for a given PERSON ID, SSC and Operations/Maintenance Level of the Task Code (TASKCDCA), position 3.

(5) PART I TOTAL NUMBER OF MAINTENANCE TASKS is computed by summing each qualified Task Code having contributed to man-hour computations.

30.4.3 REPORT FORMAT. See Figure 3.1

30.4.4 REPORT SEQUENCE. Part I is sequenced by ascending values of SSC. Part II is sorted also by ascending SSC. Within this sequence Tasks are sorted in ascending LCN then Task Code sequence.

30.4.5 DATA SOURCES. The source of data appearing on the LSA-001 summary is depicted below by data table and element codes.

Report header	Table Code	DED	Element Code
EIAC	XB	096	EIACODXA
LCN NOMENCLATURE	XB	201	LCNAMEXB
START LCN	XB	199	LSACONXB
ALC	XB	019	ALTLCNXB
TYPE	XB	203	LCNTYPXB

STOP LCN	XB	199	LSACONXB
UOC	XF/XC	501	UOCSEIXC
SERV DES	CA	427	TASKCDCA
SSC	CD	387	SKSPCDGA
SSE	CD	388	SSECDECD
NUMBER OF SYSTEMS SUPPORTED BY MAINTENANCE LEVEL: (SELECTED)			
SSC	CD	387	SKSPCDGA
C, O, F, H, G, L, D			
TOTAL NUMBER OF MAINTENANCE TASKS: (COMPUTED)			
SSC	CD	387	SKSPCDGA
LCN	CA	199	LSACONXB
NOMENCLATURE	XB	201	LCNAMEXB
LCN-TYPE	CA	203	LCNTYPXB
ALC	CA	019	ALTLCNXB
TASK CD	CA	427	TASKCDCA
TASK IDENTIFICATION	CA	431	TASKIDCA
TASK FREQ	CA	430	TSKFRQCA
MB	CA	238	AORMSBCA
SSE	CD	388	SSECDECD
PERS ID	CD	288	SUBPIDCD
TRG EQP	CA	358	TRNRQCCA
M-H PER PERS ID (CALCULATED)	CD	226	SUBMMMCD
ANL M-HR/ITEM (CALCULATED)			
TOTAL ANL M-H (CALCULATED)			
FGC	XB	438	TMFGCDXB

LSA-001

30.5 LSA-003 MAINTENANCE SUMMARY REPORT SPECIFICATION

30.5.1 SELECTION. The LSA-003 summary is selectable by mandatory EIAC, Start LCN, LCN Type, UOC, AOR, and MB; and optional SERV DES, ALC, Stop LCN and Wartime/Peacetime (W/P) Indicator (default value is Peacetime).

30.5.2 PROCESSING. The intent of this report is to compare the status of an item versus the requirements for the same item. Therefore, for the "Required" line to be printed, there must be an exact match with the Start LCN in Tables AC and/or AD. If no AC/AD Table values exist for the Start LCN, then do not print the "Required" line; only calculate the "Status" line dependent on the selection range. If "Required" line exists ("A" Table LCN), "Status" line values should be calculated based on a roll-up of LCNs subordinate to the "A" Table LCN (Required line) and within the selection range. The same qualifying criteria is used throughout this report. Task codes are qualified by matching on selected SERV DES.

a. Qualified tasks must have an entry in table CA with a Mean Man-Hour value (MSDMMHCA first precedence, PRDMMHCA second precedence), a Mean Elapsed Time entry (MSDMETCA first, PRDMETCA second), and a Task Frequency entry (TSKFRQCA).

b. Task Code position 1 (Function) of "O", "T", "U", "V", and "Y", and Task Code position 2 (Interval) of "Y" are not used in the LSA-003 report calculations.

c. The elapsed time and man-hour values printed on the status line of the report are calculated from data on the "C" tables in the following manner:

$$ETm = \frac{\sum_{i=1}^{N} (ETi)(TFi)}{\sum_{i=1}^{N} TFi} \qquad M\text{-}Hm = \frac{\sum_{i=1}^{N} (M\text{-}Hi)(TFi)}{\sum_{i=1}^{N} TFi}$$

ETm = Mean Elapsed Time
M-Hm = Mean Man-Hours
ETi = Elapsed Time for task i (MSDMETCA-1st, PRDMETCA-2nd)
M-Hi = Total Man Hours for task i (MSDMMHCA-1st, PRDMMHCA-2nd)
TFi = Task Frequency for task i
N = Total number of tasks performed for the range of LCNs

The preceding computations are performed for each of the following groupings of tasks at Crew and Org Operations/Maintenance Levels:

1. Daily Inspection (Task Code position 1 is "A" and position 2 is "C").
2. Preoperative Inspection (TASK CODE position 1 is "A" and position 2 is "A").
3. Post Operative Inspection (Task Code position 1 is "A" and position 2 is "H").
4. Periodic Inspection (Task Code position 1 is "A" and position 2 is "E" or "B").

5. Mission Profile Change (Task Code position 1 is "M").

6. Turnaround (Task Code position 5 is "F").

Also, the preceding computations are performed for Unscheduled Tasks (Task Code position 2 is F, G, or J) at all maintenance levels.

d. The scheduled and unscheduled values for annual man-hours per end item are derived utilizing data from the C tables for a given LCN and using the task interval codes (2nd position) F, G, and J to qualify unscheduled tasks and all remaining task interval codes (except Y) qualifying as scheduled. The following calculations are performed at each maintenance level:

$$(M\text{-}Hs)a = \sum_{i=1}^{N} (TFi)(M\text{-}Hs)i \qquad (M\text{-}Hu)a = \sum_{i=1}^{N} (TFi)(M\text{-}Hu)i$$

where;

(M-Hs)a = Annual Man Hours for scheduled maintenance
(M-Hu)a = Annual Man-Hours for unscheduled maintenance
TFi = Task Frequency for task i
(M-Hs)i = Man-Hours for scheduled maintenance task i
(M-Hu)i = Man-Hours for unscheduled maintenance task i
N = Total number of tasks performed for the range of LCNs

The scheduled and unscheduled values are summed to yield total annual man-hours per end item for each maintenance level.

e. The status percentile for a given Maint Level is calculated by dividing the qualified tasks with Elapsed Times less than or equal to the "required" MAX TIME TO REPAIR value by the total number of qualified tasks at that Maint Level X 100:

$$\frac{\text{NUMBER OF QUALIFIED TASKS PER M/L WITH ELAP TIME <= MAX TTR VALUE}}{\text{TOTAL NUMBER OF QUALIFIED TASKS}} \times 100$$

f. The scheduled and unscheduled man-hours per operating hour (status) are calculated by dividing the annual man-hours per end item from the 2(d) calculations above by the annual operating requirements specified on the selection criteria. Values should be calculated to the one-hundredths (2 positions right of the decimal). This calculation is performed for each O/M Level. The scheduled and unscheduled values are summed to yield total man-hours per operating hour per maintenance level.

g. The status totals (at the Bottom of the output) are calculated by summing the Annual Man-Hours and M-H Per Operating Hour (Scheduled, Unscheduled, and Total) status values for all maintenance levels.

30.5.3 REPORT FORMAT. See Figure 3.2

30.5.4 REPORT SEQUENCE. Crew and Organizational Inspections (Crew first) section is always shown first. The remainder of the report is sequenced by ascending maintenance level (crew/operator to depot).

30.5.5 DATA SOURCES. The source of data appearing on the LSA-003 summary is depicted below by data table and element codes.

Report Header	Table Code	DED	Element Code
EIAC	XB	096	EIACODXA

LCN NOMENCLATURE	XB	201	LCNAMEXB
START LCN	XB	199	LSACONXB
TYPE	XB	209	LCNTYPXB
ALC	XB	019	ALTLCNXB
STOP LCN	XB	199	LSACONXB
UOC	XF	501	UOCSEIXC
SERV DES	CA	427	TASKCDCA
AOR	AG	023	ANOPREAG
MB	CA	238	AORMSBCA
W/P	AG	282	OPRQINAG
CREW INSPECTIONS & ORGANIZATIONAL INSPECTIONS	CA	427	TASKCDCA
REQUIRED			
DAILY INSP			
M-H	AD	280	DINMMHAD
ELAP	AD	280	DINMETAD
PREOP INSP			
M-H	AD	280	PREMMHAD
ELAP	AD	280	PREMETAD
POSTOP INSP			
M-H	AD	280	POIMMHAD
ELAP	AD	280	POIMETAD
PERIODIC INSP			
M-H	AD	280	PINMMHAD
ELAP	AD	280	PINMETAD
MSSN PROF CHG			
M-H	AD	280	MPCMMHAD
ELAP	AD	280	MPCMETAD
TURNAROUND			
M-H	AD	280	TINMMHAD
ELAP	AD	280	TINMETAD
STATUS (CALCULATED - SEE SPEC WRITE-UP)			
MAINTENANCE LEVEL	CA	427	TASKCDCA
REQUIRED			
UNSCH MAINT			
M-H	AC	498	MLUMMHAC
ELAP	AC	498	MLUMETAC
MAX TIME TO REPAIR	AC	222	MLMTTRAC
PCT	AC	286	MLPERCAC
ANNUAL M-H PER END ITEM			
SCHED	AC	020	MLSAMHAC
UNSCHED	AC	020	MLUAMHAC
TOTAL (CALCULATED - SEE SPEC)			
M-H PER OPER HOUR			
SCHED	AC	215	MLSMHOAC
UNSCHED	AC	215	MLUMHOAC
TOTAL (CALCULATED - SEE SPEC)			
STATUS (CALCULATED - SEE SPEC)			

LSA-003

30.6 LSA-004 MAINTENANCE ALLOCATION CHART REPORT SPECIFICATION

30.6.1 SELECTION. The LSA-004 report is selectable by mandatory EIAC, Start LCN, SERV DES, and Draft/Proof option; and optional ALC, Stop LCN and UOC. Other optional selections include Item Category Codes, Tool List option, TM Code, Display Option (LCN or TM FGC for the Draft MAC, Proof MAC and Aviation MAC must be sequenced by TM FGC), and Technical Manual Designation (provided by requiring authority). The Draft/Proof option allows for a Draft MAC, Proof MAC, or Aviation MAC to be selected. If the Tool List option is not selected, then the ICC option cannot be used. Selectable ICCs are limited to D, G, H, M, N, P, R, V, AC, and 1-8.

30.6.2 PROCESSING. The LSA-004 is a report of the man-hour allocations by maintenance function and maintenance level. The report can be requested as either a draft (reflects all maintenance functions allowed in the LSAR data base) or a proof (formatted in accordance with figure 20, MIL-M-63038 (TM), Manuals, Technical). The draft is printed on computer stock paper and the proof is printed on 8 1/2 by 11 inch plain bond paper. The draft MAC consists of two parts, the man-hour allocation section and the cross-referenced tool list (if selected). The Proof MAC and Aviation MAC consist of four sections, three of which are obtainable from the LSAR. The proof tool list should consist of only ICCs for peculiar or special tools and for existing or new tool sets, kits and outfits. It should not include common tools that are part of a kit as separately listed (referenced) items. CA table LCNs must exist within the range of selected LCNs and with a qualified Task Code (Task Codes are qualified against the selected SERV DES by matching on the 4th position). If the tool option is selected, qualified CG table LCNs must have a tool/test equipment having an ICC that matches on those selected (must match the Reference Number and CAGE in table CG (TSREFNCG and TSCAGECG) with the Reference Number and CAGE in table EA (SEREFNEA and SECAGEEA) in order to access the ICC). Asterisks will be printed in the Man-Hours column of this report when: a. there is more than one Task Code qualified for a given O/M level and Task Function and either the Man-Hour or Task Frequency is blank or zero; or b. when there is qualified Task Code for a given O/M level and Task Function, but there is no Man-Hour value, whatsoever.

a. Task Functions (1st position Task Code) for the draft will appear as they do in the LSAR data base.

b. Task Functions not allowed on the Proof MAC will be automatically included as follows:

1. Access, Disassemble/Assemble and Fault Locate Times are included as part of Repair time.
2. End-of-Runway Inspection times are included as part of the Inspect time.
3. Remove and Install times are included as part of the Remove/Install time.
4. Remove and Replace times are included as Replace time.
5. Lubricate times are included as part of the Service times.
6. Clean, Mission Profile Change, Package/Unpackage, Preserve, Operate, Transport, and Transportation Preparation are not included on the MAC. Also, Battle Damage Assessment Repair (BDAR) tasks are not included on the MAC (these are identified by a Task Interval Code (2nd position) of "Y").

b. Operations/Maintenance (O/M) Level "G" is not included on the Proof MAC and O/M level "L" is included as part of O/M level "H" on the Proof. All O/M levels are included on the Draft MAC (C, O, F, H, G, L, D). Only O/M levels of "O", "F", and "D" apply when the aviation MAC is developed. Maintenance category AVUM equates to "O", AVIM to "F", and Depot to "D".

c. For each O/M level, the Mean Man-Hours is calculated for all tasks with the same Task Function as follows:

$$M\text{-}Hm = \frac{\sum_{i=1}^{N} (TFi)(M\text{-}Hi)}{\sum_{i=1}^{N} TFi}$$

M-Hm = Mean Man-Hours
M-Hi = Total Man-Hours for task i (calculated by summing the Man-Hours for each Person ID of task i)
TFi = Task Frequency for task i
N = Total number of tasks performed

Man-Hours are rounded to the nearest tenth of an hour.

d. For a given component/assembly (LCN driven)/Maintenance Function combination, a new line is required for each applicable maintenance level. This will enable necessary tools to be linked to specific maintenance levels.

e. Section III, Tool and Test Equipment Requirements, consists of tools and test equipment required to perform the maintenance functions listed in Section II, Maintenance Allocation Summary. Sections II and III are cross indexed by the "Tool or Test Equipment Reference Code" which is generated based on the ascending Reference Number sequence in Section III.

f. Section IV, Remarks, is based upon Remarks entered against qualified MAC tasks. Section II and IV are cross indexed by the Remarks Code contained in column 6 of Section II and the Reference Code in column 1 of Section IV.

30.6.3 REPORT FORMAT. See Figure 3.3

30.6.4 REPORT SEQUENCE. Section II is sequenced by ascending LCN or TM FGC depending on the Display Option selected, then by ascending maintenance function based on the 1st position of the Task Code. Section III is sequenced by ascending Reference Numbers and CAGE codes. Section IV is sequenced by ascending Remarks Reference Code.

30.6.5 DATA SOURCES. The source of data appearing on the LSA-004 summary is depicted below by data table and element codes.

Report Header	Table Code	DED	Element Code
EIAC	XB	096	EIACODXA
LCN NOMENCLATURE	XB	201	LCNAMEXB

START LCN	XB	199	LSACONXB
TYPE	XB	209	LCNTYPXB
ALC	XB	019	ALTLCNXB
STOP LCN	XB	199	LSACONXB
UOC	XF	501	UOCSEIXC
SERV DES	CA	427	TASKCDCA
ICC SELECTION (DRAFT MAC)/(MAC)	EA	177	SEICCDEA
TM CODE (SELECTED)	XI	437	TMCODEXI
TOOL LIST (SELECTED)			
TECH MANUAL DESIGNATION (SELECTED)	XI	440	TMNUMBXI
DISP OPT (SELECTED)			
DRAFT/PROOF OPTION (SELECTED)			
LCN (DRAFT MAC)	CA	199	LSACONXB
ALC (DRAFT MAC)	CA	019	ALTLCNXB
GROUP NUMBER (MAC)	XB	438	TMFGCDXB
LCN NOMENCLATURE (DRAFT MAC)/ COMPONENT/ASSEMBLY (MAC)	XB	201	LCNAMEXB
MAINTENANCE FUNCTION	CA	427	TASKCDCA
MAINTENANCE LEVEL CODES (DRAFT MAC)/ MAINTENANCE CATEGORY (MAC) (MEAN MAN-HOURS PER MAINTENANCE FUNCTION AND LEVEL - CALCULATED)(SEE APPX B)	CA	427	TASKCDCA
TOOLS AND EQUIPMENT (GENERATED)			
REMARKS (REFERENCE CODE)(MAC)	CE	349	TSKRRCCE
TOOL AND TEST EQUIPMENT REQUIREMENTS (HEADER)			
TOOL/TEST EQUIPMENT REF CODE (GENERATED)			
MAINT CATEGORY	CA	427	TASKCDCA
ITEM NAME (DRAFT MAC)/NOMENCLATURE (MAC)	HA	182	ITNAMEHA
NATIONAL STOCK NUMBER (DRAFT MAC)/ NATIONAL/NATO STOCK NUMBER (MAC)	HA	253	FSCNSNHA NIINSNHA
REFERENCE NUMBER (DRAFT MAC)/ TOOL NUMBER (MAC)	HA	337	REFNUMHA
CAGE (DRAFT MAC)	HA	046	CAGECDXH
SECTION IV. REMARKS (HEADER)			
REFERENCE CODE (MAC)	CE	349	TSKRRCCE
REMARKS (MAC)	CE	432	TSKREMCE

LSA-004

30.7 LSA-005 SUPPORT ITEM UTILIZATION SUMMARY REPORT SPECIFICATION

30.7.1 SELECTION. The LSA-005 summary is selectable by mandatory EIAC, Start LCN, Type, UOC, Item Category Code, and Elapsed Time/Quantity option; and optional SERV DES, ALC, Stop LCN and Display Option (LCN (default) or TM FGC).

a. If the Elapsed Time option is selected, then only the following ICCs will be allowed: D, E, F, G, H, J, M, N, P, R, S, T, U, V, AC, and 1 - 8.

b. If the Quantity option is selected, then only the following ICCs will be allowed: K, L, Q, W, X, Y, Z, AA, AB, AD, AE, and 9.

30.7.2 PROCESSING. Task Codes are qualified by matching on selected SERV DES. Measured values for Elapsed Time and Man-Hours take precedence over Predicted values. Each Elapsed Time and Man-Hour value will have a (P) or (M) associated with it to distinguish between Predicted and Measured values. Qualified tasks must have a valid Mean Minute Elapsed Time (SBMMETCB) entry in table CB, or Mean Elapsed Time (MSDMETCA or PRDMETCA) in table CA, and a Task Frequency entry (TSKFRQCA) in table CA over the range of selected LCNs for the Elapsed Time option. Likewise, Task Frequency (TSKFRQCA) and Quantity/Task (SQTYTKCG or PQTYTKCI depending on ICC) must have entries for the Quantity option.

a. At each Operations/Maintenance Level (O/M level), the total elapsed time for all tasks where a particular item of support equipment is used is calculated as follows:

$$ETt = \sum_{i=1}^{N} (TFi)(ETi)$$

where;

ETt = Total Elapsed Time per O/M Level
TFi = Task Frequency for task i
ETi = Elapsed Time for task i
N = Total Number of tasks performed

b. At each O/M Level, the total quantity of a repair part is calculated for each task where the repair part is used as follows:

$$TQ = \sum_{i=1}^{N} (TFi)(QTY/TASK)i$$

where;

TQ = Total Quantity per O/M Level
TFi = Task Frequency for task i
(QTY/TASK)i = Quantity per task i
N = Total number of tasks performed

c. The total elapsed time usage for a piece of support equipment for all maintenance levels or total quantity for repair parts for all maintenance levels is calculated by summing all total elapsed times or quantities for each level of maintenance, respectively, that the piece of support equipment or repair part is utilized.

30.7.3 REPORT FORMAT. See Figure 3.4

30.7.4 REPORT SEQUENCE. The report is sequenced first by ICC (A - Z, 1 - 9); second by ascending reference number; third by ascending maintenance level (crew -depot); and fourth by ascending LCN or TM FGC.

30.7.5 DATA SOURCES. The source of data appearing on the LSA-005 summary is depicted below by data table and element codes.

Report Header	Table Code	DED	Element Code
EIAC	XB	096	EIACODXA
LCN NOMENCLATURE	XB	201	LCNAMEXB
START LCN	XB	199	LSACONXB
LCN TYPE	XB	209	LCNTYPXB
ALC	XB	019	ALTLCNXB
STOP LCN	XB	199	LSACONXB
UOC	XF	501	UOCSEIXC
SERV DES	CA	427	TASKCDCA
ITEM CATEGORY CODES			
(T/Q OPTION = ELAPSED TIME)	EA	177	SEICCDEA
(T/Q OPTION = QUANTITY)	HG	177	ITMCATHG
T/Q OPTION (SELECTED)			
DISPLAY OPTION (SELECTED)			
SUPPORT ITEM REFERENCE NUMBER			
(T/Q OPTION = ELAPSED TIME)	CG	337	TSREFNCG
(T/Q OPTION = QUANTITY)	CI	337	PROREFCI
CAGE			
(T/Q OPTION = ELAPSED TIME)	CG	046	TSCAGECG
(T/Q OPTION = QUANTITY)	CI	046	PROCAGCI
ITEM NAME	HA	182	ITNAMEHA
M/L	CA	427	TASKCDCA
LCN	CA	199	LSACONXB
ALC	CA	019	ALTLCNXB
LCN NOMENCLATURE	XB	201	LCNAMEXB
TM FUNCT GROUP CODE	XB	438	TMFGCDXB
TASK CD	CA	427	TASKCDCA
TASK IDENTIFICATION	CA	431	TASKIDCA
TASK FREQ	CA	430	TSKFRQCA
MB	CA	238	AORMSBCA
ELAP TIME			
PREDICTED	CA	224	PRDMETCA
MEASURED	CA	224	MSDMETCA
MAN-HOURS			
PREDICTED	CA	225	PRDMMHCA
MEASURED	CA	225	MSDMMHCA
QTY/TA			
(T/Q OPTION = ELAPSED TIME)	CG	319	SQTYTKCG
(T/Q OPTION = QUANTITY)	CI	319	PQTYTKCI
UM			
(T/Q OPTION = ELAPSED TIME)	CG	491	SQTKUMCG
(T/Q OPTION = QUANTITY)	CI	491	PQTKUMCI
TOTAL ELAPSED TIME USAGE FOR SUPPORT EQUIPMENT FOR MAINTENANCE LEVEL (CALCULATED)			
TOTAL ELAPSED TIME USAGE FOR SUPPORT EQUIPMENT FOR ALL MAINTENANCE LEVELS (CALCULATED)			

LSA-005

30.8 LSA-006 CRITICAL MAINTENANCE TASK SUMMARY REPORT SPECIFICATION

30.8.1 SELECTION. The LSA-006 summary is selectable by mandatory EIAC, Start LCN, Type, UOC, and Critical Criteria (optional between Task Frequency, Elapsed Time, Man-Hours, and Annual Man-Hours); and optional SERV DES, ALC, Stop LCN, Display Option (LCN or TM FGC), Maintenance Level, and Unscheduled or Scheduled maintenance interval.

30.8.2 PROCESSING. Task codes must qualify by matching on selected SERV DES. If unscheduled maintenance interval is selected, then task codes are further qualified by checking the second position for F, G, or J. If scheduled maintenance interval is selected, then task codes are qualified by checking the second position for A, B, C, E, H, K, L, M, N, P, Q, or R. Task Interval Code of Y (BDAR) is not included in the LSA-006.

a. Depending upon selection option chosen (Task Frequency, Elapsed Time, Man-Hours, and Annual Man-Hours), at least one qualifying task with a Task Frequency, or Elapsed Time, or Mean Man-Hours must be entered for the corresponding selection. Annual Man-Hour selection requires Elapsed Time and Mean Man Hours values entered.

b. When man-hours or elapsed times are reported each value will be preceded by a (P) or (M) to indicate to indicate predicted or measured values, respectively. Where a measured value has not been input, the report will default to the predicted value.

c. Annual man-hours is computed by multiplying the mean man-hours by the task frequency for the given task.

30.8.3 REPORT FORMAT. See Figure 3.5

30.8.4 REPORT SEQUENCE. This report is sequenced by descending critical value. If the critical values are identical, then the report sequences by ascending LCN, then by ascending task codes (start with first position).

30.8.5 DATA SOURCES. The source of data appearing on the LSA-006 summary is depicted below by data table and element codes.

Report Header	Table Code	DED	Element Code
EIAC	XB	096	EIACODXA
LCN NOMENCLATURE	XB	201	LCNAMEXB
START LCN	XB	199	LSACONXB
TYPE	XB	209	LCNTYPXB
ALC	XB	019	ALTLCNXB
STOP LCN	XB	199	LSACONXB
UOC	XF	501	UOCSEIXC
SERV DES	CA	427	TASKCDCA
DISPLAY OPTION (SELECTED)			
CRITICAL CRITERIA (HEADER)			
THE FOLLOWING TASKS EXCEED (SELECTED)			
THIS REPORT COVERS THE FOLLOWING MAINTENANCE LEVELS (SELECTED)			

THIS REPORT COVERS (SELECTED)			
TM FGC	XB	438	TMFGCDXB
ALC	CA	019	ALTLCNXB
LCN NOMENCLATURE	XB	201	LCNAMEXB
REFERENCE NUMBER	HG	337	REFNUMHA
CAGE	HG	046	CAGECDXH
TASK CD	CA	427	TASKCDCA
TASK IDENTIFICATION	CA	431	TASKIDCA
TSK FREQ	CA	430	TSKFRQCA
MB	CA	238	AORMSBCA
MAN-HOURS (P)	CA	225	PRDMMHCA
MAN-HOURS (M)	CA	225	MSDMMHCA
ELAPSED TIME (P)	CA	224	PRDMETCA
ELAPSED TIME (M)	CA	224	MSDMETCA
ANNUAL MAN-HOURS (CALCULATED)			
LCN	CA	199	LSACONXB

LSA-006

30.9 LSA-007 SUPPORT EQUIPMENT REQUIREMENTS BY SSC AND MAINTENANCE LEVEL REPORT SPECIFICATION

30.9.1 SELECTION. The LSA-007 summary is selectable by mandatory EIAC, Start LCN, Type, and UOC; and optional SERV DES, ICCs, ALC, Stop LCN, SSC, Maintenance Level (M/L), Display Option (LCN (default) or TM FGC), and SEQ OPT (SSC-M/L or M/L-SSC (default)).

30.9.2 PROCESSING. Task codes are qualified by matching on selected SERV DES and M/L against the range of LCNs chosen. Selected Item Category Codes are limited to D, G, H, M, N, P, R, V, 1-8, AC, and AF.

30.9.3 REPORT FORMAT. See Figure 3.6

30.9.4 REPORT SEQUENCE. This report is sequenced according to the selected SEQ OPT (SSC then M/L or M/L then SSC) first, then by DISP OPT (LCN or TM FGC) second, and Reference Number third.

30.9.5 DATA SOURCES. The source of data appearing on the LSA-007 summary is depicted below by data table and element codes.

Report Header	Table Code	DED	Element Code
EIAC	XB	096	EIACODXA
LCN NOMENCLATURE	XB	201	LCNAMEXB
START LCN	XB	199	LSACONXB
TYPE	XB	209	LCNTYPXB
ALC	XB	019	ALTLCNXB
STOP LCN	XB	199	LSACONXB
UOC	XF	501	UOCSEIXC
SERV DES	CA	427	TASKCDCA
ICC (SELECTED)	EA	177	SEICCDEA
(NOTE: ALLOW REPORT TO PULL ONLY ITEMS WITH ICCs FROM EA TABLE)			
SSC	CD	387	SKSPCDGA
M/L	CA	427	TASKCDCA
SEQ OPT (SELECTED)			
DISP OPT (SELECTED)			
ITEM NAME	HA	182	ITNAMEHA
REFERENCE NUMBER	CG	337	TSREFNCG
CAGE	CG	046	TSCAGECG
LCN	CG	199	LSACONXB
ALC	CG	019	ALTLCNXB
TASK CD	CG	427	TASKCDCA
TASK IDENTIFICATION	CA	431	TASKIDCA
TM FGC	XB	438	TMFGCDXB

LSA-007

30.10 LSA-008 SUPPORT EQUIPMENT RQMTS BY M/L REPORT SPECIFICATION

30.10.1 SELECTION. The LSA-008 summary is selectable by mandatory EIAC, Start LCN, Type, UOC; and optional SERV DES, ALC, Stop LCN, Maintenance Level, and Item Category Code.

30.10.2 PROCESSING. As a minimum, there must be one qualified LCN (within the specified LCN range) with a Support Item Reference Number and CAGE entered against it (table HA) that matches on selected ICCs and a Task Code that matches on selected Maintenance Level and SERV DES.

a. Items qualifying as "Support/Test Equipment and Tools" must have an ICC of D, G, H, M, N, P, R, V, 1-8, or AC.

b. Items qualifying as "Spare and Repair Parts" must have an ICC of X, Y, Z, 9, AA, AB, or AE.

c. Items qualifying as "Other" must have an ICC of E, F, J, Q, S, T, W, AD, or AF.

30.10.3 REPORT FORMAT. See Figure 3.7

30.10.4 REPORT SEQUENCE. This report is sequenced by ascending Maintenance Level (crew - depot), then ascending ICC, then ascending Reference Number within each ICC grouping. The ICC grouping order is Support/Test Equipment and Tools, then Spare and Repair Parts, then Other.

30.10.5 DATA SOURCES. The source of data appearing on the LSA-008 summary is depicted below by data table and element codes.

Report Header	Table Code	DED	Element Code
EIAC	XB	096	EIACODXA
LCN NOMENCLATURE	XB	201	LCNAMEXB
START LCN	XB	199	LSACONXB
TYPE	XB	209	LCNTYPXB
ALC	XB	019	ALTLCNXB
STOP LCN	XB	199	LSACONXB
UOC	XF	501	UOCSEIXC
SERV DES	CA	427	TASKCDCA
M/L SEL (SELECTED)			
ICC (SELECTED)			
SUPPORT/TEST EQUIPMENT AND TOOLS (HEADER)			
M/L	CA	427	TASKCDCA
ICC	EA	177	SEICCDEA
REFERENCE NUMBER	CG	337	TSREFNCG
CAGE	CG	046	TSCAGECG
ITEM NAME	HA	182	ITNAMEHA
QTY/TASK	CG	319	SQTYTKCG
UM	CG	491	SQTKUMCG
SUPPORT LCN	CG	199	LSACONXB
ALC	CG	019	ALTLCNXB
TASK CD	CG	427	TASKCDCA

TASK FREQ	CA	430	TSKFRQCA
MB	CA	238	AORMSBCA
SSC	CD	387	SKSPCDGA
HMPC	CA	155	HAZMPCCA
SPARES AND REPAIR PARTS (HEADER)			
M/L	CI	427	TSKTCDCI
ICC	HG	177	ITMCATHG
REFERENCE NUMBER	CI	337	PROREFCI
CAGE	CI	046	PROCAGCI
ITEM NAME	HA	182	ITNAMEHA
QTY/TASK	CI	319	PQTYTKCI
UM	CI	491	PQTKUMCI
SUPPORT LCN	CI	199	TSKLCNCI
ALC	CI	019	TSKALCCI
TASK CD	CI	427	TSKTCDCI
TASK FREQ	CA	430	TSKFRQCA
MB	CA	238	AORMSBCA
SSC	CD	387	SKSPCDGA
HMPC	CA	155	HAZMPCCA
OTHER (HEADER)			
M/L	CI	427	TSKTCDCI
ICC	EA/HG	177	ITMCATHG
REFERENCE NUMBER	CI	337	PROREFCI
CAGE	CI	046	PROCAGCI
ITEM NAME	HA	182	ITNAMEHA
QTY/TASK	CI	319	PQTYTKCI
UM	CI	491	PQTKUMCI
SUPPORT LCN	CI	199	TSKLCNCI
ALC	CI	019	TSKALCCI
TASK CD	CI	427	TSKTCDCI
TASK FREQ	CA	430	TSKFRQCA
MB	CA	238	AORMSBCA
SSC	CD	387	SKSPCDGA
HMPC	CA	155	HAZMPCCA

LSA-008

30.11 LSA-009 SUPPORT ITEMS VALIDATION REPORT SPECIFICATION

30.11.1 SELECTION. The LSA-009 summary is selected by a mandatory EIAC, START LCN and at least one selection of Item Category Code (ICC) (table HA) or Provisioning Technical Documentation Selection Code (PTD SELECT) (table HG). Optional selections are ALC, STOP LCN, SEQUENCE and UOC. The LCN-TYPE (TYPE) is always "P". If both PTD SELECT and ICC are selected, then to qualify an item, it must match BOTH selected codes or code combinations.

30.11.2 PROCESSING. At least one qualified item by either PTD SELECT or ICC must be contained in the selected range of LCNs in order to produce an LSA-009 summary. The UM-PRICE with a "Y" PUC (PROUMPHE) is displayed on the summary.

30.11.3 REPORT FORMAT. See Figure 3.8

30.11.4 REPORT SEQUENCE. The report is sequenced in either ascending Reference Number and CAGE, or LCN. If left blank, sequencing is by Reference Number and CAGE.

NOTE: An optional sort outside the validation requirements is by ascending PCCN/PLISN.

30.11.5 DATA SOURCES. The source of data appearing on the LSA-009 summary is depicted below by data table and element codes.

Report header	Table Code	DED	Element Code
EIAC	HG	096	EIACODXA
ITEM NAME	HA	182	ITNAMEHA
START LCN	HG	199	LSACONXB
ALC	HG	019	ALTLCNXB
STOP LCN	HG	199	LSACONXB
UOC	HO/XC	501	UOCSEIXC
SEQUENCE (SELECTED)			
ITEM CATEGORY CODES SELECTED:	HG	177	ITMCATHG
PTD LISTS SELECTED			
PPL	HG	313	PPLPTDHG
SFPPL	HG	313	SFPPTDHG
LLTIL	HG	313	LLIPTDHG
RIL	HG	313	RILPTDHG
ISIL	HG	313	ISLPTDHG
TTEL	HG	313	TTLPTDHG
CBIL	HG	313	CBLPTDHG
PCL	HG	313	PCLPTDHG
SCPL	HG	313	SCPPTDHG
ARA	HG	313	ARAPTDHG
ARB	HG	313	ARBPTDHG
CAGE	HG	046	CAGECDXH
REFERENCE NUMBER	HG	337	REFNUMHA
LCN	HG	199	LSACONXB
ALC	HG	019	ALTLCNXB
WUC	HG	516	WRKUCDHG
PCCN	XC	307	PCCNUMXC

PLISN	HG	309	PLISNOHG
	XC	309	PLISNOXC
IND CD	HG	162	INDCODHG
ITEM NAME	HA	182	ITNAMEHA
NAT STOCK NUMBER (HEADER)			
NSN COGNIZANCE CODE	HA	253	COGNSNHA
NSN MATERIEL CONTROL CODE	HA	253	MATNSNHA
NSN FEDERAL SUPPLY CLASSIFICATION	HA	253	FSCNSNHA
NSN NATIONAL ITEM IDENTIFICATION NUMBER	HA	253	NIINSNHA
NSN SPECIAL MATERIAL IDENTIFICATION CODE/ MATERIEL MANAGEMENT AGGREGATION CODE	HA	253	SMMNSNHA
NSN ACTIVITY CODE	HA	253	ACTNSNHA
SMCC	HA	395	SPMACCHA
SMIC	HA	392	SMAINCHA
ICC	HG	177	ITMCATHG
UM	HA	491	UNITMSHA
PLT	HA	299	PRDLDTHA
QTY/EI	HG	317	QTYPEIHG
	XC	317	QTYPEIXC
UM PRICE	HE	492	UMPRICHE
PS/PC	HA	291	PHYSECHA
QTY/ASY	HG	316	QTYASYHG
	XC	316	QTYASYXC
SMR	HG	389	SMRCODHG
SL	HA	377	SHLIFEHA

LSA-009

30.12 LSA-010 PARTS STANDARDIZATION SUMMARY REPORT SPECIFICATION

30.12.1 SELECTION. The LSA-010 summary is selected by mandatory LCN, and optional ALC, STOP LCN, UOC, AMC, CTIC1, and CTIC2. CTIC1 applies to the first position of the CTIC code and CTIC2 to the second position. A maximum of 4 AMCs can be selected. Default values for CTIC and AMC selections are "All" legitimate values.

30.12.2 PROCESSING. In order to produce an LSA-010 summary at least one row of information (table HG) qualified by specified CTICs or AMC must be contained within the selected LCN range. All UM Prices for a given LCN/ALC combination will be printed out and the corresponding Lot Quantity From and To values.

30.12.3 REPORT FORMAT. See Figure 3.9

30.12.4 REPORT SEQUENCE. The report is sequenced in ascending Reference Number and CAGE, CTIC1, CTIC2, or AMC as specified in the display option.

30.12.5 DATA SOURCE. The source of data appearing on the LSA-010 summary is depicted below by data table and element codes.

Report header	Table Code	DED	Element Code
EIAC	HG	096	EIACODXA
ITEM NAME	HA	182	ITNAMEHA
START LCN	HG	199	LSACONXB
ALC	HG	019	ALTLCNXB
TYPE	HG	203	LCNTYPXB
STOP LCN	HG	199	LSACONXB
UOC	HO/XC	501	UOCSEIXC
CTIC1	HA	058	CTICODHA
CTIC2	HA	058	CTICODHA
AMC	HA	003	ACQMETHA
DISPLAY OPTION (SELECTION)			
REFERENCE NO/CAGE, CTIC(S), AMC(S)			
CAGE	HG	046	CAGECDXH
REFERENCE NUMBER	HG	337	REFNUMHA
RNCC	HA	338	REFNCCHA
RNVC	HA	339	REFNVCHA
ITEM NAME	HA	182	ITNAMEHA
FSC	HA	260	FSCNSNHA
DAC	HA	086	DOCAVCHA
AMC	HA	003	ACQMETHA
AMSC	HA	004	AMSUFCHA
PPSL	HA	302	PPSLSTHA
CTIC1	HA	058	CTICODHA
CTIC CAGE	HC	046	CTCAGEHC
UM PRICE	HE	492	UMPRICHE
LOT QUANTITY FROM	HE	205	LOTQFMHE
LOT QUANTITY TO	HE	205	LOTQTOHE
UM	HA	497	UNITMSHA
FY	HE	145	FISCYRHE
CPC	HE	051	CURPRCHE
TUC	HE	485	TUMPRCHE
PUC	HE	321	PROUMPHE

LSA-010

30.13 LSA-011 REQUIREMENTS FOR SPECIAL TRAINING DEVICES REPORT SPECIFICATION

30.13.1 SELECTION. The LSA-011 summary is selectable by mandatory EIAC, Start LCN, Type, UOC; and optional SERV DES, ALC, Stop LCN and Display Option (LCN or TM FGC).

30.13.2 PROCESSING. As a minimum, qualified LCNs within the selected range must contain a "Y" code entry in element TRNRQCCA (Training Equipment Requirement Code) table CA.

30.13.3 REPORT FORMAT. See Figure 3.10

30.13.4 REPORT SEQUENCE. This report is sequenced by ascending LCN or TM FGC (depending on Display Option chosen), then ALC, then ascending Task Codes.

30.13.5 DATA SOURCES. The source of data appearing on the LSA-011 summary is depicted below by data table and element codes.

Report Header	Table Code	DED	Element Code
EIAC	XB	096	EIACODXA
LCN NOMENCLATURE	XB	201	LCNAMEXB
START LCN	XB	199	LSACONXB
TYPE	XB	209	LCNTYPXB
ALC	XB	019	ALTLCNXB
STOP LCN	XB	199	LSACONXB
UOC	XF/XC	501	UOCSEIXC
SERV DES	CA	427	TASKCDCA
DISPLAY OPTION (SELECTED)			
LCN	CA	199	LSACONXB
ALC	CA	019	ALTLCNXB
LCN NOMENCLATURE	XB	201	LCNAMEXB
TASK CD	CA	427	TASKCDCA
TASK IDENTIFICATION	CA	431	TASKIDCA
TASK FREQ	CA	430	TSKFRQCA
MB	CA	238	AORMSBCA
ELAP TIME	CA	224	MSDMETCA
SSC	CD	387	SKSPCDGA
MAN-HOURS	CD	226	SUBMMMCD
TM FGC	XB	438	TMFGCDXB

LSA-011

30.14 LSA-012 FACILITY REQUIREMENTS REPORT SPECIFICATION

30.14.1 SELECTION. The LSA-012 summary is selectable by mandatory EIAC, Start LCN, ALC, LCN TYPE, UOC and SERV DES; and optional Stop LCN (default is all LCNs subordinate to, and including, the start LCN). The report may also be selected by Facility Type (DED 483, Default is all types) and FACILITY CATEGORY CODE.

30.14.2 PROCESSING. Tasks reported are limited to those documented against specific LCN range and Service Designator Code. In addition a (Y) must be entered in the CA table REQUIREMENTS FOR, to qualify for inclusion into the list.

a. The (P) or (M) preceding the elapsed time values on the output represent predicted and measured, respectively. Measured values are reported wherever possible.

b. The data elements from the EI table may have multiple rows of information. Each row of information should be printed

30.14.3 REPORT FORMAT. See Figure 3.11

30.14.4 REPORT SEQUENCE. The report is sequenced by ascending values of the LCN or by the Facility Category Code selected. The Facility Requirements report will consist of four facility types. Test Facility Requirement; b. Operational Facility Requirement; c. Training Facility Requirement; and d. Depot Facility Requirement

30.14.5 DATA SOURCES. The source of the data appearing on the LSA-012 summary is depicted below by data table and element codes.

Report Header	Table Codes	DED	Element Code
EIAC	XB	096	EIACODXA
LCN NOMENCLATURE	XB	201	LCNAMEXB
START LCN	XB	199	LSACONXB
ALC	XB	019	ALTLCNXB
TYPE	XB	203	LCNTYPXB
STOP LCN	XB	199	LSACONXB
UOC	XC	501	UOCSEIXC
UOC is matched VIA the XF Table			
SERVICE DESIGNATOR	FE	427	TASKCDCA
(MATCHED AGAINST 4 POSITION OF TASK CODE)			
FAC TYP (SELECTED, MATCHED AGAINST)	FA	483	FACTYPFA
	FC	483	FACTYPFC
	FD	483	FACTYPFD
FCC	FA	115	FACCCDFA
FACILITY NAME	FA	118	FACNAMFA
FACILITY CATEGORY CODE	FA	115	FACCCDFA
BASELINE FACILITY NAME	FC	118	FACNAMFC
BASELINE FACILITY CATEGORY CODE	FC	115	FACCCDFC
NEW OR MODIFIED FACILITY NAME	FD	118	FACNAMFD

NEW OR MODIFIED FACILITY CATEGORY CODE	FD	115	FACCCDFD
FACILITY CLASS	FA	116	FACCLAFA
FACILITY DRAWING NUMBER	FA	089	FADNUMFA
DRAW REV	FA	360	FADREVFA
FDC	FA	088	DRCLASFA
FACILITY AREA	FA	026	FAAREAFA
UM	FA	491	FAARUMFA
COST UM OF PRICE	FA	492	FACNCOFA
CP UM	FA	491	CONUOMFA
TASK LCN	FE	199	LSACONXB
ALC	FE	019	ALTLCNXB
TASK CODE	FE	427	TASKCDCA
TASK IDENTIFICATION	CA	431	TASKIDCA
TASK FREQ	CA	430	TSKFRQCA
MB	CA	238	AORMSBCA
ELAPSED TIME (HEADER)			
PREDICTED	CA	224	PRDMETCA
MEASURED	CA	224	MSDMETCA
FACILITY LOCATION	FB	117	FACNARFB
(FACILITY NARRATIVE CODE OF (B))	FB	119	FNCODEFB
FACILITY CAPABILITY	FB	114	FACNARFB
(FACILITY NARRATIVE CODE OF (A))	FB	119	FNCODEFB
FACILITIES MAINTENANCE REQUIREMENTS	FC	107	FABNARFC
(BASELINE FACILITY NARRATIVE CODE OF (A))	FC	113	FBNACDFC
FACILITIES REQUIREMENTS FOR OPERATIONS	FC	109	FABNARFC
(BASELINE FACILITY NARRATIVE CODE OF (B))	FC	113	FBNACDFC
FACILITIES REQUIREMENTS FOR TRAINING	FC	110	FABNARFC
(BASELINE FACILITY NARRATIVE CODE OF (C))	FC	113	FBNACDFC
FACILITY REQUIREMENTS: SPECIAL CONSIDERATIONS	FC	120	FABNARFC
(BASELINE FACILITY NARRATIVE CODE OF (D))	FC	113	FBNACDFC
FACILITY REQUIREMENTS: SUPPLY/STORAGE	FC	121	FABNARFC
(BASELINE FACILITY NARRATIVE CODE OF (E))	FC	113	FBNACDFC
FACILITY DESIGN CRITERIA	FD	105	NMFNARFD
(NEW OR MODIFIED FACILITY NARRATIVE CODE OF (A))	FD	255	NMFNCDFD
FACILITY INSTALLATION LEAD TIME	FD	106	NMFNARFD
(NEW OR MODIFIED FACILITY NARRATIVE CODE OF (B))	FD	248	NMFNCDFD
FACILITY TASK AREA BREAKDOWN	FD	122	NMFNARFD
(NEW OR MODIFIED FACILITY NARRATIVE CODE OF (C))	FD	255	NMFNCDFD
FACILITIES UTILIZATION	FD	111	NMFNARFD
(NEW OR MODIFIED FACILITY NARRATIVE CODE OF (D))	FD	255	NMFNCDFD
FACILITIES REQUIREMENT	FD	108	NMFNARFD
(NEW OR MODIFIED FACILITY NARRATIVE CODE OF (E))	FD	255	NMFNCDFD
FACILITY UNIT COST RATIONALE	FD	123	NMFNARFD
(NEW OR MODIFIED FACILITY NARRATIVE CODE OF (F))	FD	255	NMFNCDFD
FACILITY JUSTIFICATION	FD	188	NMFNARFD

(NEW OR MODIFIED FACILITY NARRATIVE CODE OF (G))	FD	255	NMFNCDFD
TYPE OF CONSTRUCTION	FD	482	NMFNARFD
(NEW OR MODIFIED FACILITY NARRATIVE CODE OF (H))	FD	255	NMFNCDFD
UTILITIES REQUIREMENT	FD	502	NMFNARFD
(NEW OR MODIFIED FACILITY NARRATIVE CODE OF (I))	FD	255	NMFNCDFD
SUPPORT EQUIPMENT (HEADER)			
ITEM NAME	HA	182	ITNAMEHA
NSN (HEADER)			
FSC	HA	253	FSCNSNHA
NIIN	HA	253	NIINSNHA
REFERENCE NUMBER	EA	337	SEREFNEA
CAGE	EA	046	SECAGEEA
LENGTH	EA	268	OPLENGEA
WIDTH	EA	268	OPWIDTEA
HEIGHT	EA	268	OPRHGTEA
UM	EA	491	LWHOUMEA
WEIGHT	EA	270	OPRWGTEA
UM	EA	491	WGTOUMEA
QTY	CG	319	SQTYTKCG
UM	CG	491	SQTKUMCG
AC/DC	EI	168	IPACDCEI
IPS FRMAX	EI	168	IPFRMXEI
IPS FRMIN	EI	168	IPRGMXEI
IPS ORMAX	EI	168	IPSRGMEI
IPS OPMIN	EI	168	IPOPRGEI
IPS PER MAX RIPPLE	EI	168	IPMXRPEI
PHASE	EI	168	IPPHASEI
WATTS	EI	168	IPPOWREI

LSA-012

30.15 LSA-013 SUPPORT EQUIPMENT GROUPING UTILIZATION SUMMARY REPORT SPECIFICATION

30.15.1 SELECTION. The LSA-013 summary is selectable by mandatory EIAC, Start LCN, Type, UOC; and optional SERV DES, ALC, Stop LCN, SE Group Number, Maintenance Level (M/L), and Display Option (LCN or TM FGC).

30.15.2 PROCESSING. Task Codes are qualified against the selected SERV DES.

a. As a minimum, there must be one LCN within the selected range that requires a piece of support equipment (identified by Reference Number and CAGE) (match table CG with table EA) which has a valid SE Grouping Identification Number (element SEGRCDEA) that matches the selection criteria.

b. When man-hours or elapsed times are reported each value will be preceded by a (P) or (M) to indicate predicted or measured values, respectively. Where a measured value has not been input, the report will default to the predicted value.

30.15.3 REPORT FORMAT. See Figure 3.12

30.15.4 REPORT SEQUENCE. This report is sequenced by ascending SE Group Numbers and within each SE Group Number by ascending M/L, then ascending LCN, then ascending Task Code.

30.15.5 DATA SOURCES. The source of data appearing on the LSA-013 summary is depicted below by data table and element codes.

Report Header	Table Code	DED	Element Code
EIAC	XB	096	EIACODXA
LCN NOMENCLATURE	XB	201	LCNAMEXB
START LCN	XB	199	LSACONXB
TYPE	XB	209	LCNTYPXB
ALC	XB	019	ALTLCNXB
STOP LCN	XB	199	LSACONXB
UOC	XF/XC	501	UOCSEIXC
SERV DES	CA	427	TASKCDCA
SE GROUP NO (SELECTED)	EA	421	SEGRCDEA
M/L (SELECTED)	CA	427	TASKCDCA
DISP OPT (SELECTED)			
SUPPORT EQUIPMENT GROUPING IDENTIFICATION	EA	413	SEGRCDEA
M/L	CG	427	TASKCDCA
LCN	CG	199	LSACONXB
(NEED QUALIFYING REF NO'S AND CAGES FROM EA TABLE BASED ON SE GROUP NO)			
[SUPPORT EQUIPMENT REFERENCE NUMBER]	EA	337	SEREFNEA
[SE CAGE CODE]	EA	046	SECAGEEA
ALC	CG	019	ALTLCNXB
LCN NOMENCLATURE	XB	201	LCNAMEXB
TASK CD	CG	427	TASKCDCA
TASK IDENTIFICATION	CA	431	TASKIDCA
TASK FREQ	CA	430	TSKFRQCA
MB	CA	238	AORMSBCA
ELAP TIME (M)	CA	224	MSDMETCA
ELAP TIME (P)	CA	224	PRDMETCA
MAN-HOURS (M)	CA	225	MSDMMHCA
MAN-HOURS (P)	CA	225	PRDMMHCA
TM FGC	XB	438	TMFGCDXB

LSA-013

30.16 LSA-014 TRAINING TASK LIST REPORT SPECIFICATION

30.16.1 SELECTION. The LSA-014 summary is selectable by mandatory EIAC, Start LCN, Type, UOC; and optional SERV DES, ALC, Stop LCN, SSC, and Training Recommended option.

30.16.2 PROCESSING. Task Codes are qualified by matching on selected SERV DES. As a minimum, one LCN within the selected range with a qualified Task Code in table CA must exist.

a. If the Training Recommended option is selected, then LCNs are further qualified by checking for a Training Recommendation Type code of B, C, or J in the element TRNRECCA of table CA.

b. If the Training Recommended option is selected, then Task Conditions, Performance Standards, Rationale for Training Recommendation, and Rationale for Training Location will be output for qualified LCNs.

30.16.3 REPORT FORMAT. See Figure 3.13

30.16.4 REPORT SEQUENCE. This report is sequenced by ascending SSC first (if tasks exist which are not linked to an SSC in Table CD, these tasks will be listed first under a blank SSC), then by ascending LCN within each SSC.

30.16.5 DATA SOURCES. The source of data appearing on the LSA-014 summary is depicted below by data table and element codes.

Report Header	Table Code	DED	Element Code
EIAC	XB	096	EIACODXA
LCN NOMENCLATURE	XB	201	LCNAMEXB
START LCN	XB	199	LSACONXB
TYPE	XB	209	LCNTYPXB
ALC	XB	019	ALTLCNXB
STOP LCN	XB	199	LSACONXB
UOC	XF/XC	501	UOCSEIXC
SERV DES	CA	427	TASKCDCA
SSC (SELECTED)			
TRAINING SELECTION (SELECTED)			
SSC (MODIFIED - 1ST PRECEDENCE)	CD	257	MDCSSCGB
		387	SKSPCDGA
LCN	CD	199	LSACONXB
ALC	CD	019	ALTLCNXB
LCN NOMENCLATURE	XB	201	LCNAMEXB
TSK FREQ	CA	430	TSKFRQCA
MB	CA	238	AORMSBCA
TASK CD	CD	427	TASKCDCA
TASK IDENTIFICATION	CA	431	TASKIDCA
TRAINING RECOMMENDED	CA	463	TRNRECCA
TM FGC	XB	438	TMFGCDXB
TASK CONDITIONS	CA	428	TCONDACA
			TCONDBCA
			TCONDCCA

PERFORMANCE STANDARDS	CA	287	PRSTDACA
			PRSTDBCA
			PRSTDCCA
RATIONALE FOR TRAINING RECOMMENDATION	CA	462	TRNRATCA
RATIONALE FOR TRAINING LOCATION	CA	461	TRNLOCCA

LSA-014

30.17 LSA-016 PRELIMINARY MAINTENANCE ALLOCATION CHART REPORT SPECIFICATION

30.17.1 SELECTION. The LSA-016 summary is selected by a mandatory START LCN, LCN TYPE, and UOC. Optional selections are SERV DES, ALC, STOP LCN, TOOL LIST, PART LIST and SEQUENCE. If either Tool List or Part List are selected, then there may also be an entry in the ICC selections (default is all) for the Tool or Part Lists. Only ICCs specified in appendix B of MIL-STD may be entered in either Tools (ICCs D, G, H, M, N, P, R, 1-8, AC, AD) or Part List (ICCs X, Y, Z, 9, AA, AB, AE) ICC selections.

30.17.2 PROCESSING. Qualified items must have a Task Code (TASKCDCA) matching the selected SERV DES (position 4 of Task Code) and must be contained in the selected range of LCNs. This task must have an entry in either Measured (MSDMMHCA) or Predicted (PRDMMHCA) Mean Man-Hours. If a Task Code has both predicted and measured man-hours, then the measured man-hours are used. If a Task contains a Task Frequency = 0.0, asterisks (****) shall be printed in the M-HRS column.

a. Tasks with Task Function Codes of Q, Z, P, M, O, U, V, C, Y , T, and 2-9 are excluded from the PMAC. The Task Function is interpreted when displayed for the PMAC report. Following the Function, in parenthesis, the Operations/Maintenance (O/M) level is shown, e.g., (F).

b. M-HRS displayed on the report are based on the calculation displayed below. Following the man-hours a (P) or (M) will appear. If all man-hours in a given calculation are measured, an (M) is displayed. If any of the man-hours are predicted in the calculation, then a (P) is shown.

$$\text{M-HRS} = \frac{\sum_{i=1}^{N} \text{TSKFRQCA X (PRDMMHCA or MSDMMHCA)}}{\sum_{i=1}^{N} \text{TSKFRQCA}}$$

Where: N = Total number of tasks performed for a given LCN/FGC matching on Task Function and O/M Level (TASKCDCA, 3rd position) displayed on the LSA-016, Part I.

c. TOOL REFERENCES are assigned numbers to the tools with number assignment based on the tools in ascending sequence of the Tool Reference Number and CAGE. If more than 6 tools are required for a given Task Function and O/M Level, then a second and subsequent line(s) is used.

d. PART REFERENCES are assigned numbers to the parts with number assignment based on the ascending sequence of the part Reference Number and CAGE. If more than 6 parts are required for a given Task Function and O/M Level, then a second and subsequent line(s) is used.

e. If the basic assembly or part Reference Number exceeds 16-positions, the remainder of the Reference Number is printed on the next line directly below the first 16-positions.

f. On Part II, all O/M Levels which use the Referenced Tool across all LCN/FGCs are displayed below the O/M LEVELS header.

g. On Part III, Part Reference Number and CAGEs also display the Part LCN and SMR by matching the CI Part LCN, Reference Number and CAGE to the HG LCN, Reference Number and CAGE. O/M Levels shown for a Part LCN are applied only against the uses of the Part LCN, not all applications of the Reference Number.

30.17.3 REPORT FORMAT. See Figure 3.14

30.17.4 REPORT SEQUENCE. Part I of the report is sequenced in either ascending LCN or FGC and the generated NUMBER is assigned, incremented by 1, for each different, qualified LCN or FGC. Parts II and III are sequenced in ascending Reference Number and CAGE using the generated TOOL NO. and PART NO., respectively.

30.17.5 DATA SOURCES. The source of data appearing on the LSA-016 summary is depicted below by data table and element codes.

Report header	Table Code	DED	Element Code
EIAC	XB	096	EIACODXA
LCN NOMENCLATURE	XB	201	LCNAMEXB
START LCN	XB	199	LSACONXB
ALC	XB	019	ALTLCNXB
TYPE	XB	203	LCNTYPXB
STOP LCN	XB	199	LSACONXB
UOC	XF/XC	501	UOCSEIXC
SERV DES	CA	427	TASKCDCA
TOOL LIST (SELECTED)			
PART LIST (SELECTED)			
SEQUENCE (SELECTED)			
ICC(S) TOOL LIST:	EA	177	SEICCDEA
ICC(S) PARTS LIST:	HG	177	ITMCATHG
NUMBER (GENERATED)			
LCN	XB	199	LSACONXB
ALC	XB	019	ALTLCNXB
IC	XB	200	LCNINDXB
ITEM NAME	HA	182	ITNAMEHA
CAGE	HG	046	CAGECDXH
REFERENCE NUMBER	HG	337	REFNUMHA
QPA	HG	316	QTYASYHG
MRR-I	HG	211	MRRONEHG
EC	HG	100	ESSCODHG
SMR	HG	389	SMRCODHG
TM-FGC	XB	438	TMFGCDXB
TASK FUNCTIONS:	CA	427	TASKCDCA
M-HRS (CALCULATED) (P)	CA	225	PRDMMHCA
(CALCULATED) (M)	CA	224	MSDMMHCA
	CA	430	TSKFRQCA
TOOL REFERENCES: (GENERATED)			
PART REFERENCES: (GENERATED)			

TOOL NO. (GENERATED)			
CAGE	CG	046	TSCAGECG
REFERENCE NUMBER	CG	337	TSREFNCG
ITEM NAME	HA	182	ITNAMEHA
O/M LEVELS	CG	427	TASKCDCA
PART NO. (GENERATED)			
CAGE	CI	046	PROCAGCI
REFERENCE NUMBER	CI	337	PROREFCI
ITEM NAME	HA	182	ITNAMEHA
LCN	CI	199	PROLCNCI
ALC	CI	019	PROALCCI
O/M LEVELS	CI	427	TSKTCDCI
SMR	HG	389	SMRCODHG

lsa-016

30.18 LSA-018 TASK INVENTORY SUMMARY REPORT SPECIFICATION

30.18.1 SELECTION. The LSA-018 summary is selectable by mandatory EIAC and optional "Job Code" (JOBCODCJ) (defaults to all Jobs on file from CJ Table).

30.18.2 PROCESSING. The report is capable of producing an inventory of tasks for all "Jobs" (Table CJ) within a given system, or for selected "Job" combinations. As a minimum, there must be an exact match on at least one qualified value for JOBCODCJ in the CJ table for the given selection. (Job Description(s) (JOBDESCJ) will be printed in the header if specific Job(s) are selected. If default value is used, print "All" under Job Selection header.) The Job Code (JOBCODCJ) is used as the link to the applicable tasks in order to pull out Task Identification (TASKIDCA) from table CA, Subtask Identification (SUBTIDCB) from table CB, and the Element Narrative from table CC (SUBNARCC) based on Text Sequencing Code From and To in the CK table. Text Sequencing Code From and To (TSFROMCK & TEXTTOCK) must match Subtask Description Text Sequencing Code values for the given EIAC, LCN, ALC, LCN Type, Task Code, Subtask Number combination. If the Subtask ID is not on file, the qualified Element Narrative will still be printed. The hierarchy for processing is a given Job, a Duty within a Job, a Task within that Duty, a Subtask within that Task, and all qualified Element Narratives within that Subtask. All qualified Element Narratives within a subtask, subtasks within a task, tasks within a Duty, and Duties within a Job must be processed through before moving to the next Job.

30.18.3 REPORT FORMAT. See Figure 3.15

30.18.4 REPORT SEQUENCE. If the report selection goes to the default value, sequencing by "Job Code" will occur. If the report selection specifies multiple "Jobs", then the report will be sequenced by order of selection input. Duty will be printed out left justified on the output and Job Description (JOBDESCJ) will appear in parentheses following Duty. Task Identification will be indented beneath Duty and Job; Subtask Identification will be indented beneath Task Identification; and the Element narrative will be indented beneath Subtask Identification (if applicable). Within a given task, sort by subtask numbers and by text sequencing code within each subtask.

30.18.5 DATA SOURCES. The source of data appearing on the LSA-018 summary is depicted below by data table and element codes.

Report Header	Table Code	DED	Element Code
EIAC	XA/CK	096	EIACODXA
JOB SELECTION	CJ	185	JOBCODCJ
(QUALIFY BY JOBCODCJ,PRINT JOBDESCJ)			
DUTY	CJ	090	DUTIESCJ
(JOB)	CJ	185	JOBDESCJ
TASK IDENTIFICATION	CA	431	TASKIDCA
SUBTASK IDENTIFICATION	CB	431	SUBTIDCB
ELEMENT NARRATIVE	CC	372	SUBNARCC
(TEXT SEQUENCING CODE (TSC) FROM &	CK	450	TSFROMCK
TSC TO)	CK	450	TEXTTOCK
MATCHED WITH			
(SEQUENTIAL SUBTASK DESCRIPTION TSC)	CC	450	TEXSEQCC

LSA-018

30.19 LSA-019 TASK ANALYSIS SUMMARY REPORT SPECIFICATION

30.19.1. SELECTION. The LSA-019 summary is selectable by mandatory EIAC, Start LCN, Type, UOC. Optional selections include SERV DES, ALC, Stop LCN, Maintenance Level (M/L), Item Category Codes (ICCs), Display Option (LCN or TM FGC), Task Narrative option, task interval option, task function option and Hardness Critical Procedures (HCP).

30.19.2 PROCESSING. LCNs are qualified within the selected LCN range with a valid Task Code that qualifies against selected SERV DES (4th position of Task Code), selected M/L (3rd position Task Code), selected Task Interval (2nd position Task Code), and selected Task Function (1st position Task Code) .

a. If the Task Narrative option is selected, then the Subtask Number, Sequential Subtask Narrative and associated Text Sequencing Code, Work Area Code, Person ID, Mean Man Minutes, and Mean Minute Elapse Time are output for the qualified tasks. All qualified tasks within the selection range will be output regardless if they have an entry in Table CC, or not. Referenced tasks and subtasks will be incorporated into referencing tasks where required. A developer option may be to allow users to select whether referenced tasks should be incorporated.

b. If the HCP option is selected, then only tasks with an associated HCP Code (element HRDCPCCA of table CA) of "Y" or "S" will qualify and be output (including narrative).

c. Either predicted or measured LSAR Elapsed Times and LSAR Man-Hours can be output (measured takes first precedence).

d. The support items identified to perform the subject task are categorized according to their respective ICC:

1. Items qualifying as "Support/Test Equipment and Tools" must have an ICC of D, G, H, M, N, P, R, 1-8, or AC.

2. Items qualifying as "Spare and Repair Parts" must have an ICC of X, Y, Z, 9, AA, AB, or AE.

3. Items qualifying as "Other" must have an ICC of E, F, J, Q, S, T, W, AD, or AF.

e. There are spaces provided for manual entries onto this report for Manually Measured Elapsed Time, Manually Measured Man-Hours, Actual Quantity Used, Manual Evaluation, Reviewer's Name, and Support Items Not Identified in the LSAR.

30.19.3 REPORT FORMAT. See Figure 3.16

30.19.4 REPORT SEQUENCE. This report is sequenced by ascending LCN or TM FGC (depending on the Display Option chosen), then by ascending Task Code. The support items portion is sequenced by support item type with Support/Test Equipment and Tools being first, then Spare and Repair Parts, then Other, then space is provided for Support Items Not Identified In LSAR. Within each of the first three categories of support items, sequencing is done by ascending

ICC, then ascending Reference Numbers.

30.19.5 DATA SOURCES. The source of data appearing on the LSA-019 summary is depicted below by data table and element codes.

Report Header	Table Code	DED	Element Code
EIAC	XB	096	EIACODXA
LCN NOMENCLATURE	XB	201	LCNAMEXB
START LCN	XB	199	LSACONXB
TYPE	XB	209	LCNTYPXB
ALC	XB	019	ALTLCNXB
STOP LCN	XB	199	LSACONXB
UOC	XF	501	UOCSEIXC
SERV DES	CA	427	TASKCDCA
M/L SELECT (SELECTED)	CA	427	TASKCDCA
ICC SELECTION (SELECTED)			
DISP OPT (SELECTED)			
TASK NARRATIVE SELECTION (SELECTED)	CA	427	TASKCDCA
HARDNESS CRITICAL PROCEDURES SELECTION	CA	152	HRDCPCCA
TASK INTERVAL	CA	427	TASKCDCA
TASK FUNCTION	CA	427	TASKCDCA
LCN	CA	199	LSACONXB
ALC	CA	019	ALTLCNXB
REFERENCE NUMBER	HG	337	REFNUMHA
CAGE	HG	046	CAGECDXH
ITEM NAME	HA	182	ITNAMEHA
TM FUNCT GROUP CODE	XB	438	TMFGCDXB
TASK CD	CA	427	TASKCDCA
TASK IDENTIFICATION	CA	431	TASKIDCA
HCP	CA	152	HRDCPCCA
HMPC	CA	155	HAZMPCCA
TSK FREQ	CA	430	TSKFRQCA
MB	CA	238	AORMSBCA
LSAR ELAP TIME (MEASURED)	CA	224	MSDMETCA
LSAR ELAP TIME (PREDICTED)	CA	224	PRDMETCA
MANUALLY MEASURED ELAPSED TIME (ENTERED)			
SUBTASK NUMBER	CC	407	SUBNUMCB
TEXT SEQUENCE CODE	CC	450	TEXSEQCC
SEQUENTIAL TASK NARRATIVE	CC	372	SUBNARCC
WORK AREA	CB	514	SUBWACCB
PERS ID	CD	288	SUBPIDCD
MEAN MAN MINUTE	CD	226	SUBMMMCD
MEAN MINUTE ELAP TIME	CB	227	SBMMETCB
SSC	CD	387	SKSPCDGA
SS EVAL	CD	388	SSECDECD
LSAR MAN-HOURS (SUMMED PER SSC & PERS ID)	CD	226	SUBMMMCD
MANUALLY MEASURED MAN-HOURS (ENTERED)			
SUPPORT/TEST EQUIPMENT AND TOOLS (HEADER)			
ICC	EA	177	SEICCDEA
ITEM NAME	HA	182	ITNAMEHA
REFERENCE NUMBER	CG	337	TSREFNCG
CAGE	CG	046	TSCAGECG

QTY/TSK	CG	319	SQTYTKCG
ACTUAL QUANTITY USED (ENTERED)			
MANUAL EVALUATION (ENTERED)			
SPARE AND REPAIR PARTS (HEADER)			
ICC	HG	177	ITMCATHG
REFERENCE NUMBER	CI	337	PROREFCI
CAGE	CI	046	PROCAGCI
QTY/TASK	CI	319	PQTYTKCI
OTHER (HEADER)			
ICC (Q, W and AD)	HG	177	ITMCATHG
REFERENCE NUMBER	CI	337	PROREFCI
CAGE	CI	046	PROCAGCI
QTY/TASK	CI	319	PQTYTKCI
ICC (E, F, J, S, T, AND AF)	EA	177	SEICCDEA
REFERENCE NUMBER	CG	337	TSREFNCG
CAGE	CG	046	TSCAGECG
QTY/TSK	CG	319	SQTYTKCG
SUPPORT ITEMS NOT IDENTIFIED IN LSAR (HEADER) (MANUAL ENTRIES)			
REVIEWER'S NAME (ENTERED)			

LSA-019

30.20 LSA-023 MAINTENANCE PLAN, SUMMARY REPORT SPECIFICATION

30.20.1 SELECTION. The LSA-023 summary is selectable by mandatory EIAC, Start LCN, LCN TYPE, UOC, SERV DES and Report Part (1-4); and optional ALC (default is all ALC's), Stop LCN (default is all LCN's subordinate to, and including, the start LCN), ICC's for part IV (default is all applicable ICC's), Display Option (default is LCN), and Wartime/Peacetime (default is peacetime).

The report selections consist of:

a. RPT PT:
   1. Part 1, enter a (y) if part 1 of the 023 report is required, otherwise, leave blank.
   2. Part 2, enter a (y) if part 2 of the 023 report is required, otherwise, leave blank.
   3. Part 3, enter a (y) if part 3 of the 023 report is required, this includes both preventive and corrective maintenance. If only preventive maintenance is required enter a (P). If only corrective maintenance is required enter a (C). If part 3 is not required leave blank.
   4. Part 4, enter a (y) if part 4 of the 023 report is required, otherwise, leave blank. If blank, no entry should be made in the ICC select.

b. If a (y) was entered in part 4 of RPT PT selection, then enter the ICC's for which part 4 is required. See appendix E of MIL-STD-1388-2B for a listing and definitions of the various ICCs. If an (A) is entered in the ICC field, the output report will include the ICCS 8, M, D, 1, and 7; an entry of (B) will results in ICCs 2, 4, 5, 6, and H being included; an entry of (C) will result in ICCs of G, N, P, R, and 3 being included; and an entry of (V) will result in the ICC of V being included. These groupings will only have validity when definitions of the ICCs specified in appendix E of MIL-STD-1388-2B have been adhered to.

c. DISP OPT, enter an (X) if the report is to be sequenced by TM FGC in lieu of LCN; otherwise leave blank.

30.20.2 PROCESSING. The same qualifying criteria is used for all parts.

a. Part 1 of the report provides the technical and operational parameters for the items which are from the operations and maintenance requirements area, and several specific maintenance considerations, such as, whether the item is hardness critical, what type of support is being considered, the maintenance concept and the maintenance plan rationale. Part 1 should be pulled from the tables when the selection criteria has been met. To produce the report at least one AA and AG table should exist on file. Reference Number, CAGE and Item Designator Code may not appear if TYPE is Functional (F). The Reference Number is wrapped at the 16th position.

b. Part 2 of the report depicts reliability and maintainability parameters for the selected items in the order of comparative analyzed, allocated, predicted, and measured. Part 2 should be pulled from the

tables when the selection criteria has been met. To produce the report at least one BA and BD table should exist on file. NSN AND RELATED DATA, REFERENCE NUMBER, CAGE, MAOT, MAC. SMR, UI, and UNIT OF ISSUE PRICE may not appear if TYPE is Functional (F).

c. Part 3 of the report is divided into analyses of preventive and corrective maintenance tasks by maintenance level and hardware LCN designation. The preventive maintenance task area identified by the 2nd position of the task code (Q, C, P, M, N, L, and B). The corrective maintenance tasks are identified by the second position of the task code (all that are not preventive). This part identifies personnel and training requirement considerations. To produce the report the CA and its corresponding CD table should exist on file. The NO SSC can be calculated by summing up the number of Subtask Person Identifiers table CD for a given Skill Specialty Code and Task Code. The (P) or (M) preceding the and ELAP TIME values on the output represent predicted and measured, respectively. Where a measured value has not been input to the LSAR, the report will default to the predicted value.

d. Part 4 of this report provides a listing of all support items required to perform each task meeting the report selection criteria by ICC. To produce the report at least one CA, CG, EA, and HA table should exist on file.

e. In order to exercise the display option the TM FGC must be entered in the XB table.

f. Each part of this report should start at the top of a new page.

30.20.3 REPORT FORMAT. See Figure 3.17

30.20.4 REPORT SEQUENCING.

a. Depending upon the display option:
   1. If the display option of TM FGC is selected then within all report parts the output is sorted in ascending TM FGC then LCN sequence.
   2. If the display option of TM FGC is not selected then within all report parts the output is sorted in ascending LCN then TM FGC sequence.

b. For Parts 1 and 2, 4.a.1 and 4.a.2 is the sequencing used.

c. Part III A and B should be sorted by Maintenance Level, the first being crew the last being depot for that service designator sub-table. Within this sequence, Tasks are sorted in ascending LCN, then ascending Task Code (starting with the first position).

d. Numbers 4a.1 and .2 hold true for Part 4 of the output report.

30.20.5 DATA SOURCES. The source of the data appearing on the LSA-023 summary is depicted below by data table and element codes.

PART I

Report Header	Table Code	DED	Element Code
EIAC	XB	096	EIACODXA
LCN NOMENCLATURE	XB	201	LCNAMEXB
START LCN	XB	199	LSACONXB
ALC	XB	019	ALTLCNXB
TYPE	XB	203	LCNTYPXB
STOP LCN	XB	199	LSACONXB
UOC	XC	501	UOCSEIXC
UOC is matched VIA the XF Table			
SERVICE DESIGNATOR (selected)			
for part 1 match on:	AA	376	SERDESAA
for part 3 and 4 match on the 4 th position of the task code	CA	427	TASKCDCA
ICC (SELECTED)			
RPT PT (SELECTED)			
DISP OPT (SELECTED)			
WP (OPT SELECTED)			
TM FGC	XB	438	TMFGCDXB
ALC	AA	019	ALTLCNXB
LCN	AA	199	LSACONXB
LCN NOMENCLATURE	XB	201	LCNAMEXB
REFERENCE NUMBER	HG	337	REFNUMHA
CAGE	HG	046	CAGECDXH
ITEM DESIGNATOR CODE	XC	179	ITMDESXC
HCI	HG	151	HARDCIHG
SC	BA	410	SUPCONBA
SEC	BA	369	SECCLEBA
SERIAL NUMBER (HEADER)			
FROM	XD	373	FRSNUMXD
TO	XD	373	TOSNUMXD
AOR	AG	023	ANOPREAG
MB	AG	238	MEASBSAG
MSN DUR	AB	228	MMISDUAB
MB	AB	238	MMISDMAB
AI	AA	164	INHAVAAA
AA	AA	001	ACHAVAAA
AO	AB	273	OPAVAIAB
MTBF (HEADER)			
TECH	AG	229	TEMTBFAG
OPER	AG	229	OPMTBFAG
MTBMA (HEADER)			
TECH	AG	230	TMTBMAAG
OPER	AG	230	OPMRBMAG
MTBR	AG	235	MTBRXXAG
MB	AG	238	MEASBSAG
MTTR (HEADER)			
TECH	AA	236	TEMTTRAA
OPER	AA	236	OPMTTRAA
MAMDT (HEADER)			
TECH	AA	223	TMAMDTAA
OPER	AA	223	OMAMDTAA
MAX TTR	AA	222	MAXTTRAA
PCTL	AA	286	PERCENAA

MAINTENANCE CONCEPT	BB	207	RAMNARBB
(RAM CHARACTERISTICS NARRATIVE CODE OF (B))	BB	341	RAMCNABB
MAINTENANCE PLAN RATIONALE	BB	210	RAMNARBB
(RAM CHARACTERISTICS NARRATIVE CODE OF (E))	BB	341	RAMCNABB
PART II			
TM FGC	XB	438	TMFGCDXB
LCN NOMENCLATURE	XB	201	LCNAMEXB
ALC	BA	019	ALTLCNXB
LCN	BA	199	LSACONXB
NSN AND RELATED DATA (HEADER)			
NSN COGNIZANCE CODE	HA	253	COGNSNHA
NSN MATERIEL CONTROL CODE	HA	253	MATNSNHA
NSN FEDERAL SUPPLY CLASSIFICATION	HA	253	FSCNSNHA
NSN NATIONAL ITEM IDENTIFICATION NUMBER	HA	253	NIINSNHA
NSN SPECIAL MATERIAL IDENTIFICATION CODE/ MATERIEL MANAGEMENT AGGREGATION CODE	HA	253	SMMNSNHA
NSN ACTIVITY CODE	HA	253	ACTNSNHA
REFERENCE NUMBER	HG	337	REFNUMHA
CAGE	HG	046	CAGECDXH
CONV FACTOR	BA	059	CONVFABA
MAOT	HG	221	MAOTIMHG
MAC	HG	206	MAIACTHG
SMR	HG	389	SMRCODHG
UI	HA	488	UNITISHA
UNIT OF ISSUE PRICE	HD	314	PROUIPHD
UI PRICE PROVISIONING OF (Y)			
QPA	HG	316	QTYASYHG
RAM INDICATOR CODE	BD	347	RAMINDBD
MTBF (HEADER)			
TECH	BD	229	TEMTBFBD
MB	BD	238	TMTBFMBD
OPER	BD	229	OPMTBFBD
MB	BD	238	OMTBFMBD
MTBMA (HEADER)			
TECH	BD	230	TMTBMABD
MB	BD	238	TMTBMMBD
OPER	BD	230	OMTBMABD
MB	BD	238	OMTBMMBD
MTBM-INH	BD	232	INHMTBBD
MB	BD	238	INHMTMBD
MTBM-IND	BD	231	INMTBMBD
MB	BD	238	IMTBMMBD
MTBM NO DEF	BD	233	NOMTBMBD
MB	BD	238	NMTBMMBD
MTBPM	BD	234	MTBMPVBD
MB	BD	238	MTBMPMBD
MTBR	BD	235	MTBRXXBD
MB	BD	238	MTBRMBBD
MTTR (HEADER)			
TECH	BD	236	MTTRTHBD
OPER	BD	236	MTTROPBD

MAX TTR	BD	222	MAXTTRBD
PCTL	BD	286	PERCENBD

PART III A (PREVENTIVE) AND B (CORRECTIVE)

MAINTENANCE LEVEL	CA	427	TASKCDCA
TASK CODE 3RD POSITION			
TM FGC	XB	438	TMFGCDXB
ALC	CA	019	ALTLCNXB
TASK CODE	CA	427	TASKCDCA
TASK FREQ	CA	430	TSKFRQCA
MB	CA	238	AORMSBCA
HCP	CA	152	HRDCPCCA
NO SSC (CALCULATED BY SUMMING SPI/SSC&TC)			
SUBTASK PERSON ID	CD	288	SUBPIDCD
M-H PER SSC (HEADER)			
Calculated sum SUBMMCD and divided by 60 for a SSC and task code	CD	226	SUBMMMCD
ELAP TIME (HEADER)			
MEASURED	CA	224	MSDMETCA
PREDICTED	CA	224	PRDMETCA

SSC and new or modified SSC are pulled from table CD, there should only be one, but if there is 2, the new or modified SSC should be selected. The corresponding skill levels should be pulled from either table GA or GB.

SKILL LEVEL (HEADER)			
SKILL LEVEL	GA	386	SKLVCDGA
NEW OR MODIFIED SKILL LEVEL	GB	386	MDSCLCGB
SSC (HEADER)			
SSC	CD	387	SKSPCDGA
NEW OR MODIFIED SSC	CD	257	MDCSSCGB
TRN REC	CA	463	TRNRECCA
TRN EQP	CA	358	TRNRQCCA
LCN	CA	199	LSACONXB

PART IV

MAINTENANCE LEVEL	CA	427	TASKCDCA
TASK CODE 3RD POSITION			
TM FGC	XB	438	TMFGCDXB
ALC	CA	019	ALTLCNXB
LCN NOMENCLATURE	XB	201	LCNAMEXB
LCN	CA	199	LSACONXB
TASK CODE	CA	427	TASKCDCA
TASK IDENTIFICATION	CA	431	TASKIDCA
FAC	CA	358	FTRNRQCA
REQUIREMENTS FOR SUPPORT EQUIPMENT (HEADER)			
ICC	EA	177	SEICCDEA
ITEM NAME	HA	182	ITNAMEHA
QTY/TASK	CG	319	SQTYTKCG
UM	CG	491	SQTKUMCG
REFERENCE NUMBER	CG	337	TSREFNCG
CAGE	CG	046	TSCAGECG

LSA-023

30.21 LSA-024 MAINTENANCE PLAN REPORT SPECIFICATION

30.21.1 SELECTION. The LSA-024 summary is selectable by mandatory EIAC, Start LCN, UOC, and SERV DES; and optional ALC, Stop LCN, and LCN Type.

The report selections consist of the following:

a. Report Parts Selected:

1. Enter the number of the summary parts desired; "1" for Part I; "2" for Parts I and II; and "3" for Parts I, II and III. If left blank, all three parts will be produced.

2. If Part I only is selected and no header information is desired, the remainder of this selection criteria may be left blank.

b. Equipment Type Code - If an "S" (Support Equipment) is entered, interval and maintenance cycle will be displayed. If the code is "A" (Air), "M" (Missile) or blank, interval and maintenance cycle will not be displayed.

c. Item Category Code - Enter the ICCs for the types of support items to be displayed in Parts II and III, respectively. For ease of selection, if ICCs 8, M, D, 1, and 7 are all desired, enter an "A". If ICCs 2, 4, 5, 6, and H are all desired, enter a "B". If ICCs N, P, R, G, and 3 are all desired, enter a "C".

d. Display Option - The report may be sequenced by TM FGC in lieu of LCN if so desired.

e. Maintenance Level - If Parts II and III of the report are to display only a specific maintenance level(s), enter the appropriate code(s). If this field is left blank, all maintenance levels will be selected.

f. Technical Factor Basis is always 100 Flight Hours (was an option under MIL-STD-1388-2A).

30.21.2 PROCESSING. The same qualifying criteria is used for all three parts of this report. Task Codes must first qualify by matching on selected SERV DES, then maintenance levels selected. As a minimum, there must be one LCN within the selected range with a valid entry in table BB for either Item Function (element RAMNARBB with a narrative code of "A") or Maintenance Concept (element RAMNARBB with a narrative code of "B"). For Part II Reference Number and CAGE to be produced, there must be a match between the LCN from table CA and the LCN from table HG (for the corresponding Reference Number and CAGE) if the LCN selection is physical (LCN Type of "P"). If the LCN selection is functional (LCN Type of "F"), then a matching physical LCN must be found in table XG before being matched against table HG LCNs.

a. The following definitions are for the header information of the LSA-024 summary which are not contained in the LSAR.

1. Date of Initial Submission/Revision/Date of Revision - A nineteen position field containing the date of the initial submission of the maintenance plan, the alphabetic revision indicator, and the date of the current revision. The dates and revision should be entered in the following format including slashes and dashes: MM-DD-YY/A/MM-DD-YY.

2. Preparing Activity - A fifteen position field containing the name of the performing activity having responsibility for the data.

3. Prepared By - A fifteen position field containing the name of the individual having responsibility for accuracy of the data.

4. DLSC Screen Date - An eight position field containing the date indicating when screening results were accepted by the government on all repairables items. The date should be entered in the following format, including dashes: MM-DD-YY.

5. Navy Ammunition Logistic Code (NALC) - A four position alphanumeric code identifying the generic description within the Federal Supply Class. The NALC is assigned by Ships Parts Control Center (SPCC). The NALC is used for fleet reporting/requisitioning of ammunition and to indicate functional interchangeability of items.

6. Maintenance Plan Number - A number identifying each maintenance plan. The Maintenance Plan Number is assigned by the requiring authority (DED 180).

b. The following definitions and calculations are for technical factors:

1. Interval - The recommended operating hours or usage rate preceded by an alpha character indicating the type of maintenance requirements for an item. The calculation and codes are as follows:

$$\text{Interval} = \frac{\text{Annual Operating Requirement (AOR) (Conversion Factor)}}{\sum_{i=1}^{n} \text{Task Frequency}}$$

P - Preventive (1st position Task Code of A or Z)
C - Corrective (1st position Task Code of B, G, R, J, H, L, K, N, S, O or W)
T - Servicing (1st position Task Code of P, M, or C)
U - Calibration (1st position Task Code of D, E, or F)

AOR - Pulled from table AG (element ANOPREAG) based on the values entered for AORLCNCA, AORALCCA, AORTYPCA, and AORMSBCA in table CA for the given item.

Conversion Factor - Pulled from table BA (element CONVFABA).

Task Frequency - Pulled from table CA (element TSKFRQCA).
Summation of Task Frequencies within given type of maintenance for subject LCN.

2. Maintenance Cycle - This data is calculated as follows:

Maintenance Cycle = AOR x Conversion Factor

AOR - Pulled from table AG (element ANOPREAG) based on the values entered for AORLCNCA, AORALCCA, AORTYPCA, and AORMSBCA in table CA for the given item.

Conversion Factor - Pulled from table BA (element CONVFABA).

c. Other technical factors are computed as follows:

MRF (Repairables) = [MTD(D) + MTD(CAD)] X MRR

Numeric Stockage Objective (NSO) = RMSS LVL (DED 284)

$$DSR = \frac{MTD(CAD)}{MTD(D) + MTD(CAD)}$$

BDSR = MTD(CBD) X MRR

RPF = [MTD(F) + MTD(H)] X MRR

$$SAR = 1 - \frac{MTD(D)}{MTD(D) + MTD(CAD) + MTD(CBD)}$$

$$RSR = \frac{MTD(D)}{MTD(D) + MTD(CAD)}$$

RRR = Overhaul Replacement Rate (ORR)(DED 241)
(Order of NHAINDHH precedence for multiple occurrences of ORR for a given LCN in Table HH: N, B, C, E, A, F, "blank". '*' is excluded.)

MTD - Maintenance Task Distribution
MTD(F) - Second subfield of the MTD
MTD(H) - Third subfield of the MTD
MTD(D) - Fifth subfield of the MTD
MTD(CBD) - Sixth subfield of MTD
MTD(CAD) - Seventh subfield of MTD
MRR - Maintenance Replacement Rate I

c. Part II - repair capability items qualify based on valid CA Table entry first and ICC selection next. Maintenance significant consumables qualify out of Table CI based on an ICC of "AB". I/R (Interchangeability/Replaceability code) is determined based on the Interchangeability Code entered in table HP (element INTCHCHP) based on the following:

IC	I/R
OW	I
OR	I
TW	I
OM	R
TM	R
NI	Blank
NR	Blank

When multiple ICs are contained in table HP for a given Reference Number, CAGE, LCN and ALC combination the order of precedence for I/R assignments are "I", followed by "R", followed by blank.

d. Part III - REQ NO (Requirement Number) is a five position counter (first four positions numeric starting with 0001, and last position alphabetic P, C, T, or U) based on the type of task (Predictive (P), Corrective (C), Servicing (T), or Calibration (U). The counter begins at 0001 for each type of task and resets to 0001 for a new LCN.

e. Page breaks are required between Part I and II and Part II and III. For Part II, Repairable Items, the report headers (i.e., LCN, ALC, Reference Number, etc.) are repeated for each item to be output in this section.

30.21.3 REPORT FORMAT. See Figure 3.18

30.21.4 REPORT SEQUENCE. Part I is sequenced by ascending LCN (or TM FGC if selected in the Display Option). Part II is sequenced by ascending LCN and ascending Reference Number within each LCN. Part III is sequenced by ascending LCN, then maintenance type with Predicted first, Corrective second, Service third, and Calibration fourth, then by maintenance level (Crew-Depot).

30.21.5 DATA SOURCES. The source of data appearing on the LSA-024 summary is depicted below by data table and element codes.

Report Header	Table Code	DED	Element Code
EIAC	XB	096	EIACODXA
LCN NOMENCLATURE	XB	201	LCNAMEXB
START LCN	XB	199	LSACONXB
TYPE	XB	209	LCNTYPXB
ALC	XB	019	ALTLCNXB
STOP LCN	XB	199	LSACONXB
UOC	XF	501	UOCSEIXC
SERV DES	CA	427	TASKCDCA
DISP OPT (SELECTED)			
MAINTENANCE LEVEL OPTION (SELECTED)	CA	427	TASKCDCA
PART 2 ITEM CATEGORY CODES (SELECTED)	HG	181	ITMCATHG
PART 3 ITEM CATEGORY CODES (SELECTED)	EA/HG	181	SEICCDEA
EQUIPMENT TYPE CODE (SELECTED)			
REPORT PARTS (SELECTED)			
PART I - GENERAL CONSIDERATIONS (HEADER)			
REFERENCE NUMBER	HG	337	REFNUMHA
CAGE	HG	046	CAGECDXH
ITEM DESIGNATOR	XC	179	ITMDESXC
NSN & RELATED DATA	HA	253	COGNSNHA
			SMMNSNHA
			MATNSNHA
			FSCNSNHA
			NIINSNHA
			ACTNSNHA
MAINTENANCE PLAN NUMBER (SELECTED THROUGHPUT)			
SERD NUMBER (SELECTED THROUGHPUT)	EF	416	SERDNOEF
TM FGC	XB	438	TMFGCDXB
SMR CODE	HG	389	SMRCODHG
DLSC SCREEN (SELECTED THROUGHPUT)			
DATE OF SUB/REV/DATE OF REVISION (THROUGHPUT)			

APPROVED BY (MANUAL ENTRY)			
TITLE (MANUAL ENTRY)			
TYPE EQUIP CODE (SELECTED THROUGHPUT)			
PREPARING ACTIVITY (SELECTED THROUGHPUT)			
NALC (THROUGHPUT)			
PREPARED BY (SELECTED THROUGHPUT)			
REVIEWED BY (MANUAL ENTRY)			
DATE OF APPROVAL (MANUAL ENTRY)			
LCN	BB	199	LSACONXB
ALC	BB	046	ALTLCNXB
NARRATIVE (HEADER)			
ITEM FUNCTION	BB	180	RAMNARBB
(RAM CHARACTERISTICS NARRATIVE CODE OF A)	BB	341	RAMCNABB
MAINTENANCE CONCEPT	BB	207	RAMNARBB
(RAM CHARACTERISTICS NARRATIVE CODE OF B)	BB	341	RAMCNABB
MAINTENANCE PLAN RATIONALE	BB	210	RAMNARBB
(RAM CHARACTERISTICS NARRATIVE CODE OF E)	BB	341	RAMCNABB
PART II - REPAIR CAPABILITY (HEADER)			
REPAIRABLE ITEMS (HEADER)			
LCN	HG	199	LSACONXB
ALC	HG	019	ALTLCNXB
REFERENCE NUMBER	HG	337	REFNUMHA
CAGE	HG	046	CAGECDXH
LCN NOMENCLATURE	XB	201	LCNAMEXB
NSN & RELATED DATA	HA	253	COGNSNHA
			SMMNSNHA
			MATNSNHA
			FSCNSNHA
			NIINSNHA
			ACTNSNHA
TMFGC	XB	438	TMFGCDXB
IND	HG	162	INDCODHG
I/R (GENERATED)			
(INTERCHANGEABILITY CODE)	HP	172	INTCHCHP
SMR	HG	389	SMRCODHG
WEAROUT	BA	505	WEOULIBA
MB	BA	238	WOLIMBBA
AMC	HA	003	ACQMETHA
SMIC	HA	395	SMAINCHA
DMIL	HA	076	DEMILIHA
RIP	HG	348	REMIPIHG
AMSC	HA	004	AMSUFCHA
HCI	HG	151	HARDCIHG
MAINTENANCE TASK DISTRIBUTION	HG	214	OMTDOOHG
			FMTDFFHG
			HMTDHHHG
			LMTDLLHG
			DMTDDDHG
			CBDMTDHG
			CADMTDHG
MRR	HG	211	MRRONEHG
MRF (CALCULATED)			
RPF (CALCULATED)			

DSR (CALCULATED)			
BDSR (CALCULATED)			
NSO	HG	329	RMSSLIHG
SAR (CALCULATED)			
RSR (CALCULATED)			
RRR	HH	281	OVHREPHH
INTERVAL (CALCULATED)			
MAINT CYCLE (CALCULATED)			
MAINTENANCE SIGNIFICANT CONSUMABLES (HEADER)			
LCN	HG	199	LSACONXB
ALC	HG	019	ALTLCNXB
REFERENCE NUMBER	HG	337	REFNUMHA
CAGE	HG	046	CAGECDXH
ITEM NAME	HA	188	ITNAMEHA
NSN & RELATED DATA	HA	253	COGNSNHA
			SMMNSNHA
			MATNSNHA
			FSCNSNHA
			NIINSNHA
			ACTNSNHA
IND	HG	162	INDCODHG
TM FGC	HK	438	TMFGCDHK
I/R (GENERATED)			
(INTERCHANGEABILITY CODE)	HP	182	INTCHCHP
PART III - MAINTENANCE REQUIREMENTS (HEADER)			
LCN	CA	199	LSACONXB
ALC	CA	019	ALTLCNXB
REQ NO (GENERATED)			
TASK CD	CA	427	TASKCDCA
TASK IDENTIFICATION	CA	431	TASKIDCA
TSK FREQ	CA	430	TSKFRQCA
MB	CA	238	AORMSBCA
INTERVAL (CALCULATED)			
TM FGC	XB	438	TMFGCDXB
SUPPORT ITEM REQUIREMENTS (HEADER)			
ICC (1-8, D, E, F, G, H, J, M, N, P, R, S, T, U, V, AC, AF)	EA	177	SEICCDEA
REFERENCE NUMBER	CG	337	TSREFNCG
CAGE	CG	046	TSCAGECG
ITEM NAME	HA	182	ITNAMEHA
or			
ICC (9, K, L, Q, W, X, Y, Z, AA, AB, AD, AE)	HG	177	ITMCATHG
REFERENCE NUMBER	CI	337	PROREFCI
CAGE	CI	046	PROCAGCI
ITEM NAME	HA	182	ITNAMEHA

LSA-024

30.22 LSA-025 PACKAGING REQUIREMENTS DATA REPORT SPECIFICATION

30.22.1 SELECTION. The LSA-025 summary is selected by either a mandatory START LCN or REFERENCE NUMBER and CAGE. Optional Selections are ALC, STOP LCN, UOC, DEGREE OF PROT, and TAPE OPTION. LCN-TYPE (TYPE) must always be "P". If Reference Number/CAGE are selected, then all option features except DEGREE OF PROT are ignored.

30.22.2 PROCESSING. At least one Reference Number/CAGE combination within the LCN range must have an entry in table HF in order to produce an LSA-025 summary. When more than one LCN for the same Reference Number/CAGE combination is qualified, only one set of packaging requirements is output.

a. ALTHOUGH NOT DESCRIBED IN THE STANDARD, If the tape option is selected, then a five position sequence number is assigned to the RESERVED positions, immediately following the Card Type in card column one. The sequence number of 0001 and are assigned in ascending ASCII numeric order. The fifth position of the sequence number is left blank.

b. Supplemental Card Indicator (SCI) generated based on the following:

If only an "A" card is used, the SCI is "1".
If an "A" and "B" card are used, the SCI is "2".
If an "A", "B", and "C" card are used, the SCI is "3".
If an "A", "B", and "D" card are used, the SCI is "4".

30.22.3 REPORT FORMAT. See Figure 3.19

30.22.4 REPORT SEQUENCE. The report is sequenced in ascending Reference Number and CAGE sequence. Within each Reference Number, Degree of Protection (DOP) (A, B, C) are output in ascending DOP sequence.

30.22.5 DATA SOURCE. The source of data appearing on the LSA-025 summary is depicted below by data table and element codes.

Report header	Table Code	DED	Element Code
EIAC	HG	096	EIACODXA
ITEM NAME	HA	182	ITNAMEHA
START LCN	HG	199	LSACONXB
ALC	HG	019	ALTLCNXB
LCN TYPE	HG	203	LCNTYPXB
STOP LCN	HG	199	LSACONXB
UOC	HO/XC	501	UOCSEIXC
DEGREE OF PROT	HF	074	DEGPROHF
TAPE OPTION (SELECTED)			
CAGE	HF	046	CAGECDXH
REFERENCE NUMBER	HF	337	REFNUMHA
ITEM NAME	HA	182	ITNAMEHA
CARD (GENERATED)			
SEQUENCE NUMBER (GENERATED FOR ONLY TAPE OPTION)			
NSN AND MTL-MGT-CD	HA	253	FSCNSNHA
	HA	253	NIINSNHA

	HA	253	SMMNSNHA
UNIT WEIGHT	HA	497	UWEIGHHA
UNIT SIZE LEN	HA	496	ULENGTHA
WID	HA	496	UWIDTHHA
HEI	HA	496	UHEIGHHA
PKG CC	HF	282	PACCATHF
SPEC MKG	HF	394	SPEMRKHF
QUP	HF	321	QTYUPKHF
ICQ	HF	175	INCQTYHF
SCI (GENERATED)			
HC	HA	154	HAZCODHA
MTH PRES	HF	239	MEPRESHF
CD	HF	045	CDPROCHF
PRES MATL	HF	295	PRSMATHF
WRAP MATL	HF	517	WRAPMTHF
CUSH MATL	HF	067	CUSHMAHF
CT	HF	068	CUSTHIHF
UNIT CONT	HF	486	UNICONHF
DOP	HF	074	DEGPROHF
INT CONT	HF	174	INTCONHF
UC LVL	HF	487	UCLEVLHF
PK CD	HF	283	PKGCODHF
UNIT PACK WEIGHT	HF	495	UNPKWTHF
UNIT SIZE LEN	HF	494	LENUPKHF
WID	HF	494	WIDUPKHF
DEP	HF	494	DEPUPKHF
UNIT PACK CUBE	HF	493	UNPKCUHF
OPI	HF	279	OPTPRIHF
SUPPLEMENTAL PACKAGING DATA	HF	409	SUPPKDHF
CAGE	HF	046	PKCAGEHF
SPI NUMBER	HF	396	SPINUMHF
SPI REV	HF	397	SPIREVHF
SPI DATE	HF	187	SPDATEHF
CONTAINER NSN	HF	253	CONNSNHF

LSA-025

30.23 LSA-026 PACKAGING DEVELOPMENTAL DATA REPORT SPECIFICATION

30.23.1 SELECTION. The LSA-026 summary is selected by either a mandatory START LCN or REFERENCE NUMBER and CAGE. Optional Selections are ALC, STOP LCN, UOC, and Source Code. LCN-Type (TYPE) must always be "P".

30.23.2 PROCESSING. In order to produce an LSA-026 summary, at least one qualified parts application (HG) must be contained within the selected LCN range.

30.23.3 REPORT FORMAT. See Figure 3.20

30.23.4 REPORT SEQUENCE. The report is sequenced in ascending Reference Number and CAGE. Within each Reference Number and CAGE grouping, UI Price is sorted in descending sequence. LCN applications are sorted in ascending sequence.

30.23.5 DATA SOURCE. The source of data appearing on the LSA-026 summary is depicted below by data table and element codes.

Report header	Table Code	DED	Element Code
EIAC	HG	096	EIACODXA
ITEM NAME	HA	182	ITNAMEHA
START LCN	HG	199	LSACONXB
ALC	HG	019	ALTLCNXB
LCN TYPE	HG	203	LCNTYPXB
STOP LCN	HG	199	LSACONXB
UOC	HO/XC	501	UOCSEIXC
SOURCE CODE	HG	389	SMRCODHG
CAGE	HA	046	CAGECDXH
REFERENCE NUMBER	HA	337	REFNUMHA
NAT STOCK NUMBER	HA	253	FSCNSNHA
	HA	253	NIINSNHA
UI	HA	488	UNITISHA
UNIT WEIGHT	HA	497	UWEIGHHA
UNIT SIZE LENGTH	HA	496	ULENGTHA
WIDTH	HA	496	UWIDTHHA
HEIGHT	HA	496	UHEIGHHA
SL	HA	377	SHLIFEHA
PS/PC	HA	291	PHYSECHA
HC	HA	154	HAZCODHA
UI PRICE	HD	490	UIPRICHD
LOT QUANTITY FROM	HD	205	LOTQFMHD
TO	HD	205	LOTQTOHD
DOP	HF	074	DEGPROHF
QUP	HF	321	QTYUPKHF
PKG-CAT	HF	282	PACCATHF
LCN	HG	199	LSACONXB
ALC	HG	019	ALTLCNXB
QTY/ASSY	HG	316	QTYASYHG
QTY/EI	HG	317	QTYPEIHG
SMR	HG	389	SMRCODHG
USABLE ON CODES	HO/XC	501	UOCSEIXC

LSA-026

30.24 LSA-027 FAILURE/MAINTENANCE RATE SUMMARY REPORT SPECIFICATION

30.24.1 SELECTION. The LSA-027 summary is selectable by mandatory EIAC, Start LCN, LCN TYPE, UOC and SERV DES; and optional ALC (default is all ALC's), Stop LCN (default is all LCNs subordinate to, and including, the start LCN), Operating Program (default is none), OP MB (which must correspond with the AOR MB) (default is none), and MRRI/II ratio (default is none).

a. Enter the required Operating Program and its associated Measurement Base when option 1 is required for the MRRI and MRRII calculations. The OP MB should correspond to the MB of the AOR under analysis. If left blank MRRI can not be calculated.
b. Enter the required MRRI/MRRII ratio when the MRRII is to be calculated, if left blank then MRRII can not be calculated.

30.24.2 PROCESSING. This summary provides the basic information for task frequency both given and calculated, and maintenance replacements rates I and II, both given and calculated. To produce the LSA-027 Summary a BD and BF table must be established in the database. Only tasks with a code "H", and "J" in the first position will be included in this report and items with Item Category Codes of X for H task codes and Y for J tasks code will qualify for output on this report.

a. Most of the information used on this report can be pulled directly from the tables, except for the calculated assembly task frequency, MRRI, and MRRII and the calculated repair part task frequency, MRRI and MRRII.
   1. The data elements used in the calculated assembly task frequency of the report are depicted by comparative analysis (C), allocated (A), predicted (P), and measured (M) (Where a measured value has not been entered, the report will default to the predicted, then allocated, and finally comparative analysis). (these come from Ram Indicator Code). These data elements include: Part Failure Rate and MB; MTBM Induced and MB; and MTBM No Defect and MB. The task frequency is calculated as per instructions in DED 430, Assembly Task Frequency is against only that task which is against that assembly.

$$TF = \left[\sum_{j=1}^{M} \left[\sum_{i=1}^{N} FMRi\ (FR + 1/MTBM\text{-}IN + 1/MTBM\text{-}ND) * CON\ FACT\right]\right] * AOR$$

FMR = Failure Mode Ratio
FR = Failure Rate
MTBM-IN = MTBM (INDUCED)
MTBM-ND = MTBM (NO DEFECT)
i = Failure Mode resulting in Task Code reference.
N = Number of Failure Modes resulting in same Task Code reference per LCN/ALC
j = Unique LCN/ALC resulting in the same Task Code reference
M = Number of LCN/ALCs containing the same Task Code reference
CON FACT = Conversion Factor (must be on each affected LCN/ALC)
AOR = Annual Operating Requirement (must be on the start LCN; MB must be the same throughout calculation) (Peacetime Only)

NOTE: This calculation requires that Corrective tasks only are documented and that these tasks are not documented in a manner that would result in "double counting", e.g. a referenced LCN/ALC-Task Code appearing on a high level assembly, and an intermediate assembly both accounting for the frequency of occurrence of this task by the associated FM Ratio and Failure

Rate of the respective assemblies. For a given LCN/ALC containing the referenced Task Code, the MTBM-IN , MTBM-ND and/or Con Factor may be blank. If MTBM-IN or MTBM-ND are blank; then a warning message is displayed.

2. The data elements used in the calculated assembly MRRI is the task frequency calculated in a.1 multiplied by the quantity per task multiplied by the operating program (if applicable) which is divided by the AOR.

   example: $$MRRI = \sum_{a=1}^{N} TF(a) \times Qty/Task(a) \times \frac{\text{Operating Program (selected)}}{AOR\ (p)}$$

3. The data elements used in calculating the MRRII is the MRRI calculated in a.2 multiplied by the selected MRRI/II ratio.
   MRRII = MRRI(calc) * MRRI/II Ratio (Selected)

4. The data elements used in the calculated repair part task frequency of the report are depicted by comparative analysis (C), allocated (A), predicted (P), and measured (M) (measured values are reported wherever possible)(these come from RAM Indicator Code). These data elements include: Part Failure Rate and MB; MTBM Induced and MB; and MTBM No Defect and MB. The task frequency is calculated as per instructions in DED 430, Repair Part Task Frequency is against only that task which is against that repair part.

   $$TF = \left[\sum_{j=1}^{M} \left[\sum_{i=1}^{N} FMRi\ (FR + 1/MTBM\text{-}IN + 1/MTBM\text{-}ND) * CON\ FACT\right]\right] * AOR$$

   FMR = Failure Mode Ratio
   FR = Failure Rate
   MTBM-IN = MTBM (INDUCED)
   MTBM-ND = MTBM (NO DEFECT)
   i = Failure Mode resulting in Task Code reference.
   N = Number of Failure Modes resulting in same Task Code reference per LCN/ALC
   j = Unique LCN/ALC resulting in the same Task Code reference
   M = Number of LCN/ALCs containing the same Task Code reference
   CON FACT = Conversion Factor (must be on each affected LCN/ALC)
   AOR = Annual Operating Requirement (must be on the start LCN; MB must be the same throughout calculation) (peacetime only)

NOTE: This calculation requires that Corrective tasks only are documented and that these tasks are not documented in a manner that would result in "double counting", e.g. a referenced LCN/ALC-Task Code appearing on a high level assembly, and an intermediate assembly both accounting for the frequency of occurrence of this task by the associated FM Ratio and Failure Rate of the respective assemblies. For a given LCN/ALC containing the referenced Task Code, the MTBM-IN , MTBM-ND and/or Con Factor may be blank. If MTBM-IN or MTBM-ND are blank; then a warning message is displayed.

5. The data elements used in the calculated repair part MRRI is the task frequency calculated in a.3 multiplied by the quantity per task multiplied by the operating program (if applicable) which is divided by the AOR.

$$\text{example:}\quad MRRI=\sum_{rp=1}^{N} TF(rp)X\ Qty/Task(rp)\ X\ \frac{\text{Operating Program (selected)}}{AOR\ (p)}$$

6. The data elements used in calculating the MRRII is the MRRI calculated in a.5 multiplied by the selected MRRI/II ratio.
   MRRII = MRRI(calc) * MRRI/II Ratio (Selected)

30.24.3 REPORT FORMAT. See Figure 3.21

30.24.4 REPORT SEQUENCE. The report is sequenced by ascending values of LCN for a given Task Code, then ascending task code. This hold true for the Assembly LCN, Repair Part LCN, and Task LCN. For the RAM LCNs they are sequenced in ascending values, then by FMIs.

30.24.5 DATA SOURCES. The source of the data appearing on the LSA-027 summary is depicted below by data table and element codes.

Report Header	Table Codes	Ded	Element Code
EIAC	XB	096	EIACODXA
LCN NOMENCLATURE	XB	201	LCNAMEXB
START LCN	XB	199	LSACONXB
ALC	XB	019	ALTLCNXB
TYPE	XB	203	LCNTYPXB
UOC	XC	501	UOCSEIXC
UOC is matched VIA the XF Table			
STOP LCN	XB	199	LSACONXB
SERVICE DESIGNATOR (Selected)			
match on the 4th position of the task code	BH	427	TASKCDCA
OPERATING PROGRAM (SELECTED)			
OP MB (SELECTED MUST MATCH AOR MB)			
MRRI/II RATIO (SELECTED)			
1 IND			
LCN (ITEM BEING REPAIRED)	BH	199	LSACONBH
(LCN IS BASED ON corrective TASK code)	BH	427	TASKCDBH
TASK TYPE	BH	433	TATYPEBH
ALC	BH	019	ALTLCNBH
LCN NOMENCLATURE	XB	201	LCNAMEXB
AOR (peacetime only)	AG	023	ANOPREAG
MB	AG	238	MEASBSAG
SMR CODE	HG	389	SMRCODHG
MRR MOD	HG	213	MRRMODHG
WEAROUT LIFE	BA	505	WEOULIBA
MB	BA	238	WOLIMBBA
2 IND			
LIST ALL REPAIR PARTS FOR "H" R&R TASK, VIA B/CA/CI THAT QUALIFY ON ICC="X" IN HG TABLE			
LCN (FOR H TASKS AND X ICC'S)	CI	199	PROLCNCI
CHECK HG ICC	HG	177	ITMCATHG
ALC	CI	019	PROALCCI
ITEM NAME	HA	182	ITNAMEHA

REFERENCE NUMBER	HA	337	REFNUMHA
CAGE	HA	046	CAGECDXH
SMR CODE	HG	389	SMRCODHG
MRR MOD	HG	213	MRRMODHG

2a IND

LIST ALL MRRI AND II'S AGAINST THE LCN/REF NO/CAGE FROM HG FOR ALL 2 IND'S (IN SAME ORDER AS 2 IND'S)

TABLE HG (HEADER)

MRRI	HG	211	MRRONEHG
MRRII	HG	212	MRRTWOHG

LIST THE CALCULATED MRRI AND MRRII FOR THE APPLICABLE CI REPAIR PARTS

CALCULATED (HEADER)

MRRI (CALCULATED BY ADP SYSTEM)
- CALCULATED TASK FREQUENCY (CALCULATED)
- MB (TAKEN FROM CALCULATIONS)
- QTY/TASK — CI 319 PQTYKCI
- OPERATING PROGRAM (SELECTED)
- OP MB (SELECTED MUST MATCH AOR MB)

MRRII (CALCULATED BY ADP SYSTEM)
- MRRI (CALCULATED BY ADP SYSTEM)
- MRRI/II RATIO (SELECTED)

---

3 IND

LIST THE FIRST H TASK AND ITS TABLE AND CALCULATED TASK FREQUENCY. THE TASK FREQUENCY IS FOR THE SPECIFIC TASK. THE CALC TASK FREQUENCY IS BASED ON THE AFFECTED LCNS FROM THE 5 IND.

LCN	BH	199	TLSACNBH
(LCN IS BASED ON CORRECTIVE TASK CODE)	BH	427	TASKCDBH
ALC	BH	019	TALCNCBH
TASK CODE	BH	427	TTASKCBH
TABLE CA TASK FREQ	CA	430	TSKFRQCA
MB	CA	238	AORMSBCA

CALCULATED TASK FREQ (CALCULATED)

MB (TAKEN FROM CALCULATIONS)

FAILURE MODE RATIO	BF	136	FMRATOBF
FAILURE RATE	BD	140	FAILRTBD
MB	BD	238	FARAMBBD
RAM I C	BD	347	RAMINDBD
MTBM INDUCED	BD	231	INMTBMBD
MB	BD	281	IMTBMMBD
MTBM NO DEFECT	BD	233	NOMTBMBD
MB	BD	238	NMTBMMBD
CONV FACT	BA	059	CONVFABA
AOR	AG	023	ANOPREAG
MB	AG	238	MEASBSAG

---

4 IND

LIST ALL QUALIFYING CI'S PROVISIONING PARTS THAT ARE USED FOR THIS TASK CODE USE THE TASK LCN AND ALC TO IDENTIFY THE PARTS USED

LCN	CI	199	TSKLCNCI
ALC	CI	019	TSKALCCI

PRINT THE PROVISIONING PARTS

LCN	CI	199	PROLCNCI

ALC	CI	019	PROALCCI
REFERENCE NUMBER	CI	337	PROREFCI
CAGE	CI	046	PROCAGCI
QTY/TASK	CI	319	PQTYTKCI
UM	CI	491	PQTKUMCI

---

5 IND

LIST ALL AFFECTED LCN'S & FMI'S FOR THIS "H" TASK

LCN	BA/BH	199	LSACONXB
ALC	BA/BH	019	ALTLCNXB
FMI	BF	134	FAMOINBF
FAILURE MODE RATIO	BF	136	FMRATOBF
FAILURE RATE	BD	140	FAILRTBD
MB	BD	238	FARAMBBD
RAM I C	BD	347	RAMINDBD
MTBM INDUCED	BD	231	INMTBMBD
MB	BD	238	IMTBMMBD
MTBM NO DEFECT	BD	233	NOMTBMBD
MB	BD	238	NMTBMMBD
CONV FACT	BA	059	CONVFABA

REPEAT THIS PROCESS FOR THE NEXT "H" TASK FOR THIS LCN

---

2 IND

LIST ALL REPAIR PARTS FOR "J" REPAIR TASK, VIA B/CA/CI THAT QUALIFY ON ICC="Y" IN HG TABLE

LCN (FOR H TASKS AND Y ICC'S)	CI	199	PROLCNCI
CHECK HG ICC	HG	177	ITMCATHG
ALC	CI	019	PROALCCI
ITEM NAME	HA	182	ITNAMEHA
REFERENCE NUMBER	HA	337	REFNUMHA
CAGE	HA	046	CAGECDXH
SMR CODE	HG	389	SMRCODHG
MRR MOD	HG	213	MRRMODHG

2a IND

LIST ALL MRRI AND II'S AGAINST THE LCN/REF NO/CAGE FROM HG FOR ALL 2 IND'S (IN SAME ORDER AS 2 IND'S)

TABLE HG (HEADER)

MRRI	HG	211	MRRONEHG
MRRII	HG	212	MRRTWOHG

LIST THE CALCULATED MRRI AND MRRII FOR THE APPLICABLE CI REPAIR PARTS

CALCULATED (HEADER)

MRRI (CALCULATED BY ADP SYSTEM)

CALCULATED TASK FREQUENCY (CALCULATED)

MB (TAKEN FROM CALCULATIONS)

QTY/TASK	CI	319	PQTYKCI

OPERATING PROGRAM (SELECTED)

OP MB (SELECTED MUST MATCH AOR MB)

MRRII (CALCULATED BY ADP SYSTEM)

MRRI (CALCULATED BY ADP SYSTEM)

MRRI/II RATIO (SELECTED)

---

3 IND

LIST THE FIRST J TASK AND ITS TABLE AND CALCULATED TASK FREQUENCY. THE TASK FREQUENCY IS FOR THE SPECIFIC TASK. THE CALC TASK FREQUENCY IS BASED ON THE AFFECTED LCNS FROM THE 5 IND.

LCN	BH	199	TLSACNBH
(LCN IS BASED ON CORRECTIVE TASK CODE)	BH	427	TASKCDBH
ALC	BH	019	TALCNCBH
TASK CODE	BH	427	TTASKCBH
TABLE CA TASK FREQ	CA	430	TSKFRQCA
MB	CA	238	AORMSBCA
CALCULATED TASK FREQ (CALCULATED)			
MB (TAKEN FROM CALCULATIONS)			
FAILURE MODE RATIO	BF	136	FMRATOBF
FAILURE RATE	BD	140	FAILRTBD
MB	BD	238	FARAMBBD
RAM I C	BD	347	RAMINDBD
MTBM INDUCED	BD	231	INMTBMBD
MB	BD	281	IMTBMMBD
MTBM NO DEFECT	BD	233	NOMTBMBD
MB	BD	238	NMTBMMBD
CONV FACT	BA	059	CONVFABA
AOR	AG	023	ANOPREAG
MB	AG	238	MEASBSAG

---

4 IND
LIST ALL QUALIFYING CI'S PROVISIONING PARTS THAT ARE USED FOR THIS TASK CODE
USE THE TASK LCN AND ALC TO IDENTIFY THE PARTS USED

LCN	CI	199	TSKLCNCI
ALC	CI	019	TSKALCCI
PRINT THE PROVISIONING PARTS			
LCN	CI	199	PROLCNCI
ALC	CI	019	PROALCCI
REFERENCE NUMBER	CI	337	PROREFCI
CAGE	CI	046	PROCAGCI
QTY/TASK	CI	319	PQTYTKCI
UM	CI	491	PQTKUMCI

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5 IND
LIST ALL AFFECTED LCN'S & FMI'S FOR THIS "J" TASK

LCN	BA/BH	199	LSACONXB
ALC	BA/BH	019	ALTLCNXB
FMI	BF	134	FAMOINBF
FAILURE MODE RATIO	BF	136	FMRATOBF
FAILURE RATE	BD	140	FAILRTBD
MB	BD	238	FARAMBBD
RAM I C	BD	347	RAMINDBD
MTBM INDUCED	BD	231	INMTBMBD
MB	BD	238	IMTBMMBD
MTBM NO DEFECT	BD	233	NOMTBMBD
MB	BD	238	NMTBMMBD
CONV FACT	BA	059	CONVFABA

REPEAT THIS PROCESS FOR THE NEXT "J" TASK FOR THIS LCN

LSA-027

30.25 LSA-030 INDENTURED PARTS LIST REPORT SPECIFICATION

FIRST TIER SELECTION. The Indentured Parts List selection must specify only one of the following selection formats.

Draft RPSTL (MIL-STD-335(TM) Format)	Opt 1
Proof RPSTL (MIL-STD-335(TM) Format)	Opt 2
Draft RPSTL (MIL-M-49502(TM) Format)	Opt 1
Proof RPSTL (MIL-M-49502(TM) Format)	Opt 2
IPB (MIL-M-38807A (USAF) Format)	Opt 3
Stockage List Type Four ((MC) Format)	Opt 4

OPTIONS 1/2. REPAIR PARTS AND SPECIAL TOOLS LIST, PROOF/DRAFT.

30.25.1 SELECTION. The proof option is selected by mandatory TM Code (TMCODEXI) from table HK. The draft option is selected by mandatory EIAC, Start LCN and TM Code. The draft has optional Stop LCN, ALC, LCN Type and UOC selections. Additional optional selections for both the proof and draft are by O/M Level determined by the third (remove) position of the Source Maintenance and Recoverability Code (SMRCODHG) and Start and Stop range(s) of FGCs. (NOTE: The only differences between the proof and draft RPSTL format involves display of the file control keys following the standard columns 1 through 6 (or 7).) Both the proof and draft RPSTL have the option of depicting the formats prescribed by either MIL-STD-335(TM), or MIL-M-49502(TM)

a. The four cross reference indexes in part IV of the RPSTL, are each separately selectable.

b. Functional Group Code (FGC) Headers are also optional inputs for the RPSTL report. For the 30 report you have header information which is a throughput. For each Functional Group header there will be a Start and Stop TM-FGC header. Each Functional Group Header can consist of up to 9 lines of header information. Each line of header information is 36 positions long. There is not a minimum or a maximum number of FGC headers/Start and Stop TM-FGC.

c. There is an additional selection option, Start Stop TM-FGC. There is a maximum number of 4 start and stops TM-FGCs. The Start Stop TM-FGC will allow the report requester to select specific TM FGCs to be output. They should be processed like start and stop LCN's (Start TM-FGC $\leq$ TM-FGC < Stop TM-FGC, except when start and stop TM-FGC's are equal then select that TM-FGC only.

30.25.2 PROCESSING. In order to produce these options of an LSA-030 summary, at least one entry matching the selected TM Code must be contained in table HK.

a. FGC Headers are placed in the description column preceding the first row of data matching on FGC with the FGC header key.

b. The PART NUMBER column contains 16-positions of the Reference Number. If the Reference Number exceeds 16 positions, the remainder is printed immediately beneath the first 16 on the next line.

c. Rows are sorted by section and FGC sequence. For the description column, the item name (ITNAMEHA) will first appear, then two spaces followed

by the provisioning nomenclature (PROVNOHL), if applicable. If the Hardness Critical Item (Table HG) is "Y", then the symbol "(HCI) is printed one space following the Item Name and two spaces before the PROVNOHL. The PROVNOHL is wrapped in the 36-positions allocated for the description with "breaks" occurring only at spaces. Trailing periods are placed following the last position of the item name/provisioning nomenclature to the end the description column. If the row also has a TM Indenture Code (TMINDCHK) entry, then leading periods are placed prior to the item name of the row, equalling the number in the TMINDCHK field.

d. Following the PROVNOHL, on a separate line applicable UOCs of the row are entered. preceded by "UOC: " If the row has full effectivity, no UOCs are displayed. Full effectivity is determined by: A Row in HG has full effectivity if it is represented in HO for Every XC entry which contain its PCCN.

e. Also extracted are any entries in table HH for qualified rows matching on PLISNs which have NHA PLISN and NHA PLISN Indicator's of asterisk. Where the row of information is sorted in the report, the phrase "PART OF KIT P/N" followed by the Reference Number of the Kit record will be displayed. The Kit Reference Number is determined by a match of the HH NHA PLISN to an HG PLISN under the same PCCN as the kit component. One row of data may be used for multiple "kits" by multiple HH row entries. Beneath each kit, the rows that make up the kit are displayed using by item name, and in parenthesis the QTYASYHG, or QTYFIGHK, FIGNUMHK, a dash then ITEMNOHK.

f. Under the QTY column, the QTYFIGHK is displayed, unless blank. If QTYFIGHK is blank, then QTYASYHG is used.

g. Under the NSN column (MIL-STD-335 Format), a "Y" is displayed if both FSCNSNHA and NIINSNHA are not blank and NIINSNHA does not contain alpha characters for the row of information. Otherwise "N" is displayed.

h. Under the PLCC column, only entries in DDPLCCHA or "D"s are shown.

i. After all rows of data are displayed following a FGC Header, and before the next FGC header the phrase "END OF FIGURE" (MIL-STD-335(TM) Format only) is printed. Rows of information are printed with no line skips between rows. At the end of a page, a page number is assigned using the FIGNUMHK from the first record following the FGC header, followed by dash then "1", multiple pages of the same figure follow the same pattern, e.g., 3-1, 3-2, 3-3, etc. A page break will occur with each new FGC Header set under a different FGC. If no FGC Header inputs are provided, then the sorted rows will "page break" each time the FIGNUMHK changes.

j. The section III description column is similar to the Section II description with the addition of the interpreted Basis of Issue(BOI). Each BOI is displayed by "BOI:QTYBOIHM, then either LVLBOIHM or RATIOBHM. LVLBOI is interpreted (See DED 030). RATIOBHM is preceded by "PER" and followed by "END ITEMS". The BOI is inserted between PRONOMHL, and UOCSEIXCs lines.

k. Section IV cross reference indexes are produced as optional outputs as specified by the requester. The Reference Designations for the Reference Designation Index will either only include those items having a nonidentifying

migrating key of the appropriate Figure Number, Item Number, and TM Code; or if these keys are not present, it will include all related Figure Numbers, Item Numbers, and TM Codes from the HK table for the Reference Designator key set. Overflows of Reference Numbers or Reference Designations exceeding 16 or 32 positions, respectively are printed on the next line immediately below the first portion of the element.

l. Suppression rules for section IV part number indexes and figure and item number indexes. Part number index suppresses any additional row of information if the CAGE, Part Number, Stock Number, Figure Number and Item Numbers are the same. Part number index also suppress the CAGE and Part Number if the figure number and item number are different for the same CAGE, Part Number, and Stock Number. Figure and Item Number Index suppresses any additional row of information if the CAGE, Part Number, Stock Number, Figure Number, and Item Number are the same.

30.25.3 REPORT FORMAT. See Figure 3.22

30.25.4 REPORT SEQUENCE.

a. Sections II and III of the report are primarily sequenced by Section. Section is determined by the Provisioning List Category Code (PLCC). Items coded with a PLCC entry in DDPLCCHA are placed in section III. All other items are placed in section II. Within section, items are sequenced in ascending FGC, followed by item, then PLISN.

b. Part Number Index is sorted in ascending Reference Number, then CAGE.

c. National Stock Number index is sorted in ascending NIIN (NIINSNHA), by column one, then by column two on a given page.

d. Reference Designation Index is sorted in ascending Reference Designation.

e. Figure and Item Number Index is sorted in ascending Figure, then Item Numbers, then Reference Number.

30.2.5.5 DATA SOURCE. See attached listing.

OPTION 3. ILLUSTRATED PARTS BREAKDOWN.

30.2.5.1 SELECTION. This LSA-030 option is selected by a mandatory TM Code.

30.25.2 PROCESSING. Extracted for the IPB are any entries in table HH for qualified rows matching on PLISNs which have NHA PLISN and NHA PLISN Indicator's of asterisk. Where the row of information is sorted in the report, the phrase "PART OF KIT P/N" followed by the Reference Number of the Kit record will be displayed. The Kit Reference Number is determined by a match of the HH NHA PLISN to an HG PLISN under the same PCCN as the kit component. One row of data may be used for multiple "kits" by multiple HH row entries. Beneath each kit, the rows that make up the kit are displayed using by item name, and in parenthesis the QTYASYHG, or QTYFIGHK, FIGNUMHK, a dash then ITEMNOHK.

a. A separate column for applicable UOCs of the row are entered. If the

row has full effectivity, no UOCs are displayed. Full effectivity is determined by table HO/XC applicability of the as the row of information to all XC UOC matching on the row PCCN.

b. If the Hardness Critical Item (Table HG) is "Y", then the symbol "(HCI) is printed prior to the Item Name.

c. The Provisioning Nomenclature is displayed with two spaces between it and the last completed position of the Item Name. Provisioning Nomenclature will break only on spaces between lines. On the second and subsequent lines of Nomenclature automatically assigned two leading periods (e.g., ..,) will precede the nomenclature continuation. Trailer points shall be printed to "fill" the description column blank spaces from the last nomenclature character to the end of the description field. On subsequent lines for the same item, the trailer points are not used. Subsequent column data is displayed in line with the first description row.

d. An item will contain leading periods equal to the entry against the item's TM Indenture Code (1-5). The Numbers 12345 are displayed in the first five positions of the Description column.

30.25.3 REPORT FORMAT. See Figure 3.22

30.2.5.4 REPORT SEQUENCE. Section II is sequenced in ascending Figure and Item Number; III is sequenced by ascending Reference Number; and IV in ascending Reference Designation.

30.2.5.5 DATA SOURCE. See attached listing.

OPTION 4. STOCKAGE LIST TYPE FOUR.

30.25.1 SELECTION. This LSA-030 option is selected by mandatory START LCN. Optional selection entries are ALC, STOP LCN, and UOC. A selection throughput is a 20-position SL number.

30.25.2 PROCESSING.

a. Item identification (column 6) consists of the Item Name (ITNAMEHA)

b. Reference Designation (column 4) is truncated after 8 positions. Only a Reference Designation with an RDC of "F" is extracted for the LSA-030. If multiple "F" Reference Designations are documented in the HJ table for an item, these are used to make up multiple rows of the summary.

c. Column 8, QUANTITY APPL is QPA; PER EQUIP is the QPEI. If REF or REFX is entered in the QPEI, then this is suppressed on the output report.

d. Print all matched UOC's (XC/HO) if no UOC is Selected. If there are extra UOC's they should be printed under the model header, under the appropriate item number line

e. The TM Codes and Fig Numbers are pulled from HJ, if there isn't a match in HJ, then pull all HK table TM Codes and Fig Numbers against the HJ LCN Keys and HJ Ref No keys matched in the HK table.

f. Terms used on the LSA-030 summary:

(1) Reference Designation (Figure Key) (REF DESIG FIG-KEY). Reference Designation with an associated Reference Designation Code of "F" (first eight-positions only).

(2) Special Stockage Indicator (SSI) Assigned by the requiring authority, the SSI is left blank by the preparing activity.

(3) Replacement Factor (REPL FACTOR). Maintenance Replacement Rate I , fourth through seventh positions only.

30.25.3 REPORT FORMAT. See Figure 3.22

30.25.4. REPORT SEQUENCE. The report sorts on ascending Reference Designation and LCN sequence. A Reference Designation ending in an alpha character is sorted in sequence of the closest numeric, e.g.,012-0005, 012-005A, 012-0006.

30.25.5 DATA SOURCE. The source of data appearing on the LSA-030 summary is depicted below by data table and element codes.

OPTION 1-3, RPSTL DRAFT/PROOF AND IPB.

Report header	Table Code	DED	Element Code
EIAC	HG	096	EIACODXA
ITEM NAME	HA	182	ITNAMEHA
START LCN	HG	199	LSACONXB
ALC	HG	019	ALTLCNXB
LCN TYPE	HG	203	LCNTYPXB
UOC	HO/XC	501	UOCSEIXC
STOP LCN	HG	199	LSACONXB
TM CODE	HK	437	TMCODEXI
TM DESIGNATION	XI	440	TMNUMBXI
OPERATIONS/MAINTENANCE LEVELS:	HG	389	SMRCODHG
START/STOP FGC RANGES	HK	438	TMFGCDHK
CROSS REFERENCE INDEXES (SELECTED)			
RPSTL FUNCTIONAL GROUP CODE HEADERS (THROUGHPUT)			
SECTION II			
ITEM NO	HK	184	ITEMNOHK
SMR	HG	389	SMRCODHG
CAGE	HK	046	CAGECDXH
PART NUMBER	HK	337	REFNUMHA
DESCRIPTION AND USABLE ON CODE (UOC)	HA	182	ITNAMEHA
	HL	310	PROVNOHL
	HO/XC	501	UOCSEIXC
	HK	439	TMINDCHK
(KIT COMPONENTS)	HH	258	NHAPLIHH
	HH	259	NHAINDHH
QTY	HG	316	QTYASYHG
	HK	318	QTYFIGHK
FIG NO (draft MIL-STD-335 only)	HK	144	FIGNUMHK

FGC (draft MIL-STD-335 only)	HK	438	TMFGCDHK
PLCC (draft MIL-STD-335 only)	HA	308	DDPLCCHA
NSN ("Y" in 335, Comp NSN in MIL-M)	HA	253	FSCNSNHA
	HA	253	NIINSNHA
PCCN	XC	307	PCCNUMXC
PLISN	HG	309	PLISNOHG
SECTION III			
DESCRIPTION AND USABLE ON CODE			
(BASIS OF ISSUE) RPSTL only.	HM	030	BOICTRHM
	HM	030	QTYBOIHM
	HM	030	RATIOBHM
	HM	030	LVLBOIHM
SECTION IV			
STOCK NUMBER	HA	253	FSCNSNHA
	HA	253	NIINSNHA
REFERENCE DESIGNATION	HJ	335	REFDESHJ
FIGURE NO	HK	144	FIGNUMHK

OPTION 4. STOCKAGE LIST TYPE FOUR

Report header	Table Code	DED	Element Code
EIAC	HG	096	EIACODXA
ITEM NAME	HA	182	ITNAMEHA
START LCN	HG	199	LSACONXB
ALC	HG	019	ALTLCNXB
LCN TYPE	HG	203	LCNTYPXB
UOC	HO/XC	501	UOCSEIXC
STOP LCN	HG	199	LSACONXB
STOCK LIST NUMBER (SELECTED)			
PART I			
ITEM NO (GENERATED)			
MODEL	HO/XC	501	UOCSEIXC
NSN	HA	253	FSCNSNHA
	HA	253	NIINSNHA
REF DESIG FIG-KEY	HJ	335	REFDESHJ
[RDC]	HJ	336	RDCODEHJ
IND	HG	162	INDCODHG
ITEM IDENTIFICATION	HA	182	ITNAMEHA
UM	HA	491	UNITMSHA
QUANTITY PER APPL	HG	316	QTYASYHG
	XC	316	QTYASYXC
PER EQUIP	HG	317	QTYPEIHG
	XC	317	QTYPEIXC
SMR CODE	HG	389	SMRCODHG
SSI (MANUAL)			
REPL FACTOR	HG	211	MRRONEHG
CAGE	HK	046	CAGECDXH
REFERENCE NUMBER	HK	337	REFNUMHA
TM CODE	HJ/HK	437	TMCODEXI
FIG NO	HJ/HK	144	FIGNUMHK

LSA-030

30.26 LSA-032 DEFENSE LOGISTICS SERVICES CENTER (DLSC) SUBMITTALS PROVISIONING SCREENING REPORT SPECIFICATION

30.26.1 SELECTION. The LSA-032 summary is selected by mandatory START LCN or PCCN, SERV DES, ACTIVITY CODE, DESTINATION CODE, OUT DATA REQ CODE, SGL/MULT OUT CODE, TYPE SCREEN CODE, STAT IND CODE, PRI IND CODE and JULIAN DATE; and optional ALC, STOP LCN, UOC, SOURCE CODE, ARN SEL CODE, DIC SUPPRESS, DSRC SUPPRESS, and DLSC tape.

30.26.2 PROCESSING. This report may be selected by LCN or PCCN, or Both. At least one qualified Reference Number/CAGE combination must exist between the LCN range or be under the PCCN selected in order to produce an LSA-032 summary. When selected by LCN range this report may have items from multiple PCCNs. The TAPE option results in an 80-column file of part II information. The report is processed as follows:

a. Items may be excluded from the report by already having a screening result displayed in the DIC field. This means that if suppression is selected, any item that has a DIC code in the database will not be screened again, and therefore, not output on the report. Items may also be excluded from the report by having a result in DLIS Screening Result Code (DSRC). The ADP system should allow suppression of up to five codes, A, B, C, D, and E. If an item contains one of these codes, i.e. "A", and "A" is selected to be suppressed on the selection card, then any item having an "A" DSRC will not come out on the report.

b. Part of the submitter control number is the PCCN/PLISN. The PLISN used is the lowest EBCDIC valued PLISN for the item within the selected PCCN/LCN range (the Same As PLISN field is blank). If no PCCN/PLISN is recorded for an item, then a Type "1" error is displayed. No rows of data for the item are placed on part II.

c. If Additional Reference Number Select (ARN SEL) is "YES" and if the item has more than 24 additional reference numbers, then error Type "2" is displayed. The first 24 ARNs in ascending reference number sequence are placed on part II of the report.

d. If a specific SOURCE CODE is selected and the SMR is not contained against an item, at its first appearance, then error Type "3" is shown and the item is disqualified from part II. The source code may be selected by its first position only in which case all corresponding second positions would qualify. For example, if you select "P" source code, that would qualify "PA", "PB", "PC","PD","PE","PF", and "PG" source codes.

e. If TYPE SCREEN CODE is "F" or "S", and if ARN SEL is "YES" and if an Additional Reference Number matches the prime Reference Number, then error type "4" is displayed. Only the duplicate ARN is disqualified from part II. In part II of the report, columns 41 and 42 are always left blank for "F" or "S" type screen.

f. If TYPE SCREEN CODE is "P", and if either the reference number category code (RNCC) or reference number variation code (RNVC) is missing for the reference number/CAGE (in HA) or if ARN SEL is "YES" and there are any additional reference number and CAGE (in HB), then error Type "5" is

displayed. If the RNCC/RNVC is an ARN, only the ARN is disqualified from part II. If the RNCC/RNVC is the prime reference number, then the entire item is disqualified from Part II.

Definitions of LSA-032 report selection entries:

a. Document Identifier Code (DIC) - A three-position alphanumeric code which is used for identifying interservice agency or intraservice agency logistic transactions. On part II of this report the DIC will always be "LSR" signifying Reference Number and CAGE screening requests. Items may be excluded from DLSC screening, if an entry showing a screening result, is already contained in the DIC field for the Reference Number and CAGE.

b. Priority Indicator Code (PIC) - A single numeric code used to designate the required priority to be applied to processing transactions. See DOD4l00.38-M.

c. Activity Code (ACT CD) - A two-position alpha code identifying a DOD activity, Federal agency or other authorized Government agency for cataloging, standardization or other management purposes. See DOD 4l00.38-M.

d. Destination Code (DEST CD) - A five-position alphanumeric code used in conjunction with the activity code to register the address data for recipients of the results of provisioning screening. See DOD 4l00.38-M.

e. Output Data Request Code (ODRC) - A numeric series of established sets of data (DID output segments) identified by specific ODRC's and available for extraction from DLSC files for provisioning and preprocurement screening purposes. See DOD 4l00.38-M.

f. Single/Multiple Output Code - A numeric code used by the submitter to indicate whether the results of screening are to be furnished to one or all of the recipients as registered under the applicable activity code and destination code. See DOD 4l00.38-M.

g. Submitter's Control Number (SUB CONT NO) - A seventeen-position computer assigned alphanumeric field peculiar to provisioning and preprocurement screening transactions which is used to control and reference the transactions. The number consists of a four position julian date (YDDD), and a unique sequential 13 position number assigned for each reference number and additional reference number package which is to be screened. This consists of the selection Service Designator Code, PCCN, then PLISN.

h. Statistical Indicator Code. A code designating whether data submitted for screening is requiring for provisioning or other services. See DOD 4100.38-M.

i. DIDS segment code. This is the number of inputs segments that are required by DILS for each record. This should always be a "2" to represent a fixed length record LSR (DIC) submittal.

j. Package Sequence Number (PSN). The PSN is a three-character code used to indicate the quantity, sequence and interrelationship of cards related to a line item as within a package (i.e. applies to the same submitter's control

number). If all line items submitted for screening are individually sequence in the submitters control number field, the PSN will always be "Z01". For reference number screening (DIC of "LSR") a maximum of 25 reference numbers may be submitted under the same SCN. In this instance the first record would have a PSN of "A01", the second "A02", the third "A03", etc, through "A24", and the last (25th) record would be "Z25". The last record in any package submitted under one SCN will always contain a "Z" in the first position of the PSN.

30.26.3 REPORT FORMAT. See Figure 3.23

30.26.4 REPORT SEQUENCE. The Report is sequenced in ascending Submitter Control Number. On the first line is information about the Prime Reference Number and the item's LCN/ALC and SMR of the first appearance. Within this item are listed all additional reference numbers in ascending ARN sequence.

30.26.5 DATA SOURCE. The source of data appearing on the LSA-032 summary is depicted below by data table and element codes.

Report header	Table Code	DED	Element Code
EIAC	HG	096	EIACODXA
ITEM NAME	HA	182	ITNAMEHA
START LCN	HG	199	LSACONXB
ALC	HG	019	ALTLCNXB
LCN TYPE	HG	203	LCNTYPXB
STOP LCN	HG	199	LSACONXB
UOC	HO/XC	501	UOCSEIXC
SERV DES (SELECTED)			
PCCN	HG	307	PCCNUMHG
ACTIVITY CODE (SELECTED)			
DESTINATION CODE (SELECTED)			
OUT DATA REQ CODE (SELECTED)			
SGL/MULT OUT CODE (SELECTED)			
SOURCE CODE	HG	389	SMRCODHG
ARN SEL CODE (SELECTED)			
TYPE SCREEN CODE (SELECTED)			
STAT IND CODE (SELECTED)			
PRI IND CODE (SELECTED)			
JULIAN DATE (SELECTED)			
DIC SUPPRESS	HA	087	DOCIDCHA
DSRC SUPPRESS	HA	073	DLSCRCHA
DLSC TAPE (SELECTED)			
SUBMITTER CONTROL (GENERATED)			
REFERENCE NUMBER/ARN	HG	337	REFNUMHA
	HB	006	ADDREFHB
CAGE	HG	046	CAGECDXH
	HB	046	ADCAGEHB
RNCC	HA	338	REFNCCHA
	HB	338	ADRNCCHB
RNVC	HA	339	REFNVCHA
	HB	339	ADRNVCHB
LCN	HG	199	LSACONXB
ALC	HG	019	ALTLCNXB
SMR	HG	389	SMRCODHG
ERROR CODES(S) (GENERATED)			

LSA-032

30.27 LSA-033 PREVENTIVE MAINTENANCE CHECKS AND SERVICES REPORT SPECIFICATION

30.27.1 SELECTION. The LSA-033 summary is selected by mandatory EIAC, START LCN and LCN TYPE. Optional selection items are ALC (default is all ALC's), STOP LCN (default is all LCNs subordinate to, and including, the start LCN), UOC (default is all UOCs), TM CODE (default is all TM Codes), TM Number (default is all applicable TM Numbers), and SERV DES (default is all Service Designators).

30.27.2 PROCESSING. Within the selected range of LCNs/TM Code Tasks, at least one task code must be present with a PMCS Indicator (PMCSIDCA) of "Y" in order to produce an LSA-033 summary. All PM tasks must have a PMCS Indicator of "Y" and have a "C" or "O" in the 3rd position of the task Code to be printed on this output. If TM Code is selected you should check in the CH table to make sure the task is used in the selected TM.Item Numbers (ITEM NO.) are assigned beginning with 0001 and increase incrementally by 1 as with each new LCN. The LCN Nomenclature is displayed under the column ITEMS TO CHECK/SERVICE

a. Task Interval values are interpreted as follows: A, BEFORE, D, DURING; H, AFTER; C, DAILY; L, WEEKLY; P, MONTHLY; M, QUARTERLY; N, SEMIANNUALLY; Q, YEARLY, Maintenance interval, and asterisk. If the interval is "B" then the B table Maintenance Interval (208) and Measurement Base (238) are displayed under the INTERVAL column. The measurement base is interpreted on the report, e.g., S, ROUNDS. If the report is selected by TM Code, tasks are qualified to the PMCS report by an associated PMCS indicator (Table CA). If the report is selected by LCN range, tasks are further qualified by maintenance level (Task Code third position) of Crew or Organizational). If more then one B FMI/MPC reference the same PMCS Task Code, then the Highest numeric value Maintenance Interval is documented, the MB must be the same, then the MB is interpreted, and an asterisk (*) is placed following the MB. If the MB are different then print the highest Maintenance Interval for each MB. If the task interval is other than those listed above or there is no associated B maintenance interval, then the Interval column is completely filled with asterisks.

b. If there are multiple qualified PMCS task Codes within a LCN an incremental alphabetic character is assigned prior to displaying all applicable subtask narrative. If a PMCS task has a Task Remark, this is displayed under NOT FULLY MISSION CAPABLE IF: column, directly across from the beginning of the subtask narrative. If this information is exceeds 30 positions, it is carried to the next line of the report breaking the narrative at a space.

30.27.3 REPORT FORMAT. See Figure 3.24

30.27.4 REPORT SEQUENCE. The report is sorted in ascending Task Code Interval in the order shown in paragraph 2a above, then by ascending LCN. Each LCN is assigned a numeric item number beginning with "0001" (a new item number is assigned if an LCN appears twice, under two qualified tasks with different intervals). An alphabetic sequence code beginning with "A" is assigned to each Task for the same LCN with the same Task Code Interval. If the report is selected by LCN range and TM Code, a page break is required between output of Operator/ Crew level PMCS tasks and Organizational level PMCS tasks.

5. DATA SOURCE. The source of data appearing on the LSA-033 summary is depicted below by data table and element codes.

Report header	Table Code	DED	Element Code
EIAC	XB	096	EIACODXA
LCN NOMENCLATURE	XB	201	LCNAMEXB
START LCN	XB	199	LSACONXB
ALC	XB	019	ALTLCNXB
TYPE	XB	203	LCNTYPXB
STOP LCN	XB	199	LSACONXB
UOC	XC	501	UOCSEIXC
UOC is matched VIA the XF Table			
SERV DES	CA	427	TASKCDCA
TM CODE	CH	437	TMCODEXI
TM NUMBER	XI	440	TMNUMBXI
[PMCS INDICATOR]	CA	296	PMCSIDCA
ITEM NO (GENERATED)	XB	199	LSACONXB
	XB	019	ALTLCNXB
INTERVAL	CA	427	TASKCDCA
	BH	208	MAININBH
	BH	238	MAINMBBH
PROCEDURE	CC	372	SUBNARCC
ITEMS TO CHECK/SERVICE	XB	201	LCNAMEXB
NOT FULLY MISSION CAPABLE IF:	CE	432	TSKREMCE
	CF	349	TSKRRCCE

LSA-033

30.28 LSA-036 PROVISIONING REQUIREMENTS REPORT SPECIFICATION

30.28.1 SELECTION. The LSA-036 summary is selected by mandatory PCCN, TYPE LIST (PTD SELECTION CODE, DED 313) OUTPUT MODE and UOC(S). Also required for the LSA-036 request are the PIIN/SPIIN, NOMENCLATURE OF MODEL OR TYPE NUMBER, CONTROL DATA, PRIME CAGE, SUBMITTER CONTROL NO, and SUBMITTAL DATE. Optional selections are MULTI-CONFIG UOCS ASSIGNED, FULL EFFECTIVITY UOC SUPPRESS, START AND STOP PLISN ranges, PROVISIONING BASELINED, QPEI CALCULATED, OVERHAUL PLISNS, and Part III.

30.28.2 PROCESSING. All records matching the selected PCCN are extracted for LSA-036 processing. If the records are disqualified because of no match on either Type of PTD List or UOCs selected, these are counted for the Header page summary and are displayed in the LSA-036, Part II.

a. The following "header" data required to identify the specified list(s) are not a part of the LSAR but are contained in the LSA-036 summary.

(1) Procurement Instrument Identification (PII). A nineteen-position alphanumeric entry used to identify a specific contractual document. The PII includes the procurement instrument identification number (PIIN), (13 positions) and the supplementary procurement instruction identification number (SPIIN) (6 positions).

(2) Nomenclature of model or type number. A twenty-one-position alphanumeric entry used to specify the name, model, or type of equipment being provisioned.

(3) Control Data. A ten-position alphanumeric entry used for control information as specified by the requiring authority. This information may consist of such items as identification of provisioning data in MIL-STD-1388-2 format or a Weapons System Code.

(4) Prime Contractor's Commercial and Government Entity (CAGE) Code. A five-position alphanumeric entry which identifies the prime contractor for the equipment being provisioned.

(5) Submission Control Code. A five-position numeric entry used to control the submission of provisioning data. The first submission will be 00001 and each subsequent submission is to be numbered sequentially, one greater than the prior submission.

(6) Date list submitted. A six-position, numeric entry used to identify the date of submission. The first two positions will identify the year; the next two will identify the month, and the last two will identify the day.

b. The report will display the following provisioning report control data:

(1) Card Sequence Number (CSN). A two-position numeric code which is used to sequence multiple data input cards for a specific card format indicator. The initial card entry is coded 01. Subsequent cards are coded 02-99.

(2) Card Format Indicator (CFI). A one-position alphabetic code: A-H, J-M used to identify a card format and content.

(3) Reference Designation Overflow Code (RDOC). A one-position alphabetic code: A and B used to link a long Reference Designation which exceeds 32 characters. Code "A" is entered against the first 32 characters, and code "B" is entered against the last 32 characters.

c. Processing of Usable On Codes.

(1) Basic UOC display capability. The UOCs (DED 501) are selected for report generation. When an PLISN item is qualified by basic PCCN selection, it must be further qualified by matching through table HO to at least one selected UOC. The UOCs are then displayed on the 036 D cards.

(2) Multiple Configuration Usable On Code. A three-position alphanumeric code that indicates the configuration(s) of a system/equipment on which the item under analysis is used based on the UOC (DED 501) assignments. For example in table XC:

Model	UOC (DED 501)
1A	A
1B	B
1C	C

Then the following multiple configuration are then assigned by the 036 system:

Multi Models	UOC
Both 1A and 1B	D
1B and 1C	E
1A and 1C	F
1A, 1B, and 1C	blank

From Table HO, PLISN/LCN X shows a usage on both models 1A and 1C. Then the UOC contained on the LSA-036 is "F". The generated combinations of model UOCs is shown on the header page of the LSA-036.

(3) Full Effectivity UOC Suppression. If the user specifies that when the selected UOCs match a qualified record on every UOC, then no UOC are displayed on the D card. These are matched from table HO to the selected UOCs. (For all UOC combinations of a PCCN in XC).

(4) Serial Number UOC (DED 375) display. If the user documents Serial Numbers for a model and the associated Serial Number UOCs (Table XD), and also documents each items relationship to the Serial Number UOCs via table HN, then these UOCs are displayed on the "D" card instead of the XC/HO UOCs. On the LSA-036 header page, a display is made of the following:

ITEM DESIGNATOR (XC)	SERIAL NUMBER FROM (XD) TO	UOC (XD)

C18	SN001	SN015	A
	SN017	SN017	B
	SN062	SN071	C
C18A1	SN016	SN016	E
	SN018	SN061	F

d. Quantity per End Item (QPEI) (DED 317). The QPEI (three options) may be computed during the LSA-036 report preparation using the formulas provided in the data definitions. These are displayed on the report and update both the data tables HG/XC and the baselined provisioning file.

e. Overhaul PLISN (DED 258) and Overhaul Replacement Rate (ORR) DED 281) Assignment. The overhaul PLISNs may be assigned during the LSA-036 report preparation based on the item having a P- source code, an ORR entry, and at least one of its higher assembly PLISN having an SMR Code of P--D-. Only those higher assembly PLISNs with and SMR code 0f P--D- will be assigned overhaul PLISNs. The ORR is an estimate of the percent of time that a support item will be replaced at the NHA during Overhaul. It is manually entered in the HH table against its NHA. This base ORR of the item is multiplied by the QPA for each succeeding indenture level, beyond the NHA, using the following approach for assignment:

PLISN	IC	SMR	QPA	NHA PLISN	NHA-IND	ORR
CFFF	F	PADZZ	0002	CEAA	N	005
CEAA	E	PAODD	0002	CDEE	N	002
CDEE	D	PAFDD	0003	CCDD	N	
CCDD	C	PAOHH	0001	CB12	N	003
CB12	B	PAFDD	0002	AAAA	E	006
AAAA	A	PAODD	0001			

For PLISN CFFF, the Overhaul PLISNs and associated ORRs are:

OVERHAUL PLISN	ORR
CEAA	005
CDEE	015
CB12	030
AAAA	030

NOTE: PLISN CEAA is the items immediate NHA PLISN and therefore no calculation is needed; and PLISN CCDD is disqualified because it is SMR Coded PAOHH.

f. Same as PLISN (DED 364). The Same as PLISN may be assigned during the LSA-036 summary preparation. These are displayed on the report and update data table HG and the baselined provisioning file.

g. LSA-036 Update and Design Change Notices. There are five basic types of LSA-036 updates which can result when LSAR data is added, changed or deleted affecting PL's previously delivered. These transactions can be automatically generated using a validated LSAR ADP system by establishing

baseline records upon initial submission of the LSA-036. These transactions are based upon a comparison of the current LSAR provisioning oriented data tables and provisioning data baselined by a previous LSA-036 submittal.

(1) Standard Data Update. For each LSA-036 card affected by data which has been added or changed since the previous PL delivery or LSA-036 update, mandatory data, i.e., PCCN, PLISN, CSN, and CFI, an "M" Type of Change Code (TOCC) and the added/changed data only are entered. If data has been deleted, a "G" is entered in the TOCC and in the left most position of each field deleted on the appropriate LSA-036 card. (NOTE: MRR MOD must have all positions filled with a "G" to be deleted). Data deletions and changes/ additions occurring on the same LSA-036 card will require both a change and deletion card for the appropriate data.

(a) If all data on an LSA-036 CFI is deleted, mandatory data and a "D" TOCC are entered and the data fields are left blank.

(b) When an entire PLISN record is deleted, PCCN, PLISN and "D" TOCC are entered and the CAGE and Reference Number are displayed on the "01A" card. In addition, if any Change Authority related information is changed, CFIs "F" "G" and "H" update transactions are also processed.

(2) Quantity Data Update. When a quantity field is updated, mandatory data, a "Q" TOCC and the updated quantity data field(s) are entered. This will only apply to the following data: Quantity Per Assembly, Quantity Per End Item, Total Quantity Recommended, Allowance Item Code Quantity, Minimum Replacement Unit, Recommended Initial System Stock Buy, Recommended Minimum System Stock Level, Recommended Tender Load List Quantity, Quantity Shipped, Quantity Procured and Prorated Quantity. When additional data displayed on the same LSA-036 card also changes during the update, only one change card is entered with TOCC, "Q". When quantity data is deleted, a change card is entered with a zero filled quantity field and TOCC "Q".

(3) Key Data Update. Certain provisioning data are considered key and associated data elements. These are listed below. Changes to key data requires the submission of both a delete and change card for the appropriate key data. The deletion card should contain a "G" TOCC and the original key data. The change card should contain an "M" TOCC with the new key data and the applicable associated data. Deletion of key data will result in deletion of the corresponding associated data.

	KEY DATA	ASSOCIATED DATA
(a)	CAGE and Additional Reference Number	RNCC and RNVC
(b)	NHA PLISN	ORR, NHA IND.
(d)	Usable on Code	None
(d)	Reference Designation	RDOC RDC
(e)	Provisioning List Category Code	None

(f)	Change Authority Number	Serial Number Effectivity Prorated ELIN Prorated Qty IC, Replaced or Superseding PLISN, R/S IND, DCN UOC TIC Quantity Shipped Quantity Procured
(g)	Serial Number Effectivity	None
(h)	DCN UOC	None
(i)	TM Code	Figure Number Item Number TM Functional Group Code
(j)	TM Code, Figure Number Item Number TM FGC	Basis of Issue, TM Change Number, TM Ind Cd Qty Per Fig, Provisioning Nomenclature
(k)	BOI-CTRL	BOI-QTY-AUTH BOI-EI, BOI-LVL

(4) Associated Data Update. Changes to associated data requires the submission of a change card consisting of an "M" TOCC with the changed data and entry of the applicable key data. Deletion of associated data requires the submission of a deletion card with a "G" TOCC, a "G" in the left-most position of the associated data field and entry of the key data.

(5) Design Change Notices (DCN). DCN information is not distinguished from other updated data for a particular LSA-036 update using a validated LSAR ADP system. DCN's can be processed as a separate and distinguishable report by specifying that DCN affected data must be processed as an exclusive update, i.e., by performing an LSA-036 update, entering the DCN information into the LSAR , and by again running an LSA-036 update. An option to obtain an LSA-036 report for updated data pertaining to specific Design Change Authority Numbers is provided on the LSA-036 options. DCN information updates are similar to other update transactions with the following exception. When a Change Authority Number and Serial Number Effectivity are entered, an "L" TOCC is entered for the replaced item. If a quantity change occurs on a limited effectivity item, an "L" TOCC is entered in lieu of a "Q".

h. Part II, Standard Edit List. This section is automatically produced when an LSA-036 is requested. The standard section lists those PLISNs matching the PCCN selected which were disqualified or would degrade the provisioning list. This list must be reviewed by the user to ascertain what corrections, if any, are needed to update the parts data tables for subsequent update(s) to the provisioning list.

i. Two optional part III listings are also available. Option 1 provides selectable provisioning data edits for Army customer use. Option 2 contains Air Force L card data formats to merge with the basic LSA-036 A-K cards.

j. PLISN range selection. The user may select START and STOP PLISN ranges for inclusion on the LSA-036. Both the Start and Stop PLISN and all qualified PLISNs between are included on the report. All other PLISNs are excluded.

k. Output Options. Output options are combinations of report, report with headers and/or output file of 80 card column PLISN records.

30.28.3 REPORT FORMAT. See Figure 3.25

30.28.4 REPORT SEQUENCE. The first record on the LSA-036 summary is the report header. Following this, the report is sequenced in ascending PLISN. Within PLISN records are sequenced in ascending CFI. Within CFI records are sequenced in ascending TOCC in the following order: D or G before M, Q, or L. Within TOCC items are sorted in ascending CSN.

30.28.5 DATA SOURCE. The source of data appearing on the LSA-036 summary is depicted below by data table and element codes.

Report header	Table Code	DED	Element Code	CARD/BLOCK
PCCN	XC	307	PCCNUMXC	ALL/1
UOC	HO/XC	501	UOCSEIXC	
PTD LISTS SELECTED				
PROVISIONING PARTS LIST	HG	313	PPLPTDHG	
SHORT FORM PROVISIONING PARTS LIST	HG	313	SFPPTDHG	
LONG LEAD TIME ITEMS LIST	HG	313	LLIPTDHG	
REPAIRABLE ITEMS LIST	HG	313	RILPTDHG	
INTERIM SUPPORT ITEMS LIST	HG	313	ISLPTDHG	
TOOL AND TEST EQUIPMENT LIST	HG	313	TTLPTDHG	
COMMON AND BULK ITEM LIST	HG	313	CBLPTDHG	
POST CONFERENCE LIST	HG	313	PCLPTDHG	
SYSTEM CONFIGURATION PPL	HG	313	SCPPTDHG	
AS REQUIRED (A)	HG	313	ARAPTDHG	
AS REQUIRED (B)	HG	313	ARBPTDHG	
PLISN	XC	309	PLISNOXC	ALL/2
	HG	309	PLISNOHG	
TOCC	XC	481	TOCCODXC	ALL/3
	HG	481	TOCCODHG	
IND CD	HG	162	INDCODHG	A/4
CAGE	HA	046	CAGECDXH	A/5
	HB	046	ADCAGEHB	
REFERENCE NUMBER	HA	337	REFNUMHA	A/6
ADDITIONAL REFERENCE NUMBERS	HB	006	ADDREFHB	
RNCC	HA	338	REFNCCHA	A/7
	HB	338	ADRNCCHB	
RNVC	HA	339	REFNVCHA	A/8
	HB	339	ADRNVCHB	

DAC	HA	086	DOCAVCHA	A/9
PPSL	HA	302	PPSLSTHA	A/10
EC	HG	100	ESSCODHG	A/11
ITEM NAME	HA	182	ITNAMEHA	A/12
SL	HA	377	SHLIFEHA	A/13
SLAC	HA	378	SLACTNHA	A/14
CSN (GENERATED)				
CFI (GENERATED)				
NSN AND RELATED DATA				
PRE	HA	253	COGNSNHA	B/15
	HA	253	MATNSNHA	
FSC	HA	253	FSCNSNHA	
NIIN	HA	253	NIINSNHA	
SUFF	HA	253	SMMNSNHA	
	HA	253	ACTNSNHA	
UM	HA	491	UNITMSHA	B/16
UM PRICE	HE	492	UMPRICHE	B/17
[PROVISIONING UM PRICE]	HE	314	PROUMPHE	
UI	HA	488	UNITISHA	B/18
UI PRICE	HD	490	UIPRICHD	
[PROVISIONING UI PRICE]	HD	314	PROUIPHD	B/19
UI CONV	HA	489	UICONVHA	B/20
QUP	HF	321	QTYUPKHF	B/21
[DEGREE OF PROTECTION (C, B, A)]	HF	074	DEGPROHF	
SMR	HG	389	SMRCODHG	B/22
DMIL	HA	076	DEMILIHA	B/23
PLT	HA	299	PRDLDTHA	B/24
HCI	HG	151	HARDCIHG	B/25
PSPC	HA	291	PHYSECHA	B/26
PMIC	HA	293	PMICODHA	B/27
ADP EC	HA	027	ADPEQPHA	B/28
NHA PLISN	HH	258	NHAPLIHH	C/29
NHA IND	HH	259	NHAINDHH	C/30
ORR	HH	281	OVHREPHH	C/31
QPA	HG	316	QTYASYHG	C/32
QPEI	HG	317	QTYPEIHG	C/33
MRR-I	HG	211	MRRONEHG	C/34
MRR-II	HG	212	MRRTWOHG	C/35
MRR MOD	HG	213	MRRMODHG	C/36
TOTAL REC QTY	HG	453	TOTQTYHG	C/37
SAME AS PLISN	HG	364	SAPLISHG	C/38
PRIOR PLISN	HG	297	PIPLISHG	C/39
MAOT	HG	221	MAOTIMHG	C/40
MAC	HG	206	MAIACTHG	C/41
NRTS	HG	261	NORETSHG	C/42
UOC	HO/XC	501	UOCSEIXC	D/43
	HN/XD	375	SNUUOCXD	
REFERENCE DESIGNATION	HJ	335	REFDESHJ	D/44
RDOC (GENERATED)				D/45
RDC	HJ	336	RDCODEHJ	D/46

SMCC	HA	395	SPMACCHA	D/47
PLCC	HA	308	AAPLCCHA	D/48
	HA	308	BBPLCCHA	
	HA	308	CCPLCCHA	
	HA	308	DDPLCCHA	
	HA	308	EEPLCCHA	
	HA	308	FFPLCCHA	
	HA	308	GGPLCCHA	
	HA	308	HHPLCCHA	
	HA	308	JJPLCCHA	
	HA	308	KKPLCCHA	
	HA	308	LLPLCCHA	
	HA	308	MMPLCCHA	
SMIC	HA	392	SMAINCHA	D/49
AIC	HG	017	ALLOWCHG	D/50
AIC QTY	HG	018	ALIQTYHG	D/51
MRU	HG	245	MINREUHG	D/52
RMSSL	HG	329	RMSSLIHG	D/53
RISS BUY	HG	328	RISSBUHG	D/54
RTLL QTY	HG	331	RTLLQTHG	D/55
RSR	HG	351	REPSURHG	D/56
MAINT TASK DISTRIB				
O	HG	214	OMTDOOHG	E/57
F	HG	214	FMTDFFHG	
H	HG	214	HMTDHHHG	
SRA	HG	214	LMTDLLHG	
D	HG	214	DMTDDDHG	
CB	HG	214	CBDMTDHG	
CA	HG	214	CADMTDHG	
REPAIR CYCLE TIME--CON				
O	HG	350	ORCTOOHG	E/58
F	HG	350	FRCTFFHG	
H	HG	350	HRCTHHHG	
SRA	HG	350	LRCTLLHG	
D	HG	350	DRCTDDHG	
TAT	HG	350	CONRCTHG	
REPLACEMENT TASK DIST				
O	HG	355	ORTDOOHG	E/59
F	HG	355	FRTDFFHG	
H	HG	355	HRTDHHHG	
SRA	HG	355	LRTDLLHG	
D	HG	355	DRTDDDHG	
DES REWORK PT				
ONE	HG	081	DRPONEHG	E/60
TWO	HG	081	DRPTWOHG	
CTIC	HA	058	CTICODHA	E/61
AMC	HA	003	ACQMETHA	E/62
AMSC	HA	004	AMSUFCHA	E/63
IMC	HA	181	ITMMGCHA	E/64
RIP	HG	348	REMIPIHG	E/65
CHANGE AUTHORITY NUMBER	HP	043	CANUMBHP	F&G/66
IC	HP	172	INTCHCHP	F/67

SERIAL NUMBER EFFECTIVITY				
FROM	HQ	374	FMSRNOHQ	F/68
TO	HQ	374	TOSRNOHQ	
TIC	HP	452	TOTICHHP	F/69
REP/SUP PLISN	HP	353	RSPLISHP	F/70
R/S IND	HP	354	RSPINDHP	F/71
QUANTITY SHIPPED	HP	323	QTYSHPHP	F/72
QUANTITY PROCURED	HP	322	QTYPROHP	F/73
DCN-UOC	HR/HO/XC	501	UOCSEIXC	F/74
PRORATED ELIN	HP	305	PROELIHP	G/75
PRORATED QUANTITY	HP	306	PROQTYHP	G/76
LCN	HG	199	LSACONXB	H/77
ALC	HG	019	ALTLCNXB	H/78
REMARKS	HI	311	REMARKHI	H/79
TM CODE	HK	437	TMCODEXI	J&K/80
FIG NO	HK	144	FIGNUMHK	J&K/81
ITEM NO	HK	184	ITEMNOHK	J&K/82
TM CHG	HK	436	TMCHGNHK	J/83
TM IND	HK	439	TMINDCHK	J/84
QTY FIG	HK	318	QTYFIGHK	J/85
WUC/TM FGC	HG	516	WRKUCDHG	J/86
	HK	438	TMFGCDHK	
--BASIS OF ISSUE--				
QTY-A	HM	030	QTYBOIHM	J/87
EI	HM	030	RATIOBHM	
LV	HM	030	LVLBOIHM	
CTR	HM	030	BOICTRHM	
CC	HA	066	CRITCDHA	J/88
ITEM NAME CODE	HA	183	INAMECHA	J/89
LRU	HG	194	LRUNITHG	J/90
PROVISIONING NOMENCLATURE	HL	310	PROVNOHL	K/91
MATERIAL	HA	218	MATERLHA	M/92

LSA-036

30.29 LSA-037 SPARES AND SUPPORT EQUIPMENT IDENTIFICATION LIST REPORT SPECIFICATION

30.29.1 SELECTION. The LSA-037 report is selectable by mandatory EIAC, Start LCN, LCN TYPE, and UOC; and optional (ALC default is all ALCs), Stop LCN (default is all LCNs subordinate to, including, the start LCN), Report Parts (default is all parts), and ICC'S for each report part (default is all applicable ICC's).

The additional selection options by ICC and RPT PT consist of:

a. RPT PT:
   1. Part 1, enter a (y) if part 1 of the 037 report is required, otherwise, leave blank.
   2. Part 2, enter a (y) if part 2 of the 037 report is required, otherwise, leave blank.
   3. Part 3, enter a (y) if part 3 of the 037 report is required, otherwise, leave blank.
   4. Part 4, enter a (y) if part 4 of the 037 report is required, otherwise, leave blank.

b. Enter the ICC's for which the report parts 1-4 are required.
   1. Part 1, Investment Spare (ICC of X, AA) are allowed.
   2. Part 2, Expense Spare (ICC of Y, Z, 9, AB, AE) are allowed.
   3. Part 3, Support Equipment (ICC of G, H, 7, AD) are allowed.
   4. Part 4, Tool and Test Equipment (ICC of D, M, N, P, R, V, 1-6, 8, AC) are allowed.

   See appendix E of MIL-STD-1388-2B for a listing and definitions of the various ICCs. These groupings will only have validity when definitions of the ICCs specified in appendix E of MIL-STD-1388-2B have been adhered to.

c. If no ICC's are selected for a selected report part (1-4) then all of the possible ICC's for that report part are output.

30.29.2 PROCESSING. Items qualify for a particular section based on ICCs and the report part selected. The Manufacturer's Part Number (Reference Number) is wrapped at 16 positions. The MTBF'S are depicted by comparative analyzed (C), allocated (A), predicted (P), and measured (M) (Where a measured value has not been entered, the report will default to the predicted, then allocated, and finally comparative analysis) (these come from RAM Indicator Code). The Unit of Measure Price that is pulled is identified by a "Y" in UM Price Provisioning (PROUMPHE).

30.29.3 REPORT FORMAT. See Figure 3.26

30.29.4 REPORT SEQUENCE. Within each section the report is sequenced by ascending manufacturer's part number

30.29.5 DATA SOURCES. The source of the data appearing on the LSA-037 summary is depicted below by data table and element codes.

Report Header	Table Code	DED	Element Code
EIAC	XB	096	EIACODXA
LCN NOMENCLATURE	XB	201	LCNAMEXB
START LCN	XB	199	LSACONXB
ALC	XB	019	ALTLCNXB

TYPE	XB	203	LCNTYPXB
STOP LCN	XB	199	LSACONXB
UOC	XC	501	UOCSEIXC

UOC is matched VIA the XF Table to the task LCN

ICC (SELECTED)

RPT PT (SELECTED)

SECTION A: INVESTMENT SPARES; REPAIR PARTS AND SUPPLIES (HEADER)

MANUFACTURES PART NUMBER	CI	337	PROREFCI
ITEM NAME	HA	182	ITNAMEHA
CAGE	CI	046	PROCAGCI

Qualify against ICC's ITMCATHG in HG table

EC	HG	100	ESSCODHG
MTBF	BD	229	TEMTBFBD
RAM IND	BD	347	RAMINDBD
MB	BD	238	TMTBFMBD
QTY/EI	HG	317	QTYPEIHG
QTY/REC	HG	453	TOTQTYHG
PLT	HA	299	PRDLDTHA
PMIC	HA	293	PMICODHA
DMILC	HA	076	DEMILIHA
SLAC	HA	378	SLACTNHA
UNIT OF MEASURE PRICE	HE	492	UMPRICHE
UM	HA	491	UNITMSHA

SECTION B: EXPENSE SPARES, REPAIR PARTS AND SUPPLIES (HEADER)

MANUFACTURES PART NUMBER	CI	337	PROREFCI
ITEM NAME	HA	182	ITNAMEHA
CAGE	CI	046	PROCAGCI

Qualify against ICC's ITMCATHG in HG table

PLT	HA	299	PRDLDTHA
LRU	HG	194	LRUNITHG
UNIT OF MEASURE PRICE	HE	492	UMPRICHE
UM	HA	491	UNITMSHA

SECTION C: SUPPORT EQUIPMENT (HEADER)

MANUFACTURES PART NUMBER	CG	337	TSREFNCG
ITEM NAME	HA	182	ITNAMEHA
QTY REC	HG	453	TOTQTYHG
CAGE	CG	046	TSCAGECG

Qualify against ICC's SEICCDEA in EA table

PMIC	HA	293	PMICODHA
DMILC	HA	076	DEMILIHA
UNIT OF MEASURE PRICE	HE	492	UMPRICHE
UM	HA	491	UNITMSHA

SECTION D: TOOLS AND TEST EQUIPMENT

MANUFACTURES PART NUMBER	CG	337	TSREFNCG
ITEM NAME	HA	182	ITNAMEHA
CAGE	CG	046	TSCAGECG

Qualify against ICC's SEICCDEA in EA table

PLT	HA	299	PRDLDTHA
UNIT OF MEASURE PRICE	HE	492	UMPRICHE
UM	HA	491	UNITMSHA

LSA-037

30.30 LSA-039 CRITICAL AND STRATEGIC ITEM SUMMARY REPORT SPECIFICATION

30.30.1 SELECTION. The LSA-039 summary is selected by mandatory EIAC and LCN, and optional ALC (default is all ALCs), STOP LCN (default is all LCNs subordinate to, and including, the start LCN), UOC (default is all UOCs), PARTS (default is all parts), SEQ PART I (default is LCN), SEQ PART II (default is LCN), CRITICAL ITEM CODE (Part I only, default is all CICs), AND IMAC (Part II only, default is all IMAC Codes).

30.30.2 PROCESSING. If part I is selected, a CRITICAL ITEM CODE must be contained against an item within the selected LCN range; if part II is selected, an IMAC must be contained within the selected LCN range in order to produce an LSA-039 summary.

30.30.3 REPORT FORMAT. See Figure 3.27

30.30.4 REPORT SEQUENCE. Part I is sequenced in either ascending LCN or by ascending Reference Number and CAGE; part II is sequenced in either ascending LCN or by ascending IMAC entries.

30.30.5 DATA SOURCE. The source of data appearing on the LSA-039 summary is depicted below by data table and element codes.

Report header	Table Code	DED	Element Code
EIAC	HG	096	EIACODXA
ITEM NAME	HA	182	ITNAMEHA
START LCN	HG	199	LSACONXB
ALC	HG	019	ALTLCNXB
TYPE	HG	203	LCNTYPXB
STOP LCN	HG	199	LSACONXB
UOC	XC	501	UOCSEIXC
UOC is matched VIA the HO Table			
PARTS (SELECTED)			
SEQ PT I (SELECTED)			
SEQ PT II (SELECTED)			
CRITICAL ITEM CODES SELECTED	HA	065	CRITITHA
IMAC (1ST POS) SELECTED	HA	163	INDMATHA
PART I			
LCN	HG	199	LSACONXB
ALC	HG	019	ALTLCNXB
WUC	HG	516	WRKUCDHG
CAGE	HG	046	CAGECDXH
REFERENCE NUMBER	HG	337	REFNUMHA
ITEM NAME	HA	182	ITNAMEHA
UI	HA	488	UNITISHA
CRIT ITEM CD	HA	065	CRITITHA
QPA	HG	316	QTYASYHG
PART II			
LCN	HG	199	LSACONXB

ALC	HG	019	ALTLCNXB
WUC	HG	516	WRKUCDHG
CAGE	HG	046	CAGECDXH
REFERENCE NUMBER	HG	337	REFNUMHA
PLISN	HG	309	PLISNOHG
	XC	309	PLISNOXC
NHA-PLISN	HH	258	NHAPLIHH
NHA-IND	HH	259	NHAINDHH
NHA-CAGE	HG	046	CAGECDXH
NHA-REFERENCE-NUMBER	HG	337	REFNUMHA
ITEM NAME	HA	182	ITNAMEHA
UI	HA	488	UNITISHA
MAT-WT	HA	220	MTLWGTHA
MAT-LEAD	HA	219	MTLEADHA
QPA	HG	316	QTYASYHG
IMAC	HA	163	INDMATHA

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30.31 LSA-040 AUTHORIZATION LIST ITEMS SUMMARY REPORT SPECIFICATION

FIRST TIER SELECTION: The First selection is only one of the following:

Option 1: COEI, BII, AAL, and ESML Lists
Option 2: Stockage List Type Three

OPTION 1, COEI, BII, AAL, AND ESML LISTS.

30.31.1 SELECTION. The LSA-040 summary is selected by mandatory LCN, and optional ALC, STOP LCN, UOC,

30.31.2 PROCESSING. Option 1 is divided into four sections: components of end item, basic issue items list, additional authorization list, and expendable durable supplies and materials list. The items are identified by code A in position 1 and the appropriate list code in position 2 of the Allowance Item Code (AICODEHG).

a. Section I, Components of End Item (COEI) List. This section provides a listing of those items which are part of the end item, but are removed and separately packaged for transportation or shipment. The items are listed in alphabetical sequence of Item Name (ITNAMEHA) and are identified by a "C" in the second position of the AIC. ILLUS NO. is computer generated based on the item sequence. if Section II is also required, then the computer generated ILLUS NO. is not reset to 1 but continues with the next sequence number.

b. Section II, Basic Issue Items (BII) List. This section provides a listing of those minimum essential items required to place an equipment in operation, to operate it, and to perform emergency repairs. The items are listed in alphabetic sequence of Item Name (ITNAMEHA) and are identified by "A" in the second position of the AIC.

c. Section III, Additional Authorization List (AAL). This section provides a listing of those items which are not issued with an end item and are not listed/identified on the end item engineering drawings as part of the end item configuration. The items are listed in alphabetic sequence by item name (ITNAMEHA) within each subsection. AAL-MTOE Authorized are identified by AIC of "E" and AAL-Other Authorized are identified by AIC, second position of "F".

Section IV, Expendable/Durable Supplies and Materials List (ESML) provides a listing of those expendable/durable supplies and materials required to operate and maintain the equipment. The items are listed in alphabetic sequence by item name (ITNAMEHA) and are identified by AIC, second position of "D". ITEM NO is computer generated. Level is determined by the SMR (3d position).

30.31.3 REPORT FORMAT. See Figure 3.28

30.31.4 REPORT SEQUENCE. Alphabetical sequence of Item Name. Secondary Sort on NSN.

30.31.5. DATA SOURCE. See attached listings.

OPTION 2. STOCKAGE LIST TYPE THREE

30.31.1 SELECTION. The LSA-040 option 2 is selected by mandatory LCN, and optional ALC, STOP LCN, UOC, and LIST section.

30.31.2 PROCESSING. In order to produce Option 2 of the LSA-040 summary, at least one entry of an Allowance Item Code of "E" in the first position, and the applicable code for the selected section(s) must be contained within the selected LCN range. "Ref Desig Fig-Key" is only printed if Ref Des Code = F. If item qualifies and no RDC = F, leave Ref Desig Fig-Key blank. Sort blanks first in each section with 2nd sort on NSN.

a. Section I, Supply System Responsibility consists of AIC items coded "A" and "D"in the second position. The items coded "D" will show the AIC Quantity (AICQTYHG) preceding the Item Name in the description column. "ED" coded items will be indented 2 spaces and AIC quantities printed preceding item name and provisioning nomenclature, instead of printing QTYPEIHG value in "QTY USED IN UNIT" column, as is the case for "EA" coded items and all other items in ither sections. Section II, Using unit Responsibility, is determined by AIC values of "C" in the second position. Section III, Collateral Equipment is determined by AIC value of "E" in the second position.

b. ITEM NO. is a computer generated sequence number assigned to each item beginning with 0001. If multiple sections are present, the Item number is NOT reset to 1.

30.31.3 REPORT FORMAT. See Figure 3.28

30.31.4 REPORT SEQUENCE. Items are sequenced in ascending Reference Designation and LCN within each section.

30.31.5 DATA SOURCE. The source of data appearing on the LSA-040 summary is depicted below by data table and element codes.

Report header	Table Code	DED	Element Code
OPTION 1, COEI,BII, AAL, ESML			
EIAC	HG	096	EIACODXA
ITEM NAME	HA	182	ITNAMEHA
START LCN	HG	199	LSACONXB
ALC	HG	019	ALTLCNXB
TYPE	HG	203	LCNTYPXB
STOP LCN	HG	199	LSACONXB
UOC	HO/XC	501	UOCSEIXC
AUTH LISTS SELECTED	HG	017	ALLOWCHG
ILLUS NO (GENERATED)			
NSN	HA	253	FSCNSNHA
	HA	253	NIINSNHA
DESCRIPTION, CAGE AND REFERENCE NUMBER			
[LCN]	HG	199	LSACONXB
[ALC]	HG	019	ALTLCNXB

[AIC]	HG	017	ALLOWCHG
(ITEM NAME)	HA	182	ITNAMEHA
(PROVISIONING NOMENCLATURE)	HL	310	PROVNOHL
CAGE	HA	046	CAGECDXH
REFERENCE NUMBER	HA	337	REFNUMHA
UOC	HO/XC	501	UOCSEIXC
UM	HA	491	UNITMSHA
QTY REQ	HG	018	ALIQTYHG
PART III			
QTY AUTH	HG	018	ALIQTYHG
USABLE ON CODE	HO/XC	501	UOCSEIXC
PART IV			
LEVEL	HG	389	SMRCODHG

OPTION 2 STOCKAGE LIST TYPE THREE

Report header	Table Code	DED	Element Code
EIAC	HG	096	EIACODXA
ITEM NAME	HA	182	ITNAMEHA
START LCN	HG	199	LSACONXB
ALC	HG	019	ALTLCNXB
TYPE	HG	203	LCNTYPXB
STOP LCN	HG	199	LSACONXB
UOC	HO/XC	501	UOCSEIXC
LISTS OF COMPONENTS REQUIRED	HG	017	ALLOWCHG
ITEM NO. (GENERATED)			
NATIONAL STOCK NUMBER	HA	253	FSCNSNHA
	HA	253	NIINSNHA
REF DESIG FIG-KEY	HJ	335	REFDESHJ
[RDC]	HJ	336	RDCODEHJ
MODEL	HO/XC	501	UOCSEIXC
ITEM IDENTIFICATION			
(ALLOWANCE ITEM QUANTITY)("ED AIC ONLY)	HG	018	ALIQTYHG
(ITEM NAME)	HA	182	ITNAMEHA
(PROVISIONING NOMENCLATURE)	HL	310	PROVNOHL
UM	HA	491	UNITMSHA
QTY USED IN UNIT	HG	317	QTYPEIHG
	XC	317	QTYPEIXC
LCN	HG	199	LSACONXB
ALC	HG	019	ALTLCNXB
AIC	HG	017	ALLOWCHG
CAGE	HG	046	CAGECDXH
ADDRESS	XH	047	CANAMEXH
	XH	047	CASTREXH
	XH	047	CACITYXH
	XH	047	CASTATXH
	XH	047	CANATNXH
	XH	047	CAPOZOXH

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30.32 LSA-046 NUCLEAR HARDNESS CRITICAL ITEMS SUMMARY REPORT SPECIFICATION

30.32.1 SELECTION. The LSA-046 summary is selected by mandatory EIAC and LCN, and optional ALC (default is all ALCs), STOP LCN (default is all LCNs subordinate to, and including, the start LCN), UOC (default is all UOCs) and SEQ OPT (default is reference number CAGE).

30.32.2 PROCESSING. Items are primarily qualified by HCI entries of "Y". In order to produce an LSA-046 summary at least one Hardness Critical Item value (HARDCIHG) of "Y" must be contained within the selected Start and Stop LCN range. If the report is sequenced by Reference Number and CAGE, then the Reference Number, CAGE, Item Name, and IMC are suppressed on the second and subsequent application (PCCN/PLISN) of the same part number.

30.32.3 REPORT FORMAT. See Figure 3.29

30.32.4 REPORT SEQUENCE. The report is sequenced in either ascending Reference Number and CAGE or PCCN/PLISN.

30.32.5 DATA SOURCE. The source of data appearing on the LSA-046 summary is depicted below by data table and element codes.

Report header	Table Code	DED	Element Code
EIAC	HG	096	EIACODXA
ITEM NAME	HA	182	ITNAMEHA
START LCN	HG	199	LSACONXB
ALC	HG	019	ALTLCNXB
TYPE	HG	203	LCNTYPXB
STOP LCN	HG	199	LSACONXB
UOC	XC	501	UOCSEIXC
UOC is matched VIA the HO Table			
SEQ OPT (SELECTED)			
[HARDNESS CRITICAL ITEM]	HG	151	HARDCIHG
REFERENCE NUMBER	HG	337	REFNUMHA
CAGE	HG	046	CAGECDXH
ITEM NAME	HA	182	ITNAMEHA
IMC	HA	181	ITMMGCHA
SMR	HG	389	SMRCODHG
PCCN	XC	307	PCCNUMXC
PLISN	HG	309	PLISNOHG
IND	HG	162	INDCODHG
QTY/ASSY	HG	316	QTYASYHG
QTY/EI	HG	317	QTYPEIHG

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30.33 LSA-050 RELIABILITY CENTERED MAINTENANCE SUMMARY REPORT SPECIFICATION

30.33.1 SELECTION. The LSA-050 summary is selectable by mandatory EIAC, Start LCN, LCN TYPE, and UOC; and optional ALC (default is all ALC's), Stop LCN (default is all LCNs subordinate to, and including, the start LCN), RPT RT (default is none), SHSC, and SELECT DISP. The report part selection, SHSC, and Disposition Selection are as follows:

RPT PT:

a. Part 1
   1. Enter a (y) if part 1 of the 050 report is required, otherwise, leave blank.
   2. If part 1 has been selected then enter only those SHSC's (1, 2, 3,4) of the failure modes which are of interest to the RCM analysis. If the SHSC field has been left blank, all SHSCs will be shown.
   3. Enter (A) if the report is to be sequenced by the Disposition, (B) if the report is to be sequenced Disposition by Maintenance Level, and (C) if the report is to be sequenced by Maintenance Level only. (Defualt is A).

b. Part 2
   1. Enter a (y) if part 2 of the 050 report is required, otherwise, leave blank.
   2. If part 2 has been selected then enter only those SHSC's (1, 2, 3,4) of the failure modes which are of interest to the RCM analysis. If the SHSC field has been left blank, all SHSC will be shown.
   3. Enter (A) if the report is to be sequenced by the Disposition, (B) if the report is to be sequenced Disposition by Maintenance Level, (C) if the report is to be sequenced by Maintenance Level only, and (D) is the report is to be sequenced by Maintenance Level by Skill Specialty Code. (Defualt is A.)

c. Part 3
   1. Enter a (y) if part 3 of the 050 report is required, otherwise, leave blank.
   2. If part 3 has been selected then enter only those SHSC's (1, 2, 3,4) for which RCM analysis has not been performed. If the SHSC field has been left blank, all SHSCs will be shown.

30.33.2 PROCESSING.

a. Part 1. The report will pull the required information from the appropriate tables. Either a Failure Mode Criticality Number or a Failure Probability level may be used in the FM Crit or Fail Prob data element, Failure Mode Criticality Numbers should be used wherever possible. Only preventive maintenance tasks are identified on this report and they are identified by the second position of the task code or by task type of "P" or "U". The (P) and (M) preceding the Elapsed Time values on the output represent predicted and measured, respectively. Measured values should be used wherever possible. The failure rates are depicted by comparative analysis (C), allocated (A), predicted (P), and measured (M) (Where a measured value has not been entered, the report will default to the predicted, then allocated, and finally comparative analysis)(these come from RAM IC).

b. Part 2, The report will pull the required information from the appropriate tables, except for:

The LCN (AA) and inherent availability (AA) are from the system/end item these are based on the end item whether or not it is with the LCN selection.

If the task type (B) is "U" (Usage based) then calculate the task frequency using this calculation.

Calculated Task Frequencies. The task frequency can be calculated by:

$$TF = \frac{\text{AOR X Conv Fact}}{\text{Maintenance Interval}}$$

(The preventive TF will be calculated for only that item that the task is being done against).

The MB from the AOR and the Maintenance interval must match, otherwise it can not be calculated.

The AOR for the calculation is based on the LCN AOR from the CA table via the link between the B (task requirement LCN) and the LCN from CA tables through the Task Code.

If the task type is "P" (calendar time) for preventive maintenance task first check the 2nd position of the task code if it is Q, C, P, M, N, or L then convert it to a task frequency. If the 2nd position of the task code is "B" (schedule) then the task frequency is the maintenance interval (MB) (converted) divided by the maintenance interval. (example) the maintenance interval is 2 and MB is T (months) (converted = 12) therefore the TF is 12/2 or 6. This applies only to the MB codes of D, G, H, T, and Y. All other MB codes are usage based, Task Type = "U", and do not apply to the calendar time conversion.

The Total number of Man-Hours will be summed up for the Maintenance Level for each of the SSC's used in that maintenance level and output at the bottom of each maintenance level. MH/SSC and Maintenance Level = Sum of Mean Man-minutes per SSC and O/M level divided by 60 to convert to hours.

Either a Failure Mode Criticality Number or a Failure Probability level may be used in the FM Crit or Fail Prob data element, Failure Mode Criticality Numbers should be used wherever possible. The (P) and (M) preceding the Elapsed Time and Man Hour values on the output represent predicted and measured, respectively. Measured values should be used wherever possible. The failure rates are denoted by comparative analysis (C), allocated (A), predicted (P), and measured (M) (Where a measured value has not been entered, the report will default to the predicted, then allocated, and finally comparative analysis) (these come from RAM Indicator Code).

c. Part 3 of the report will pull the required information from the appropriate tables. Either a Failure Mode Criticality Number or a Failure Probability level may be used in the FM Crit or Fail Prob data element, Failure Mode Criticality Numbers should be used wherever

possible.

d. Each part of the 050 report should start at the top of a new page.

30.33.3 REPORT FORMAT. See Figure 3.30

30.33.4 REPORT SEQUENCING.

a. Part 1.
   1. Select Disp of (A), the report is sequenced by ascending Disposition values then LCN then Task Code.
   2. Select Disp of (B), the report is sequenced ascending Disposition by Maintenance Level, the first being Crew the last being Depot, then LCN then Task Code.
   3. Select Disp of (C), the report is sequenced by Maintenance Level, the first being crew the last depot, then LCN then Task Code.

b. Part 2.
   1. Select Disp of (A), the report is sequenced by ascending Disposition values then LCN then Task Code.
   2. Select Disp of (B), the report is sequenced ascending Disposition by Maintenance Level, the first being Crew the last being Depot, then LCN then Task Code.
   3. Select Disp of (C), the report is sequenced by Maintenance Level, the first being crew the last depot, then LCN then Task Code.
   4. Select Disp of (D), the report is sequenced by ascending Skill Specialty Code then Maintenance Level then LCN then Task Code.

c. Part 3. Shall be sorted by ascending LCN, FMI, MPC, and SHSC.

30.33.5 DATA SOURCES. The source of the data appearing on the LSA-050 summary is depicted below by data table and element codes.

Report Header	Table Codes	Ded	Element Code
EIAC	XB	096	EIACODXA
LCN NOMENCLATURE	XB	201	LCNAMEXB
START LCN	XB	199	LSACONXB
ALC	XB	019	ALTLCNXB
TYPE	XB	203	LCNTYPXB
STOP LCN	XB	199	LSACONXB
UOC	XC	501	UOCSEIXC

UOC is matched VIA the XF Table
SHSC (SELECTED)
RPT PT (SELECTED)
SELECT DISP (SELECTED)

LOGIC UTILIZED	AA	345	RCMLOGAA
LCN	BA	199	LSACONXB
ALC	BA	019	ALTLCNXB
LCN NOMENCLATURE	XB	201	LCNAMEXB
SHSC	BI	362	FMSHSCBI
FMI	BI	134	FAMOINBF
MPC	BI	246	MISSPCBL
LOGIC RESULTS (HEADER)			
01	BF	344	RCMRO1BF
02	BF	344	RCMRO2BF
03	BF	344	RCMRO3BF
04	BF	344	RCMRO4BF
05	BF	344	RCMRO5BF

06	BF	344	RCMRO6BF
07	BF	344	RCMRO7BF
08	BF	344	RCMRO8BF
09	BF	344	RCMRO9BF
10	BF	344	RCMR10BF
11	BF	344	RCMR11BF
12	BF	344	RCMR12BF
13	BF	344	RCMR13BF
14	BF	344	RCMR14BF
15	BF	344	RCMR15BF
16	BF	344	RCMR16BF
17	BF	344	RCMR17BF
18	BF	344	RCMR18BF
19	BF	344	RCMR19BF
20	BF	344	RCMR20BF
21	BF	344	RCMR21BF
22	BF	344	RCMR22BF
23	BF	344	RCMR23BF
24	BF	344	RCMR24BF
25	BF	344	RCMR25BF
DISPOSITION (HEADER)			
A	BF	084	RCMDSABF
B	BF	084	RCMDSBBF
C	BF	084	RCMDSCBF
D	BF	084	RCMDSDBF
E	BF	084	RCMDSEBF
F	BF	084	RCMDSFBF
G	BF	084	RCMDSGBF
H	BF	084	RCMDSHBF
I	BF	084	RCMDSIBF
J	BF	084	RCMDSJBF
FAILURE MODE CRIT OR FAIL PROB (HEADER)			
FAILURE MODE CRITICALITY NUMBER	BI	133	FACRNUBI
FAILURE PROBABILITY LEVEL	BI	139	FPROBLBI
MTBPM	BD	234	MTBMPVBD
MB	BD	238	MTBMPMBD
FAILURE RATE	BD	140	FAILRTBD
MB	BD	238	FARAMBBD
RAM I C	BD	347	RAMINDBD
FMR	BF	136	FMRATOBF
PREVENTATIVE MAINTENANCE (HEADER)			
(LCN IS BASED ON TASK TYPE	BH	433	TATYPEBH
AND THE 2ND POSITION OF THE TASK CODE)	BH	427	TTASKCBH
LCN	BH	199	TLSACNBH
ALC	BH	019	TALCNCBH
TASK CODE	BH	427	TTASKCBH
ELAPSED TIME (HEADER)			
MEASURED	CA	224	MSDMETCA
PREDICTED	CA	224	PRDMETCA
RCM REASONING	BG	346	FMNNARBG
(FAILURE MODE AND RCM NARRATIVE	BG	131	FMNCNABG
CODE OF (K))			
RCM REDESIGN/NARRATIVE	BG	426	FMNNARBG
(FAILURE MODE AND RCM NARRATIVE	BG	131	FMNCNABG

CODE OF (L))			
RCM AGE EXPLORATION	BG	343	FMNNARBG
(FAILURE MODE AND RCM NARRATIVE	BG	131	FMNCNABG
CODE OF (J))			
PART II			
LCN END ITEM	AA	199	LSACONXB
INHERENT AVAILABILITY END ITEM	AA	164	INHAVAAA
MAINTENANCE LEVEL	BH	427	TTASKCBH
(3RD POSITION OF TASK CODE)			
LCN	BH	199	LSACONXB
ALC	BH	019	ALTLCNXB
LCN NOMENCLATURE	XB	201	LCNAMEXB
AOR	AG	023	ANOPREAG
MB	AG	238	MEASBSAG
(AOR IS BASED ON LCN AOR LINK FROM CA TABLE VIA TASK CODE, PEACETIME)			
IA	BD	164	INHAVABD
DISPOSITION (HEADER)			
A	BF	084	RCMDSABF
B	BF	084	RCMDSBBF
C	BF	084	RCMDSCBF
D	BF	084	RCMDSDBF
E	BF	084	RCMDSEBF
F	BF	084	RCMDSFBF
G	BF	084	RCMDSGBF
H	BF	084	RCMDSHBF
I	BF	084	RCMDSIBF
J	BF	084	RCMDSJBF
TASK LCN	BH	199	TLSACNBH
ALC	BH	019	TALCNCBH
TASK CODE	BH	427	TTASKCBH
TABLE CA TASK FREQ	CA	430	TSKFRQCA
MB	CA	238	AORMSBCA
CALCULATED TASK FREQ	BH	427	TTASKCBH
(IF TASK TYPE IS P THEN CONVERT			OR
USING THE STEPS REFERENCED IN PART 2	BH	208	MAININBH
PARAGRAPH)	BH	238	MAINMBBH
CALCULATED TASK FREQ (CALCULATED)			
(IF TASK TYPE IS CODED "U" THEN CALCULATE	BH	433	TATYPEBH
USING FORMULA. AOR AND MAINTENANCE			
INTERVAL MUST MATCH OTHER WISE LEAVE			
BLANK)			
MB (TAKEN FROM THE CALCULATIONS)			
AOR	AG	023	ANOPREAG
(AOR IS BASED ON LCN AOR LINK FROM CA TABLE VIA TASK CODE)			
MB	AG	238	MEASBSAG
CONV FACT	BA	059	CONVFABA
MAINTENANCE INTERVAL	BH	208	MAININBH
MB	BH	238	MAINMBBH
MAN HOURS (HEADER)			
MEASURED	CA	225	MSDMMHCA

PREDICTED	CA	225	PRDMMHCA
ELAPSED TIME (HEADER)			
MEASURED	CA	224	MSDMETCA
PREDICTED	CA	224	MSDMETCA
MAINTENANCE INTERVAL	BH	208	MAININBH
MB	BH	238	MAINMBBH
PERSON ID	CD	288	SUBPIDCD
SSC (HEADER)			
SSC	CD	387	SKSPCDGA
NEW OR MODIFIED SSC	CD	264	MDCSSCGB
SL (HEADER)			
SL	GA	386	SKLVCDGA
NEW OR MODIFIED SKILL LEVEL	GB	386	MDSCLCGB

SSC and new or modified SSC are pulled from table CD, there should only be one, but if there is 2, the new or modified SSC should be selected. The corresponding skill levels should be pulled from either table GA or GB.

MAN-MINUTES	CD	226	SUBMMMCD
RAM LCN	BH	199	LSACONBH
ALC	BH	019	ALTLCNBH
SHSC	BI	362	FMSHSCBI
FEP	BI	130	FEPROBBI
MPC	BI	246	MISSPCBL
FMI	BI	134	FAMOINBF
FAIL MODE RATIO	BF	136	FMRATOBF
FAILURE RATE	BD	140	FAILRTBD
RAM I C	BD	347	RAMINDBD
MB	BD	238	FARAMBBD
CONV FACT	BA	059	CONVFABA
FAILURE MODE CRIT OR FAIL PROB (HEADER)			
FAILURE MODE CRITICALITY NUMBER	BI	133	FACRNUBI
FAILURE PROBABILITY LEVEL	BI	139	FPROBLBI
SSC (TAKEN FROM SSC FOR THAT O/M LEVEL)			
SSC	CD	387	SKSPCDGA
NEW OR MODIFIED	CD	257	MDCSSCGB
TOTAL MAN-HOURS (CALCULATED FOR THAT SSC AND MAINTENANCE LEVEL)			
MAN HOURS (HEADER)			
SUM OF MEAN MAN-MINUTES	CD	233	SUBMMMCD
DIVIDE THIS SUM BY 60 TO GET MAN-HOURS			
MAINTENANCE LEVEL	BH	427	TTASKCBH
(3RD POSITION OF TASK CODE)			
PART III			
SHSC	BI	362	FMSHSCBI
MPC	BI	246	MISSPCBL
FMI	BI	134	FAMOINBF
LCN	BI	199	LSACONXB
ALC	BI	019	ALTLCNXB
LCN NOMENCLATURE	XB	201	LCNAMEXB
FAILURE MODE CRIT OR FAIL PROB (HEADER)			
FAILURE MODE CRITICALITY NUMBER	BI	133	FACRNUBI
FAILURE PROBABILITY LEVEL	BI	139	FPROBLBI

lsa-050

30.34 LSA-056 FAILURE MODE, EFFECTS, AND CRITICALITY ANALYSIS (FMECA) REPORT REPORT SPECIFICATION

30.34.1 SELECTION. The LSA-056 summary is selectable by mandatory EIAC, Start LCN, LCN TYPE, UOC and SERV DES; and optional ALC (default is all ALCs), Stop LCN (default is all LCNs subordinate to, and including, the start LCN), and RPT RT.
The report part selections consist of:

RPT PT:

a. Part 1
   1. Enter a (y) if part 1 of the 056 report is required, otherwise, leave blank.
   2. If part 1 has been selected then enter only those SHSC's (1, 2, 3,4) of the failure modes which are of interest. If the SHSC field has been left blank, data involving only SHSC's of 1 and 2 will be reported.

b. Part 2
   1. Enter a (y) if part 2 of the 056 report is required, otherwise, leave blank.
   2. If part 1 has been selected then enter only those SHSC's (1, 2, 3,4) of the failure modes which are of interest. If the SHSC field has been left blank, data involving only SHSC's of 1 and 2 will be reported.
   3. Enter the lowest values of a failure mode criticality number to be included in the report. If an entry is made in b.4, Failure Probability Level then leave this field blank.
   4. Enter the lowest value of a Failure Probability Level to be include in the report. An entry must be made in either b.3 or in in this field. If an entry is made in both blocks; failure probability level is disregarded.

c. Part 3
   1. Enter a (y) if part 3 of the 056 report is required, otherwise, leave blank.
   2. If part 1 has been selected then enter only those SHSC's (1, 2, 3,4) of the failure modes which are of interest. If the SHSC field has been left blank, data involving only SHSC's of 1 and 2 will be reported.

30.34.2 PROCESSING.

a. Part 1. The report will pull the information from the appropriate tables, except for:

$$\text{Calculated Item Criticality Number, } Cr = \sum_{n=1}^{j} (Cm)n \quad n=1,2,3.....j$$

where
Cr = Criticality Number for the item
Cm = Failure Mode Criticality Number
n = The failure modes in the items that fail under a particular severity classification/mission phase combination
j = Last failure mode in the item under the severity classification/mission phase combination

Calculated Failure Mode
Criticality Number $Cm = (B*a*FR*T)(1,000,000.)$

B = Failure Effect Probability
a = Failure Mode Ratio
FR = Failure Rate
t = Operating Time

NOTE: FM Criticality Number is computed for each LCN/ALC and Failure Mode combination.

This report will print a part 1 for each LCN that Falls within the LCN select range. The failure rates are depicted by comparative analysis (C), allocated (A), predicted (P), and measured (M) (Where a measured value has not been entered, the report will default to the predicted, then allocated, and finally comparative analysis) (these come from RAM Indicator Code). If Type is (F) the Reference Number and CAGE may not appear on report. Use the second position of the task code for identifying corrective maintenance tasks.

b. Part 2 of the report will pull the required information from the appropriate tables. Reference Number is wrapped at 16 positions.

c. Part 3 of the report will pull the required information from the appropriate tables, except for:

Calculated Failure Mode
Criticality Number $Cm = (B*a*FR*T)(1,000,000.)$

B = Failure Effect Probability
a = Failure Mode Ratio
FR = Failure Rate
t = Operating Time

NOTE: FM Criticality Number is computed for each LCN/ALC and Failure Mode combination.

The Failure mode ratio(s) for an LCN should be added up (TOTAL) and placed on the report. An edit check should be made against this total to make sure it never exceeds 1.00. If the total of the Failure Mode are greater than 1.00 then an (***) should appear.

$$\text{Total} = \sum_{n=1}^{j} FMR$$

FMR = Failure Mode Ratio
n = The failure modes indicator that falls under a particular LCN, ALC, and FMI combination
j = Last failure mode indicator in the LCN and ALC combination

The failure rates are depicted by comparative analysis (C), allocated (A), predicted (P), and measured (M) (Where a measured value has not

been entered, the report will default to the predicted, then allocated, and finally comparative analysis)

d. Each part of the 056 report should start at the top of a new page.

30.34.3 REPORT FORMAT. See Figure 3.31

30.34.4 REPORT SEQUENCING.

a. Part 1, The report is sequenced by ascending values of LCN then FMI then MPC then SHSC. Part 1 will be produced once for each LCN ALC combination which falls within the select range.

b. Part 2, The report is sequenced by ascending values of FPL or descending values of FM Crit for a LCN/ALC and FMI.

c. Part 3, The report is sequenced by ascending values of LCN, ALC, FMI, and MPC.

30.34.5 DATA SOURCE. The source of the data appearing on the LSA-056 summary is depicted below by data table and element codes.

Report Header	Table Codes	Ded	Element Code
EIAC	XB	096	EIACODXA
LCN NOMENCLATURE	XB	201	LCNAMEXB
START LCN	XB	199	LSACONXB
ALC	XB	019	ALTLCNXB
TYPE	XB	203	LCNTYPXB
STOP LCN	XB	199	LSACONXB
UOC	XC	501	UOCSEIXC
UOC is matched VIA the XF Table			
SERVICE DESIGNATOR (SELECTED)			
Use the fourth position of the task code to distinguish the SER DES	BH	427	TTASKCBH
RPT PR (SELECTED)			
SHSC (SELECTED)			
PART I			
--- FMECA WORKSHEET SUMMARY ---			
LCN	BA	199	LSACONXB
ALC	BA	019	ALTLCNXB
LCN-TYPE	BA	203	LCNTYPXB
LCN NOMENCLATURE	XB	201	LCNAMEXB
FAILURE RATE	BD	140	FAILRTBD
FR MB	BD	238	FARAMBBD
RAM I C	BD	347	RAMINDBD
FAIL RATE SOURCE	BA	141	FRDATABA
DRAWING NUMBER (HEADER)			
REFERENCE NUMBER	HA	337	REFNUMHA
ADDITIONAL REFERENCE NUMBER	HB	337	REFNUMHB

To retrieve a drawing number you will need to check first in the HA table to see if the reference number documented in that area is a drawing number. To make this check look at the Reference number category Code and see if the code

of "D" has been entered. If a "D" has not been entered check in the HB table under additional reference number and go through the same check of the ARNCC.

REFERENCE NUMBER	HG	337	REFNUMHA
CAGE	HG	046	CAGECDXH
ITEM FUNCTION	BB	180	RAMNARBB
(RAM CHARACTERISTICS NARRATIVE CODE OF (A))	BB	341	RAMCNABB
CRIT MPC	BK	246	MISSPCBL
CRIT SHSC	BK	362	FMSHSCBK
TABLE BK ITEM CRIT NO	BK	180	RICRITBK
CALCULATED ITEM CRIT NO (CALCULATED BY SUMMING CALCULATED FM CRIT NO)			
MINIMUM EQUIPMENT LIST NARRATIVE	BB	244	RAMNARBB
(RAM CHARACTERISTICS NARRATIVE CODE OF (C))	BB	341	RAMCNABB
LOG CON CD	BC	425	LOCOCOBC
LOGISTICS CONSIDERATIONS/SYSTEM REDESIGN	BC	426	LOGNARBC
FMI (MUST BEGIN WITH F)	BF	134	FAMOINBF
FM-RATIO	BF	136	FMRATOBF
EFM-MTBF	BF	097	EFMTBFBF
MB	BF	238	EFMMMBBF
FAILURE MODE	BG	128	FMNNARBG
(FAILURE MODE AND RCM NARRATIVE CODE OF (E))	BG	131	FMNCNABG
FAILURE CAUSE	BG	124	FMNNARBG
(FAILURE MODE AND RCM NARRATIVE CODE OF (D))	BG	131	FMNCNABG
FAILURE EFFECTS (HEADER)			
LOCAL	BG	126	FMNNARBG
(FAILURE MODE AND RCM NARRATIVE CODE OF (B))	BG	131	FMNCNABG
NEXT HIGHER	BG	127	FMNNARBG
(FAILURE MODE AND RCM NARRATIVE CODE OF (C))	BG	131	FMNCNABG
END EFFECT	BG	125	FMNNARBG
(FAILURE MODE AND RCM NARRATIVE CODE OF (A))	BG	131	FMNCNABG
FAILURE DETECTION METHOD	BG	129	FMNNARBG
(FAILURE MODE AND RCM NARRATIVE CODE OF (F))	BG	131	FMNCNABG
FAILURE PREDICTABILITY	BG	138	FMNNARBG
(FAILURE MODE AND RCM NARRATIVE CODE OF (G))	BG	131	FMNCNABG
REMARKS (FMI MUST BEGIN WITH (F))	BG	137	FMNNARBG
(FAILURE MODE AND RCM NARRATIVE CODE OF (H))	BG	131	FMNCNABG
CORRECTIVE MAINTENANCE TASKS FOR (HEADER)			
LCN	BH	199	LSACONBH
LCN IS BASED ON 2nd POSITION OF TASK	BH	427	TTASKCBH
CODE OR ON TASK TYPE OF "C" FOR	BH	433	TATYPEBH
CORRECTIVE MAINTENANCE TASKS)			
ALC	BH	019	ALTLCNBH

FMI	BH	134	FAMOINBF
TASK-LCN	BH	199	TLSACNBH
TASK-ALC	BH	019	TALCNCBH
TASK CODE	BH	427	TTASKCBH
Look for a referenced task in the CA table			
FMI	BI	134	FAMOINBF
MPC	BI	246	MISSPCBL
SHSC	BI	362	FMSHSCBI
FAIL PROB LVL	BI	139	FPROBLBI
F-E PROB	BI	130	FEPROBBI
OPER TIME	BI	269	FMOPTIBI
OT MB	BI	238	FMOTMBBI
TABLE BI FM CRIT NO	BI	133	FACRNUBI
CALCULATED FM CRIT NO (CALCULATED)			
F-E PROB	BI	130	FEPROBBI
FM-RATIO	BF	136	FMRATOBF
FAILURE RATE	BD	140	FAILRTBD
FR MB	BD	238	FARAMBBD
RAM I C	BD	347	RAMINDBD
OPER TIME	BI	269	FMOPTIBI
OT MB	BI	238	FMOTMBBI
MISSION PHASE/OPERATIONAL MODE	BL	247	MPOPLDBL
COMPENSATING DESIGN PROVISIONS	BJ	049	FMCNARBJ
(FAILURE MODE INDICATOR MISSION PHASE CHARACTERISTICS NARRATIVE CODE OF (A))	BJ	135	FMMPCNBJ
COMPENSATING OPERATOR ACTION PROVISIONS	BJ	050	FMCNARBJ
(FAILURE MODE INDICATOR MISSION PHASE CHARACTERISTICS NARRATIVE CODE OF (B))	BJ	135	FMMPCNBJ
SYSTEM REDESIGN	BG	426	FMNNARBG
(FAILURE MODE AND RCM NARRATIVE CODE OF (I))	BG	131	FMNCNABG

--- DAMAGE MODES AND EFFECT ANALYSIS ---

DMI (FMI MUST BEGIN WITH (D))	BG	134	FAMOINBF
DAMAGE MODE	BG	128	FMNNARBG
(FAILURE MODE AND RCM NARRATIVE CODE OF (E))	BG	131	FMNCNABG
DAMAGE EFFECTS (HEADER)			
(FMI MUST BEGIN WITH (D))			
LOCAL	BG	126	FMNNARBG
(FAILURE MODE AND RCM NARRATIVE CODE OF (B))	BG	131	FMNCNABG
NEXT HIGHER	BG	127	FMNNARBG
(FAILURE MODE AND RCM NARRATIVE CODE OF (C))	BG	131	FMNCNABG
END EFFECT	BG	125	FMNNARBG
(FAILURE MODE AND RCM NARRATIVE CODE OF (A))	BG	131	FMNCNABG
REMARKS	BG	125	FMNNARBG
(FAILURE MODE AND RCM NARRATIVE CODE OF (H))	BG	131	FMNCNABG

PART II

FM CRIT	BI	133	FACNUMBI
OR			
FPL	BI	139	FPROBLBI
LCN	BA	199	LSACONXB
ALC	BA	019	ALTLCNXB
FMI	BF	134	FAMOINBF
TM FGC	XB	438	TMFGCDXB
LCN NOMENCLATURE	XB	201	LCNAMEXB
REFERENCE NUMBER	HG	337	REFNUMHA
CAGE	HG	046	CAGECDXH
FAIL RATE SOURCE	BA	141	FRDATABA

PART III

LCN	BI	199	LSACONXB
ALC	BI	019	ALTLCNXB
PART F-RATE	BD	140	FAILRTBD
RAM I C	BD	347	RAMINDBD
MB	BD	238	FARAMBBD
OP TIME	BI	269	FMOPTIBI
MB	BI	238	FMOTMBBI
MPC	BI	246	MISSPCBL
SHSC	BI	362	FMSHSCBI
FMI	BI	134	FAMOINBF
FEP	BI	130	FEPROBBI
F-M RATIO	BF	136	FMRATOBF
TABLE BI F-MODE CRIT	BI	133	FACRNUBI
CALCULATED F-MODE CRIT (CALCULATED)			
FEP	BI	130	FEPROBBI
F-M RATIO	BF	136	FMRATOBF
PART F-RATE	BD	140	FAILRTBD
MB	BD	238	FARAMBBD
RAM I C OF PART F-RATE	BD	347	RAMINDBD
OPER TIME	BI	269	FMOPTIBI
MB	BI	238	FMOTMBBI
TM FGC	XB	438	TMFGCDXB

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30.35 LSA-058 RELIABILITY AND MAINTAINABILITY ANALYSIS REPORT SPECIFICATION

30.35.1 SELECTION. The LSA-058 summary is selected by mandatory EIAC, Start LCN, LCN TYPE, and UOC; and optional ALC (default is all ALCs), Stop LCN (default is all LCNs subordinate to, and including, the start LCN), RPT PT (default is none), and SELECTION (default is none).

The report selections consist of:

a. RPT PT:
   1. Enter a (Y) in this field if part 1 is required for the report.
   2. Enter a (Y) in this field if part 2 is required for the report.

b. SELECTION: (part 1 only)
   1. Enter a (Y) in this field if the description of the failure modes and causes are required for the report.
   2. Enter a (Y) in this field if the system Redesign Recommendations resulting from the analysis of the failure modes and causes are required for the report.
   3. Enter a (Y) in this field if the logistic considerations are required for the report.
   4. Enter a (Y) in this field if the RAM Logistics Considerations Narrative resulting from the analysis of the logistic considerations and failure modes are required for the report.

   Part 2. There are no selections possible.

30.35.2 PROCESSING.

a. Part 1, The report will pull the required information from the appropriate tables (BA, BG, B, BI). Either a Failure Mode Criticality Number or a Failure Probability level may be used in the FM Crit or Fail Prob data element, Failure Mode Criticality Numbers should be used wherever possible.

b. Part 2, The report will pull the required information from the appropriate tables (B, BI).

c. The (P) or (M) preceding the elapsed time values on the output represent predicted and measured, respectively. Measured values are reported wherever possible.

d. Each part of the 058 report should start at the top of a new page.

30.35.3 REPORT FORMAT See Figure 3.32

30.35.4 REPORT SEQUENCE.

a. Part 1, The report will be sequenced by ascending RAM LCNs then FMIs.

b. Part 2, The report will be sequenced by ascending LCNs then FMIs then MPC for each Maintenance Level, the first being crew and the last being depot.

30.35.5 DATA SOURCES. The source of the data appearing on the LSA-058 summary is depicted below by data table and element codes.

Report Header	Table Codes	Ded	Element Code
EIAC	XB	096	EIACODXA
LCN NOMENCLATURE	XB	201	LCNAMEXB
START LCN	XB	199	LSACONXB
ALC	XB	019	ALTLCNXB
TYPE	XB	203	LCNTYPXB

STOP LCN	XB	199	LSACONXB
UOC	XF/XC	501	UOCSEIXC
SELECTION (SELECTED)			
RPT PT (SELECTED)			
RAM LCN	BI	199	LSACONXB
ALC	BI	019	ALTLCNXB
FMI	BI	134	FAMOINBF
LCN NOMENCLATURE	XB	201	LCNAMEXB
REFERENCE NUMBER	HG	337	REFNUMHA
CAGE	HG	046	CAGECDXH
MPC	BI	246	MISSPCBL
SHSC	BI	362	FMSHSCBI
FM CRIT OR FAIL PROB LVL (HEADER)			
FAILURE MODE CRITICALITY NUMBER	BI	133	FACRNUBI
FAILURE PROBABILITY LEVEL	BI	139	FPROBLBI
FAILURE/DAMAGE MODE	BG	128	FMNNARBG
(FAILURE MODE AND RCM NARRATIVE OF (E))	BG	131	FMNCNABG
FAILURE CAUSE	BG	124	FMNNARBG
(FAILURE MODE AND RCM NARRATIVE OF (D))	BG	131	FMNCNABG
SYSTEM REDESIGN	BG	426	FMNNARBG
(FAILURE MODE AND RCM NARRATIVE OF (I))	BG	131	FMNCNABG
LOGISTICS CONSIDERATIONS (HEADER			
STANDARDIZATION	BA	196	LOGSTABA
ACCESSIBILITY	BA	196	LOGACCBA
MAINTENANCE EASE	BA	196	LOGMAIBA
SAFETY	BA	196	LOGSAFBA
TEST POINTS	BA	196	LOGTEPBA
SKILLS	BA	196	LOGSKIBA
TRAINING	BA	196	LOGTRABA
CONN REMOVAL	BA	196	LOGCONBA
PKG AND TRANSP	BA	196	LOGPATBA
FAULT LOCATION	BA	196	LOGFLOBA
LABELING	BA	196	LOGLABBA
DAMAGE PROTECT	BA	196	LOGDSPBA
CORR AND RUST CONT	BA	196	LOGCRCBA
LOG CON CD	BC	425	LOCOCOBC
RAM LOGISTICS CONSIDERATIONS NARRATIVE	BC	426	LOGNARBC
PART II			
LCN	BH	199	LSACONBH
ALC	BH	019	ALTLCNBH
M/L (3RD POSITION TASK CODE)	BH	427	TTASKCBH
FMI	BH	134	FAMOINBF
MPC	BI	246	MISSPCBL
SHSC	BI	362	FMSHSCBI
TM FGC	XB	438	TMFGCDXB
TASK LCN	BH	199	TLSACNBH
TASK ALC	BH	019	TALCNCBH
TASK CODE	BH	427	TTASKCBH
ELAPSED TIME (HEADER)			
MEASURED MEAN ELAPSED TIME	CA	224	MSDMETCA
PREDICTED MEAN ELAPSED TIME	CA	224	PRDMETCA
FM CRIT NUMBER	BI	133	FACRNUBI

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30.36 LSA-065 MANPOWER REQUIREMENTS CRITERIA (MARC) REPORT SPECIFICATION

30.36.1 SELECTION. The LSA-065 summary is selected by mandatory EIAC, LCN, TYPE, and SERV DES, and optional ALC, STOP LCN, UOC and SSC.

30.36.2 PROCESSING. In order to produce an LSA-065 summary, qualified TaskS have subtask mean man-minutes per person ID must be contained within the selected LCN range.

a. The following formula applies for Mean Time Between Task Maintenance Actions (MTBTMA) for all Task Interval codes except Q, C, P, M, N, and L. The exceptions have MTBMA calculated by dividing 365 days by the Task Frequency. Therefore, the MB for these exceptions is always "D".

$$(1)\quad MTBTMA(i) = \frac{\text{Annual Operating Requirements}}{\text{Task Frequency}(i)}$$

Where: i = Task Codei

$$(2)\quad \text{M-HRS PER PERS ID} = \sum_{i=1}^{N} \frac{SUBMMMCDx}{60}$$

Where: N = Number of Subtasks of Task Code with Mean Minutes per Person Identifier (PID) of PIDx

b. The report displays the system/component Reference Number. Within each reference number, tasks are displayed by unscheduled/on equipment (Task Interval Codes F, G and J, and Task Operability Codes A, B, C, D and E); unscheduled/off equipment (Task Interval Codes F, G and J and Task Operability Code G); and scheduled (all Task Interval Codes except F, G, J, and Y).

30.36.3 REPORT FORMAT. See Figure 3.33

30.36.4 REPORT SEQUENCE. The report is sequenced by ascending Reference Number/CAGE. Within Reference Number/CAGE by On Equipment Tasks, Off equipment corrective tasks, and Scheduled Tasks. Within Tasks lines of report data are sorted in ascending SSC/PERS ID.

30.36.5 DATA SOURCES. The source of data appearing on the LSA-065 summary is depicted below by data table and element codes.

Report header	Table Code	DED	Element Code
EIAC	XB	096	EIACODXA
LCN NOMENCLATURE	XB	201	LCNAMEXB
START LCN	XB	199	LSACONXB
ALC	XB	019	ALTLCNXB
TYPE	XB	203	LCNTYPXB
STOP LCN	XB	199	LSACONXB
UOC	XF/XC	501	UOCSEIXC
SERV DES	CA	427	TASKCDCA
SSC	CD	387	SKSPCDGA

LCN	CA/CD	199	LSACONXB
ALC	CA/CD	019	ALTLCNXB
REFERENCE NUMBER	HG/HA	337	REFNUMHA
CAGE	HG/HA	046	CAGECDXH
NATIONAL STOCK NO	HA	253	COGNSNHA
			MATNSNHA
			FSCNSNHA
			NIINSNHA
			SMMNSNHA
			ACTNSNHA
ITEM NAME	HA	182	ITNAMEHA
SSC	CD	387	SKSPCDGA
PERSON ID	CD	288	SUBPIDCD
M-HR PER PERS ID (CALCULATED)	CD	226	SUBMMMCD
TASK CODE	CA	427	TASKCDCA
TASK IDENTIFICATION	CA	431	TASKIDCA
TASK FREQ	CA	430	TSKFRQCA
MB	CA	238	AORMSBCA
MTBMA (CALCULATED)			
TASK CRIT	CA	429	TSKCRCCA

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30.37 LSA-070 SUPPORT EQUIPMENT RECOMMENDATION DATA (SERD) REPORT SPECIFICATION

30.37.1 SELECTION. The LSA-070 report is selectable by mandatory EIAC, Support Equipment Reference Number and Support Equipment CAGE code.

30.37.2 PROCESSING. To produce the report, the selected SE Reference Number and CAGE must have an exact match with an entry in the EA table. This report is used to describe only the selected piece of SE and the Unit(s) Under Test (UUT) that it supports. EIAC is needed to link the SE to the correct Weapon System/End Item and it's subordinate UUTs.

a. The E-CAGE/PN code ("Y" or "N") in Section 2 is generated based on whether or not the SE Reference Number and CAGE has equivalent Part Numbers and CAGE codes. This is determined by searching the HB table for Additional Reference Numbers (ADDREFHB) and ARN CAGE codes (ADCAGEHB) for the SE Reference Number and CAGE code. If any are found, they are to be printed out in Section 2, Administrative Data (following Section 2, Articles Requiring Support), under the heading Equivalent CAGE/PN(s).

b. Under the Price Data header in Section 2, the Design Data and ILS values must equal the total Design Data Price and total ILS Price that are calculated in Sections 4 and 5, respectively. Pull Total Design Data and ILS values from Sections 4 and 5 and place here in Section 2. The Nonrecurring Total in Section 2 is computed by adding up the Hardware Device, Design Data, Pass Thru, and ILS prices.

c. Under Section 2, Articles Requiring Support, the ARS Designator should be pulled from Table XC for an exact match against the ARS LCN and ALC only.

d. The total Design Data Price and total ILS Price (Sections 4 and 5, respectively) are computed by summing the estimated price values for each of their respective category requirements (ESTPRCEJ and ESTPRCEL, respectively).

e. In Section 6, SE Parameters and UUT Related Information, there may be multiple parameters that the SE can measure or calibrate and multiple UUTs that the SE can support. The Parameter Group Code (PGC) for the SE (PARGPCEC) will distinguish between the different parameters that the SE can measure/calibrate and the PARGPCEC will be matched against the UUT PGC (UUTPGCUG) to associate the SE and UUT. For UUT Parameters, pull from Table HD where PROUIPHD = Y.

f. Page breaks are required between each section of the report. Also, an option should exist to allow for the headers to be printed out for the whole report even if some sections may not contain data.

30.37.3 REPORT FORMAT. See Figure 3.34

30.37.4 REPORT SEQUENCE. Section 2, System Equipment Required, will be sequenced by ascending Reference Number and CAGE. Section 2, Articles Requiring Support, and Section 6, UUT Related Information, will be sequenced by ascending LCNs. Section 6, (OTP, TPI, and AID) will be sequenced by ascending UUT LCNs, then ascending Reference Number and CAGE codes within each UUT LCN.

30.37.5 DATA SOURCES. The source of data appearing on the LSA-070 summary is depicted below by data table and element codes.

Report Header	Table Code	DED	Element Code
EIAC	XB	096	EIACODXA
MANUFACTURER'S PART NUMBER	EA	337	SEREFNEA
MANUFACTURER'S CAGE CODE	EA	046	SECAGEEA
SECTION 1. DESCRIPTION OF RQMTS (HEADER)			
FUNCTIONAL ANALYSIS	EE	147	SEQNAREE
(SUPPORT EQUIPMENT NARRATIVE CODE OF A)	EE	414	SENARCEE
DESCRIPTION AND FUNCTION	EE	078	SEQNAREE
(SUPPORT EQUIPMENT NARRATIVE CODE OF B)	EE	414	SENARCEE
SE NON-PROLIFERATION EFFORT	EE	415	SEQNAREE
(SUPPORT EQUIPMENT NARRATIVE CODE OF C)	EE	414	SENARCEE
CHARACTERISTICS OF SE	EE	044	SEQNAREE
(SUPPORT EQUIPMENT NARRATIVE CODE OF D)	EE	414	SENARCEE
INSTALLATION FACTORS OR OTHER FACILITIES	EE	169	SEQNAREE
(SUPPORT EQUIPMENT NARRATIVE CODE OF E)	EE	414	SENARCEE
ADDITIONAL SKILLS AND SPECIAL TRAINING REQUIREMENTS	EE	008	SEQNAREE
(SUPPORT EQUIPMENT NARRATIVE CODE OF F)	EE	414	SENARCEE
SERD NO.	EF	416	SERDNOEF
REV	EF	360	SRDREVEF
REV DT	EF	071	DTRVSBEF
STATUS	EF	404	STATUSEF
SE ITEM NAME	HA	182	ITNAMEHA
CAGE	EA	046	SECAGEEA
MFR'S PART NUMBER	EA	337	SEREFNEA
SECTION 2. ADMINISTRATIVE DATA (HEADER)			
LCN	HG	199	LSACONXB
ALC	HG	019	ALTLCNXB
PREPARING ACTIVITY	EA	294	PREATYEA
ORIG DT	EF	071	INTSUBEF
CAGE	EA	046	SECAGEEA
MFR'S PART NUMBER	EA	337	SEREFNEA
E-CAGE/PN (GENERATED)			
(ARN CAGE CODE)	HB	046	ADCAGEHB
(ADDITIONAL REFERENCE NUMBER)	HB	006	ADDREFHB
EA DESIGNATOR	EA	183	ENDARTEA
EA NAME	HA	188	ITNAMEHA
ACTION DATE	EF	071	DTGVDSEF
GOVT DESIGNATOR	EA	149	GOVDESEA
SE FULL ITEM NAME	EA	412	FLITNMEA
SIASCN	EA	401	SIASCNEA
SKETCH	EA	383	SKETCHEA
NATIONAL STOCK NUMBER	HA	253	COGNSNHA
			SMMNSNHA
			MATNSNHA
			FSCNSNHA
			NIINSNHA

			ACTNSNHA
ALT NSN (GENERATED)			
(ALTERNATE NSN)	EH	253	ALTFSCEH
			ALTNIIEH
CONTRACT NUMBER	EA	055	CNTRNOEA
RESPONSIBLE AGENCY (HEADER)			
NAME	EA	002	AQDCOFEA
CODE	EA	198	LGDCOFEA
PE	EA	301	PROELEEA
PSICP	EA	303	PSICPOEA
ICC	EA	177	SEICCDEA
CFE/GFE	EA	056	CFEGFEEA
CAL ITEM	EA	038	CALITMEA
CAL REQD	EA	040	CALRQDEA
SER	EA	376	SERDESEA
USER	EA	376	USESEREA
CTIC	HA	058	CTICODHA
SM&R	EA	389	SMRCSEEA
TEC	EA	480	TYPEEQEA
TECHEVAL	EA	435	TECEVLEA
TECH MANUAL CODES	EA	441	TMRQCDEA
PROD LEAD TIME	HA	299	PRDLDTHA
1ST ARTICLE	EA	071	DATFADEA
SPCL MGT	EA	393	SPMGNTEA
MGT PLAN	EA	216	MGTPLNEA
USABLE ON CODES	XC	501	UOCSEIXC
PHYSICAL DATA (HEADER)			
DIMENSIONS (HEADER)			
OPERATING LN	EA	268	OPLENGEA
OPERATING WD	EA	268	OPWIDTEA
OPERATING HT	EA	268	OPRHGTEA
OPERATING UM	EA	491	LWHOUMEA
STORAGE LN	EA	405	STOLENEA
STORAGE WD	EA	405	STOWDTEA
STORAGE HT	EA	405	STOHGTEA
STORAGE UM	EA	491	LWHSUMEA
SHIPPING LN	EA	419	SESHPLEA
SHIPPING WD	EA	419	SESHPWEA
SHIPPING HT	EA	419	SESHPHEA
SHIPPING UM	EA	491	UMSHIPEA
OPERATING WT	EA	270	OPRWGTEA
OPERATING WT UM	EA	491	WGTOUMEA
STORAGE WT	EA	406	STOWGTEA
STORAGE WT UM	EA	491	WGTSUMEA
SHIPPING WT	EA	420	SESHWTEA
SHIPPING WT UM	EA	491	UMSEWTEA
SHIPPING MODES	JD	475	WHTRLOJD
(TRANSPORTED END ITEM NARRATIVE CODE OF E)	JD	474	TREINCJD
PRICE DATA (HEADER)			
HDWR DEV	EA	153	HDWRPREA
DESIGN DATA (CALCULATED)			
PASS THRU	EA	285	PASTHREA

ILS (CALCULATED)			
NONRECURRING TOTAL (CALCULATED)			
RECURRING	EA	332	RCURCSEA
SYSTEM EQUIPMENT REQUIRED (GFAE)(HEADER)			
[SE REFERENCE NUMBER]	EM	345	SEREFNEA
[SE CAGE]	EM	046	SECAGEEA
LCN	HG	199	LSACONXB
ALC	HG	019	ALTLCNXB
CAGE	EM	046	SCAGECEM
MFR'S PART NUMBER	EM	337	SREFNOEM
WORK UNIT CODE	HG	516	WRKUCDHG
NATIONAL STOCK NUMBER	HA	253	COGNSNHA
			SMMNSNHA
			MATNSNHA
			FSCNSNHA
			NIINSNHA
			ACTNSNHA
UNIT PRICE	HD	490	UIPRICHD
GFAE DESIGNATOR	EM	179	GFAEIDEM
GFAE NAME	HA	182	ITNAMEHA
QUANTITY	EM	320	QTYTSTEM
ARTICLES REQUIRING SUPPORT (ARS)(HEADER)			
LCN	UA	199	UUTLCNUA
ALC	UA	019	UUTALCUA
TASK CODE	CG	427	TASKCDCA
MAINTENANCE PLAN	UA	209	UMNTPLUA
CAGE	HG	046	CAGECDXH
MFR'S PART NUMBER	HG	337	REFNUMHA
NATIONAL STOCK NUMBER	HA	253	COGNSNHA
			SMMNSNHA
			MATNSNHA
			FSCNSNHA
			NIINSNHA
			ACTNSNHA
SM&R	HG	389	SMRCODHG
ARS DESIGNATOR	XC	179	ITMDESXC
ARS NAME	XB	201	LCNAMEXB
MTBF	BD	229	TEMTBFBD
MB	BD	238	TMTBFMBD
Ai	BD	164	INHAVABD
CMRS	UB	036	UTSTCDUB
WORK UNIT CODE	HG	516	WRKUCDHG
ALLOWANCE	UA	016	UTALLOUA
WORK PKG REF	UA	515	UTWPRFUA
SECTION 2. ADMINISTRATIVE DATA (HEADER)			
E-CAGE/PN	HB	046	ADCAGEHB
		006	ADDREFHB
ALTERNATE NSN(S)	EH	253	ALTFSCEH
			ALTNIIEH
REVISION REMARKS	EG	417	REVREMEG
EXPLANATION	EE	411	SEQNAREE

(SUPPORT EQUIPMENT NARRATIVE CODE OF G)	EE	414	SENARCEE
SECTION 3. SUPERSEDURE/DELETION/			
DISTRIBUTION DATA (HEADER)			
SUPERSEDURE DATA (HEADER)			
SERDS SUPERSEDED BY THIS SERD (HEADER)			
SERDS THAT SUPERSEDE THIS SERD (HEADER)			
[SUPERCEDURE TYPE]	EK	408	SUTYPEEK
SERD NO	EK	416	SUSRNOEK
REASON FOR SUPERSEDURE	EK	327	REASUPEK
CAGE	EK	046	SPRCAGEK
MFR'S PART NUMBER	EK	337	SPRREFEK
SE ITEM NAME	EK	182	SUPITNEK
IC	EK	172	ICCODEEK
REASON FOR DELETION	EK	327	REASUPEK
ALLOCATION DATA (HEADER)			
ALLOWANCE	EB	016	ALDCNMEB
SIDN	EB	015	ALSTIDEB
MLF	EB	015	ALMLVLEB
LVC	EB	015	ALLVCDEB
CUST CODE	EA	069	CUSTCDEA
DESIG DESCRIP	EB	015	ALDNDSEB
ALLOWANCE RANGE	EB	015	ALORG1EB
			ALORG2EB
			ALORG3EB
			ALORG4EB
			ALORG5EB
			ALORG6EB
			ALORG7EB
			ALORG8EB
			ALORG9EB
			ALRG10EB
(END ITEM DENSITIES - SELECTED)			
MOBILE FACILITY	EA	248	MOBFACEA
SPARE FACTOR	EA	390	SPRFACEA
REVOLVING ASSETS	EA	361	REVASSEA
SPECIFIC AUTHORIZATIONS (HEADER)			
NUMBER OF ACTIVITIES	ED	399	NUMACTED
TYPE OF ACTIVITY	ED	399	TYPACTED
NAME/LOCATION OF ACTIVITY	ED	399	ACTNAMED
QTY PER ACTIVITY	ED	399	SEQTYAED
SECTION 4. DESIGN DATA (HEADER)			
REQUIREMENTS (HEADER)			
DESIGN DATA CATEGORIES (HEADER)			
DDCC	EJ	079	DSNDATEJ
CONTRACTOR RECOMMENDED	EJ	057	CNTRECEJ
GOVERNMENT REQUIRED	EJ	150	GOVRQDEJ
ESTIMATED PRICE	EJ	101	ESTPRCEJ
SCOPE	EJ	365	DDCCSCEJ
DESIGN DATA PRICE (CALCULATED)			

SECTION 5. ILS DATA (HEADER)			
REQUIREMENTS (HEADER)			
ILS CATEGORIES (HEADER)			
IRCC	EL	171	IRCCODEL
CONTRACTOR RECOMMENDED	EL	057	CONRECEL
GOVERNMENT REQUIRED	EL	150	GOVRQDEL
ESTIMATED PRICE	EL	101	ESTPRCEL
SCOPE	EL	365	IRCSCOEL
ILS PRICE (CALCULATED)			
SECTION 6. SE PARAMETERS AND UUT RELATED			
INFORMATION (HEADER)			
SE PARAMETERS (HEADER)			
PGC	EC	284	PARGPCEC
I/O	EC	284	SPARIOEC
PARAMETER	EC	284	PARPAREC
RANGE FROM	EC	284	RNGFRMEC
RANGE TO	EC	284	RNGTOCEC
ACCURACY	EC	284	PARACCEC
R/V	EC	284	PARRVCEC
CALIBRATION PROCEDURE	EC	039	CALPROEC
UUT RELATED INFORMATION (HEADER)			
UUT INFORMATION (HEADER)			
LCN	UB	199	UUTLCNUA
ALC	UB	019	UUTALCUA
CAGE	HG	046	CAGECDXH
MANUFACTURER'S PART NUMBER	HG	337	REFNUMHA
ITEM NAME	HA	182	ITNAMEHA
MAINTENENCE PLAN NUMBER	UA	209	UMNTPLUA
TRD	UA	448	UTTRDNUA
CMRS STAT	UB	036	UTSTCDUB
CMRS RECMD	UB	035	UTCMRSUB
ALLOWANCE	UA	016	UTALLOUA
WORK PKG REF	UA	515	UTWPRFUA
CONV FACT	BA	059	CONVFABA
MTBF	BD	229	TEMTBFBD
MB	BD	238	TMTBFMBD
PRICE	HD	490	UIPRICHD
UUT PARAMETERS (HEADER)			
PGC	UG	284	UUTPGCUG
I/O	UG	284	UUTPIOUG
PARAMETER	UG	284	UUTPARUG
RANGE FROM	UG	284	UUTPRFUG
RANGE TO	UG	284	UUTPRTUG
ACCURACY	UG	284	UUTPACUG
R/V	UG	284	UUTPRVUG
TASK CODE	CG	427	TASKCDCA
CMRSP	UG	034	UUTPPCUG
TAR DES	UG	442	UUTPTDUG
TAR ACT	UG	442	UUTPTAUG
FAULT ISOLATED REPLACEABLE UNITS (HEADER)			
CAGE	UH	046	PROCAGCI

MFR'S PART NUMBER	UH	337	PROREFCI
ITEM NAME (BASED ON PROREFCI & PROCAGCI)	HA	182	ITNAMEHA
TRD IND	UH	447	UUTFTDUH
FAULT ISO AMGR	UH	143	UUTFA1UH
			UUTFA2UH
FAULT ISO PCT	UH	143	UUTFP1UH
			UUTFP2UH

SECTION 6. SE PARAMETERS AND UUT RELATED INFORMATION (HEADER)

OPERATIONAL ATE/TMDE TEST PROGRAM (HEADER)

UUT LCN	UD	199	UUTLCNUA
UUT ALC	UD	019	UUTALCUA
CAGE	UC	046	OTPCAGUC
MFR'S PART NUMBER	UC	337	OTPREFUC
SERD NO	UC	416	OTPSRDUC
ITEM NAME	HA	182	ITNAMEHA
APPORTIONED UNIT COST NONRECURRING	UC	025	OTPACNUC
APPORTIONED UNIT COST RECURRING	UC	025	OTPACRUC
STAN COMP	UC	402	OTPSFCUC
CTP	UC	060	OTPCTPUC

TEST PROGRAM INSTRUCTION (HEADER)

UUT LCN	UD	199	UUTLCNUA
CAGE	UE	046	TPICAGUE
MFR'S PART NUMBER	UE	337	TPIREFUE
SERD NO	UE	416	TPISRDUE
ITEM NAME	HA	182	ITNAMEHA
APPORTIONED UNIT COST NONRECURRING	UE	025	TPAUCNUE
APPORTIONED UNIT COST RECURRING	UE	025	TPAUCRUE
TDP	UE	434	TPITDPUE
SELF TEST	UE	370	TPISTSUE

ADAPTER/CABLE SET/INTERCONNECTING DEVICE (HEADER)

UUT LCN	UJ	199	UUTLCNUA
CAGE	UI	046	AIDCAGUI
MFR'S PART NUMBER	UI	337	AIDREFUI
SERD NO	UI	416	AIDSRDUI
ITEM NAME	HA	182	ITNAMEHA
APPORTIONED UNIT COST NONRECURRING	UI	025	AIDUCNUI
APPORTIONED UNIT COST RECURRING	UI	025	AIDUCRUI
COMMON UUT	UI	048	AIDCUTUI

ATE TEST STATION (HEADER)

CAGE	UK	046	ATECAGUK
MFR'S PART NUMBER	UK	337	ATEREFUK
ITEM NAME	HA	182	ITNAMEHA
GOVERNMENT DESIGNATOR	UK	149	ATEGDSUK
UUT RELATED REMARKS	UF	499	UTEXPLUF

LSA-070

30.38 LSA-071 SUPPORT EQUIPMENT CANDIDATE LIST REPORT SPECIFICATION

30.38.1 SELECTION. This report is selectable by mandatory EIAC, Start LCN, UOC, and Initial/Reissue List (User must enter whether this is an initial or reissue Candidate List); and optional ALC, Stop LCN and SERV DES.

30.38.2 PROCESSING. Item qualify through CG table in the specified LCN range must exist and have a match between the CG table Reference Number (TSREFNCG) and CAGE (TSCAGECG) and the EA table Reference Number (SEREFNEA) and CAGE (SECAGEEA). Items are further qualified by Item Category Codes (SEICCDEA) of 7, 8, M, D, 1, H, 5, 2, G, P, 3, AD, AF. Task codes are qualified by matching on the selected SERV DES (4th position task code).

a. Part I items must match on Status Code (STATUSEF) of A, C, G, R, or U.

b. Part II Disapproved Support Equipment Candidates are further qualified by matching against a Status code (STATUSEF, table EF) of "X".

c. If the Status code is not available, the qualified support equipment will be included in Part I.

d. Initial or Reissue (whichever is selected) will be printed out on the report selection header line.

30.38.3 REPORT FORMAT. See Figure 3.35

30.38.4 REPORT SEQUENCE. Part I of this report is sequenced by ascending Reference Number. All applicable Tasks for that piece of SE will be listed by ascending LCN then Task Code. Part II is sequenced by ascending Reference Numbers.

30.38.5 DATA SOURCES. The source of data appearing on the LSA-071 summary is depicted below by data table and element codes.

Report Header	Table Code	DED	Element Code
EIAC	XB	096	EIACODXA
LCN NOMENCLATURE	XB	201	LCNAMEXB
START LCN	XB	199	LSACONXB
TYPE	XB	209	LCNTYPXB
ALC	XB	019	ALTLCNXB
STOP LCN	XB	199	LSACONXB
UOC	XF	501	UOCSEIXC
SERV DES	CA	427	TASKCDCA
INITIAL/REISSUE LIST (THROUGHPUT)			
PART I - SUPPORT EQUIPMENT CANDIDATES			
LCN	CA	199	LSACONXB
ALC	CA	019	ALTLCNXB
LCN NOMENCLATURE	XB	201	LCNAMEXB
TASK CD	CA	427	TASKCDCA
TASK IDENTIFICATION	CA	431	TASKIDCA

TM FGC	XB	438	TMFGCDXB
SE REFERENCE NUMBER	EA	337	SEREFNEA
CAGE	EA	046	SECAGEEA
SE ITEM NAME	HA	182	ITNAMEHA
UNIT PRICE	HD	490	UIPRICHD
SE NSN	HA	253	COGNSNHA
			SMMNSNHA
			MATNSNHA
			FSCNSNHA
			NIINSNHA
			ACTNSNHA
SMR CODE	EA	389	SMRCSEEA
DESCRIPTION AND FUNCTION OF SE	EE	078	SEQNAREE
(SUPPORT EQUIPMENT NARRATIVE CODE OF B)	EE	414	SENARCEE
PART II - DISAPPROVED SE CANDIDATES (HEADER)			
SERD NUMBER	EF	416	SERDNOEF
DATE OF GOVT DISPOSITION	EF	071	DTGVDSEF

(REMAINDER OF DATA ELEMENT SOURCES SAME AS ABOVE)

lsa-071

30.39 LSA-072 TEST, MEASUREMENT and DIAGNOSTIC EQUIPMENT REQUIREMENTS SUMMARY REPORT SPECIFICATION

30.39.1 SELECTION. This report can be selected in two different ways. First, the Reference Number and CAGE of the piece of TMDE equipment can be selected. Second, a range of LCNs can be selected and the TMDE that qualify under this range are output. In either case, the EIAC is mandatory. If the first option is chosen, the Reference Number and CAGE are mandatory and the Start LCN, ALC, Stop LCN, UOC, and SERV DES are not applicable. If the second option is chosen, the Start LCN, UOC are mandatory and SERV DES, ALC and Stop LCN are optional.

30.39.2 PROCESSING. If the Support Equipment Reference option is used, the selected Reference Number and CAGE must have an exact match with a reference number (and CAGE) from table EA (SEREFNEA and SECAGEEA). If an LCN range is selected, at least one UB table must exist and have a match on EIAC, LCN, ALC, and LCN Type within the selected LCN range. The Support Equipment(s) will be pulled from qualified Table UB records.

a. The Part I header "TMDE Item Selected By" will show the Reference Number/CAGE selected if the Support Equipment Reference Number option is chosen, or it will show the LCN/ALC combination(s) which requires the piece of support equipment, if the other option is chosen.

b. Part II Quantity is calculated by multiplying the values for Number of activities (NUMACTED) by the Quantity per Activity (SEQTYAED).

c. Manual entries can be made at the end of Part II for Estimated Type Classification Date, Prepared By, and the Date.

d. Page breaks are required between Part I and Part II.

30.39.3 REPORT FORMAT. See Figure 3.36

30.39.4 REPORT SEQUENCE. If the Reference Number selection option is used, the report will only produce output for the one Reference Number. If the LCN range option is used, the report will sequence by qualified ascending LCNs first, then by ascending Support Equipment Reference Numbers within each LCN.

30.39.5 DATA SOURCES. The source of data appearing on the LSA-072 summary is depicted below by data table and element codes.

Report Header	Table Code	DED	Element Code
EIAC	XB	096	EIACODXA
LCN NOMENCLATURE	XB	201	LCNAMEXB
START LCN	XB	199	LSACONXB
TYPE	XB	209	LCNTYPXB
ALC	XB	019	ALTLCNXB
STOP LCN	XB	199	LSACONXB
UOC	XF	501	UOCSEIXC
SERV DES	CA	427	TASKCDCA
SE REFERENCE NUMBER (SELECTED)	EA	337	SEREFNEA
CAGE (SELECTED)	EA	046	SECAGEEA

TMDE ITEM SELECTED BY (HEADER)			
PART I - TMDE TECHNICAL DESCRIPTION			
SE REFERENCE NUMBER	EA	337	SEREFNEA
CAGE	EA	046	SECAGEEA
ITEM NAME	HA	182	ITNAMEHA
FULL ITEM NAME	EA	412	FLITNMEA
DESCRIPTION AND FUNCTION OF SE	EE	078	SEQNAREE
(SUPPORT EQUIPMENT NARRATIVE CODE OF B)	EE	414	SENARCEE
I/O	EC	284	SPARIOEC
PARAMETER	EC	284	PARPAREC
RANGE FROM	EC	284	RNGFRMEC
RANGE TO	EC	284	RNGTOCEC
RANGE ACCURACY	EC	284	PARACCEC
DEPTH	EA	268	OPLENGEA
WIDTH	EA	268	OPWIDTEA
HEIGHT	EA	268	OPRHGTEA
UM	EA	491	LWHOUMEA
WEIGHT	EA	270	OPRWGTEA
UM	EA	491	WGTOUMEA
MIN VOLTS	EI	168	IPOPRGEI
MAX VOLTS	EI	168	IPSRGMEI
AC/DC	EI	168	IPACDCEI
MAX FREQUENCY	EI	168	IPFRMXEI
MIN FREQUENCY	EI	168	IPRGMXEI
PHASE	EI	168	IPPHASEI
WATTS	EI	168	IPPOWREI
PERCENT MAX RIPPLE	EI	168	IPMXRPEI
ITEMS THIS WILL REPLACE (HEADER)			
SUPERSEDED REFERENCE NUMBER	EK	337	SPRREFEK
CAGE	EK	046	SPRCAGEK
SKILL SPECIALTY CODE FOR SE	EA	387	SSCOPREA
PUBLICATIONS	EA	278	OPRMANEA
MAINT LEVEL	EA	277	RPRLVLEA
TMDE RAM CHARACTERISTICS (HEADER)			
MTBF	EA	229	SEMTBFEA
MTTR	EA	236	SEMTTREA
CAL TIME	EA	042	CALTIMEA
NSN AND RELATED DATA	HA	253	COGNSNHA
			SMMNSNHA
			MATNSNHA
			FSCNSNHA
			NIINSNHA
			ACTNSNHA
TYPE CLASS	EA	479	TYPCLSEA
LIN	HA	193	LINNUMHA
LOG CONTROL CODE	EA	197	LGCTCDEA
SELF TESTING	EA	370	SLFTSTEA
CAL INTERVAL	EA	037	CALINTEA
LIFE CYCLE STATUS	EA	190	LICYSTEA
UNIT COST	HD	490	UIPRICHD
END ITEM NSN AND RELATED DATA	HA	253	COGNSNHA
			SMMNSNHA
			MATNSNHA

			FSCNSNHA
			NIINSNHA
			ACTNSNHA
SE MANAGING COMMAND	EA	217	MGCOATEA
SE REMARKS	EE	411	SEQNAREE
(SUPPORT EQUIPMENT NARRATIVE CODE OF G)	EE	414	SENARCEE
DESCRIPTION OF OPERATING PROCEDURE			
(MANUAL ENTRY)			
PART II - TMDE REQUIREMENTS REVIEW (HEADER)			
SUPPORTED LCN	UB	199	UUTLCNUA
ALC	UB	019	UUTALCUA
SUPPORTED NOMENCLATURE	XB	201	LCNAMEXB
TMDE NON-PROLIFERATION SEARCH	EE	415	SEQNAREE
(SUPPORT EQUIPMENT NARRATIVE CODE OF C)	EE	414	SENARCEE
SSC	EA	387	SSCOPREA
MAINT LVL	EA	277	RPRLVLEA
TMDE REG NO	EA	445	TMDERIEA
TMDE CODE	EA	444	TMDERCEA
JUSTIFICATION	EE	188	SEQNAREE
(SUPPORT EQUIPMENT NARRATIVE CODE OF H)	EE	414	SENARCEE
QUANTITY OF TMDE ITEMS TO BE PROCURED (HEADER)			
QUANTITY (CALCULATED)			
(NUMBER OF ACTIVITIES)	ED	399	NUMACTED
(QUANTITY PER ACTIVITY)	ED	399	SEQTYAED
DATE REQUIRED	EA	071	DATFADEA
ESTIMATED TOTAL COST	EA	103	EXUNPREA
ITEM NAME	HA	182	ITNAMEHA
NATIONAL STOCK NUMBER	HA	253	FSCNSNHA
			NIINSNHA
CHARACTERISTICS TO BE MEASURED/STIMULUS			
REQUIRED (HEADER)			
I/O	UG	284	UUTPIOUG
PARAMETER	UG	284	UUTPARUG
RANGE FROM	UG	284	UUTPRFUG
RANGE TO	UG	284	UUTPRTUG
RANGE ACCURACY	UG	284	UUTPACUG
INTERFACE ADAPTERS/SIGNAL CONDITIONING			
CIRCUITRY (HEADER)			
ITEM NAME	HA	182	ITNAMEHA
REFERENCE NUMBER	UJ	337	AIDREFUI
CAGE	UJ	046	AIDCAGUI
RECURRING APPORTIONED UNIT COST	UI	025	AIDUCRUI
NONRECURRING APPORTIONED UNIT COST	UI	025	AIDUCNUI
ATE SOFTWARE REQUIRED (HEADER)			
ITEM NAME	HA	182	ITNAMEHA
REFERENCE NUMBER	UD	337	OTPREFUC
CAGE	UD	046	OTPCAGUC
RECURRING APPORTIONED UNIT COST	UC	025	OTPACRUC
NONRECURRING APPORTIONED UNIT COST	UC	025	OTPACNUC
TEST PLAN	UC	060	OTPCTPUC
UNIT UNDER TEST REMARKS	UF	499	UTEXPLUF
ESTIMATED TYPE CLASSIFICATION DATE			
(MANUAL ENTRY)			
PREPARED BY (MANUAL ENTRY)			

DATE (MANUAL ENTRY)

LSA-072

30.40 LSA-074 SUPPORT EQUIPMENT TOOL LIST REPORT SPECIFICATION

30.40.1 SELECTION. The LSA-074 summary is selectable by mandatory EIAC, Start LCN, LCN Type, UOC; and optional ALC, SERV DES, Stop LCN and ICC-1, ICC-2, ICC-3, ICC-4. Selectable ICCs are limited to Group B (See DED 177) for ICC-1, Group C for ICC-2, code AC for ICC-3, and Group A for ICC-4. If ICCs are not selected, then each part of the report will default to all allowable ICCs, respectively.

30.40.2 PROCESSING. The same qualifying criteria is used for all parts of the report. As a minimum, there must be at least one LCN within the selected range of LCNs with a Task Code (TASKCDCA) qualifying against the selected SERV DES (qualified by 4th position of the Task Code). LCNs are further qualified by requiring at least one CG table entry where the Support Equipment identified by Reference Number (TSREFNCG) and CAGE (TSCAGECG) matches against the selected ICCs (TSREFNCG and TSCAGECG are matched against SEREFNEA and SECAGEEA of table EA in order to access the ICC).

a. Part III, Modified Hand Tools, assumes that a breakdown of the tool exists within the LSAR. This part of the report can only be produced if an LCN, EIAC, and ALC exist on file for the tool and for subordinate items. If so, "Make From" items will include those which are subordinate to the tool in LCN structure and which have an Indenture Code greater than that of the tool (e.g., Tool Indenture Code + 1).

b. Within each part of the report, the support equipment item should only be listed once. If more than one qualified entry per part occurs for a piece of support equipment, then all information must be consolidated.

c. Page breaks are required between each part of the report.

30.40.3 REPORT FORMAT. See Figure 3.37

30.40.4 REPORT SEQUENCE. Each part of this report is sequenced by ascending Reference Numbers.

30.40.5 DATA SOURCES. The source of data appearing on the LSA-074 summary is depicted below by data table and element codes.

Report Header	Table Code	DED	Element Code
EIAC	XB	096	EIACODXA
LCN NOMENCLATURE	XB	201	LCNAMEXB
START LCN	XB	199	LSACONXB
ALC	XB	019	ALTLCNXB
TYPE	XB	209	LCNTYPXB
STOP LCN	XB	199	LSACONXB
UOC	XF	501	UOCSEIXC
SERV DES	CA	427	TASKCDCA
ICC - 1 (SELECTED) (GROUP "B" ICCs)	EA	177	SEICCDEA
ICC - 2 (SELECTED) (GROUP "C" ICCs)	EA	177	SEICCDEA
ICC - 3 (SELECTED) (ICC CODE "AC" ONLY)	EA	177	SEICCDEA
ICC - 4 (SELECTED) (GROUP "A" ICCs)	EA	177	SEICCDEA

PART I - TOOLS IN INVENTORY (HEADER)			
REFERENCE NUMBER	CG	337	TSREFNCG
CAGE	CG	046	TSCAGECG
ITEM NAME	HA	182	ITNAMEHA
ACQ DEC OFFICE	EA	002	AQDCOFEA
SERD NUMBER	EF	416	SERDNOEF
NSN AND RELATED DATA	HA	253	COGNSNHA
			SMMNSNHA
			MATNSNHA
			FSCNSNHA
			NIINSNHA
			ACTNSNHA
MAINT LEVEL	CG	427	TASKCDCA (3RD POSITION)
PART II - TOOLS IN INVENTORY BUT NOT ASSIGNED TO A GAINING UNIT (HEADER)			
SIASCN	EA	401	SIASCNEA
SKETCH	EA	383	SKETCHEA
PART III - MODIFIED HAND TOOLS (HEADER)			
MAKE FROM (HEADER)			
(INDENTURE CODE)	HG	162	INDCODHG
(TOOL LCN AND SUBORDINATE LCNs)	HG	199	LSACONXB
(EIAC)	HG	096	EIACODXA
(ALC)	HG	019	ALTLCNXB
REFERENCE NUMBER	HG	337	REFNUMHA
CAGE	HG	046	CAGECDXH
PART IV - PECULIAR TOOLS REQUIRING DEVELOPMENT (HEADER)			
REFERENCE NUMBER	CG	337	TSREFNCG
CAGE	CG	046	TSCAGECG

LSA-074

30.41 LSA-075 CONSOLIDATED MANPOWER, PERSONNEL AND TRAINING REPORT REPORT SPECIFICATION

30.41.1 SELECTION. The LSA-075 summary is selectable by mandatory EIAC, Start LCN, LCN Type, UOC; and optional SERV DES, ALC, Stop LCN, Maintenance Levels, Skill Specialty Code, and Available M-Hrs Peace/War Indicator (default is peace).

30.41.2 PROCESSING. The same qualifying criteria is used for both Parts I and II. Task codes are qualified by matching on selected SERV DES (4th position of task code) and on selected Maintenance Levels (3rd position task code). As a minimum, there must be an exact match in table XB with the selected EIAC, LCN, and ALC. If a Skill Specialty Code is selected, an exact match must be made in table GA or GB.

a. Section I, Manpower and Personnel Summary, requires at least one existing GA table and CD table on file.

b. Available Man-Hours of 0.00 are significant as opposed to blank values which depicts no data being on file for that element. If Actual Man-Hours can be calculated, then the Available Man-Hours will be printed even if it is blank.

c. Actual Man-Hours are calculated by summing all mean man-minutes (SUBMMMCD) for a given SSC at a given Maintenance Level across all applicable tasks at the Start LCN and all subordinate LCNs, then dividing by 60. Modified SSCs (MDCSSCGB) entries in Table CD take precedence over SSCs (SKSPCDGA).

d. Actual Quantity of an SSC at a given Maintenance Level can only be calculated correctly if a unique Person ID has been assigned to each maintenance person and that relationship is carried out for all tasks throughout the system at or subordinate to the Start LCN. If so, it is simply a matter of counting the different number of Person IDs for a given SSC at a given Maintenance Level. If not, the same Person ID could be assigned to two different personnel in different tasks, or the same person could be assigned different Person IDs from task to task. Either way, a correct value for Actual Quantity cannot be calculated.

e. Section II requires at least one existing GB table be on file.

f. A page break is required between sections.

30.41.3 REPORT FORMAT. See Figure 3.38

30.41.4 REPORT SEQUENCE. Section 1 is sequenced by ascending SSC, then by maintenance level within each SSC. Section 2 is sequenced by ascending Original SSC, then by ascending New SSC.

30.41.5 DATA SOURCES. The source of data appearing on the LSA-075 summary is depicted below by data table and element codes.

Report Header	Table Code	DED	Element Code
EIAC	XB	096	EIACODXA
LCN NOMENCLATURE	XB	201	LCNAMEXB
START LCN	XB	199	LSACONXB
TYPE	XB	203	LCNTYPXB
ALC	XB	019	ALTLCNXB
UOC	XF	501	UOCSEIXC
SERV DES	CA	427	TASKCDCA
MAINT LVLS (SELECTED)	CA	427	TASKCDCA
SSC (SELECTED) (EXISTING SSC)	GA	395	SKSPCDGA
(MODIFIED/NEW SSC)	GB	264	MDCSSCGB
AVAILABLE M-H PEACE/WAR (SELECTED)			
SECTION I - MANPOWER AND PERSONNEL SUMMARY (HEADER)			
LCN	CA	199	LSACONXB
ALC	CA	019	ALTLCNXB
LCN NOMENCLATURE	XB	201	LCNAMEXB
SSC	CD	387	SKSPCDGA
MAINTENANCE LEVEL	CA	427	TASKCDCA
AVAIL M-H	AE	028	AVAIMHAE
ACTUAL M-H (CALCULATED)			
AVAIL QTY	AE	324	QTYAVAAE
ACTUAL QTY (CALCULATED)			
SECTION II - NEW OR MODIFIED SKILL AND TRAINING REQUIREMENTS (HEADER)			
ORIGINAL SSC	GA	387	SKSPCDGA
ORIGINAL SLC	GA	386	SKLVCDGA
NEW/MOD SSC	GB	257	MDCSSCGB
NEW/MOD SLC	GB	386	MDSCLCGB
DUTY POSITION REQUIRING NEW/MOD SKILL	GB	092	DPRNRSGB
RECOMMENDED RANK/RATE/GRADE-MIL RANK	GB	330	RPPMILGB
RECOMMENDED RANK/RATE/GRADE-CIVIL GRADE	GB	330	RPPCIVGB
SECURITY CLEARANCE	GB	369	SCRSSCGB
TEST SCORE	GB	449	SSCTESGB
NEW OR MODIFIED SKILL REQUIREMENTS	GC	007	NMSNARGC
(NEW/MODIFIED SKILL NARRATIVE CODE OF A)	GC	256	NMSNCDGC
EDUCATIONAL QUALIFICATIONS	GC	094	NMSNARGC
(NEW/MODIFIED SKILL NARRATIVE CODE OF B)	GC	256	NMSNCDGC
SKILL JUSTIFICATION	GC	188	NMSNARGC
(NEW/MODIFIED SKILL NARRATIVE CODE OF C)	GC	256	NMSNCDGC
ADDITIONAL TRAINING REQUIREMENTS	GC	012	NMSNARGC
(NEW/MODIFIED SKILL NARRATIVE CODE OF D)	GC	256	NMSNCDGC
PHYSICAL AND MENTAL REQUIREMENTS (HEADER)			
LCN	GE	199	LSACONXB
ALC	GE	019	ALTLCNXB
TASK CD	GE	427	TASKCDCA
SUBTASK NO	GE	407	SUBNUMCB
PERSON ID	GE	288	SUBPIDCD
NARRATIVE	GE	372	PAMENRGE

LSA-075

30.42 LSA-076 CALIBRATION AND MEASUREMENT REQUIREMENT SUMMARY REPORT SPECIFICATION

30.42.1 SELECTION. The LSA-076 summary is selectable by mandatory EIAC, Start LCN, LCN Type, and UOC; and optional SERV DES, ALC and Stop LCN.

30.42.2 PROCESSING. As a minimum, at least one UB table must exist within the selection range of LCNs (UUTLCNUA) and have CMRS Recommended Code (UTCMRSUB) of "Y". LCNs are further qualified by matching the keys from table UA (EIAC, LCN, ALC, and LCN Type) against the same keys in table CA to determine if the Task Code qualifies against the selected SERV DES (4th position of Task Code). A general description of the logic necessary to generate this report follows:

a. Select first qualified LCN (Category I LCN). This LCN will be included in Contents For CMRS Summary Data section and Section 4.

b. Category II items are pulled from Table UG (SEREFNEA & SECAGEEA), matching keys against the Category I item keys from Table UB (LCN, ALC, Type). Search for Parameter Group Code(s) (PGC) associated with Category I LCN from Table UG (UUTPGCUG) and match against the corresponding CMRS Category II item's PGC from Table EC (PARGPCEC). This item will be included in the Table of Category II TMDE section (2) and Section 4 under Category II heading.

c. Identify Calibration Procedures for the selected Category II item (CALPROEC). This data will be included in the Table of Category II TMDE section and on Section 4, under Category III Calibration Equipment/Standards/Procedures in the Item Name block.

d. Category III items are pulled from Table UN (TGSREFUN & TGSCAGUN), matching keys with Category II Item's keys (SEREFNEA & SECAGEEA vs. SUTREFUM & SUTCAGUM). Pull all associated Category III items by matching the PGC of the Category II item (PARPGCEC) with the PGC of the Category III item (SEUPGCUN). This data will be included in Section 3, Table of Category III Calibration Equipment/Standards. It will also be included in Section 4 under the Category III heading, if Calibration Procedures for Category II items are not found (see 2.c. above). If a Calibration Procedure(s) exists for the Category II item, then that alone will be listed in Section IV under Category III heading.

e. Section IV - Identify each PGC associated with the Category I item's LCN and identify the corresponding Category II item as described in 2.b. above, then go to steps 2.c and 2d. If no other PGC exists for the Category I item, then proceed to the next qualified PGC associated with the category II item LCN and repeat steps 2c and 2d. If no other PGC exists for Category II item, repeat entire procedure for next qualified Category I LCN.

f. Page breaks are required following each section, and for each new Section 4 output (new Section 4 outputs are required for each Category I PGC for a given item and each new Category I LCN).

f. The "Page" in Part I is generated based on the page number that includes the first page of Section 4 information of the given Category I LCNs reported in Section 1. The first generated "Page" number will depend on the number of pages each of the first three sections takes up. For example, if Section 1 is one page long, Section 2 is two pages long, and Section 3 is one

page long, then the first generated "Page" number (for the first LCN by sequence) would be five (sum of Sections 1, 2, and 3 page numbers plus one). The "Page" numbers for the succeeding Section 1 LCNs is equal to the prior Category I item's "Page" number plus the total pages for Section IV of the prior Category I item (i.e., Section 4 for 1st item is 2 pages, "Page" = 5+2 = 7 for 2nd Category I item).

30.42.3 REPORT FORMAT. See Figure 3.39

30.42.4 REPORT SEQUENCE. All Category I items will be listed in Section I, then all Category II items will be listed in Section II before proceeding to Section III and listing all Category III items. Section IV must be sequenced according to the "Page" number listed in Section I for the corresponding Category I item. Section 1 is sequenced by ascending LCN values. Sections 2 and 3 are sequenced by ascending Reference Number and CAGE codes. Section 4 is based on the sequence of Section 1.

30.42.5 DATA SOURCES. The source of data appearing on the LSA-076 summary is depicted below by data table and element codes.

Report Header	Table Code	DED	Element Code
EIAC	XB	096	EIACODXA
LCN NOMENCLATURE	XB	201	LCNAMEXB
START LCN	XB	199	LSACONXB
ALC	XB	019	ALTLCNXB
TYPE	XB	203	LCNTYPXB
STOP LCN	XB	199	LSACONXB
UOC	XF	501	UOCSEIXC
SERV DES	CA	427	TASKCDCA
TABLE OF CONTENTS FOR CMRS SUMMARY DATA (HEADER)			
LCN	UB	199	UUTLCNUA
ALC	UB	019	UUTALCUA
ITEM NAME	HA	182	ITNAMEHA
REFERENCE NUMBER	HG	337	REFNUMHA
CAGE	HG	046	CAGECDXH
PAGE (GENERATED)			
TABLE OF CATEGORY II TMDE (HEADER)			
ITEM NAME	HA	182	ITNAMEHA
NSN	HA	253	FSCNSNHA
			NIINSNHA
REFERENCE NUMBER	UG	337	SEREFNEA
CAGE	UG	046	SECAGEEA
ICC	EA	177	SEICCDEA
MTBF	EA	229	SEMTBFEA
CALIBRATION REQ	EA	040	CALRQDEA
CALIBRATION INTVL	EA	037	CALINTEA
OPERATOR'S MANUAL	EA	278	OPRMANEA
CALIBRATION PROCEDURE	EC	039	CALPROEC
SERD	EF	416	SERDNOEF
O/M LEVEL RCCP	EA	277	RPRLVLEA
			CALLVLEA

			PCBLVLEA
TABLE OF CATEGORY III CALIBRATION EQUIPMENT STANDARDS (HEADER)			
ITEM NAME	HA	182	ITNAMEHA
NSN	HA	253	FSCNSNHA
			NIINSNHA
REFERENCE NUMBER	UN	337	TGSREFUN
CAGE	UN	046	TGSCAGUN
SECTION IV (HEADER)			
CATEGORY I - OPERATION/AIRBORNE EQUIPMENT (HEADER)			
LCN	UB	199	UUTLCNUA
ALC	UB	019	UUTALCUA
ITEM NAME	HA	182	ITNAMEHA
REFERENCE NUMBER	HG	337	REFNUMHA
CAGE	HG	046	CAGECDXH
AOR	AG	023	ANOPREAG
MB	CA	238	AORMSBCA
MTBF	BD	229	TEMTBFBD
PARAMETER	UG	284	UUTPARUG
S/O	UG	284	UUTPSOUG
I/O	UG	284	UUTPIOUG
R/V	UG	284	UUTPRVUG
RANGE FROM	UG	284	UUTPRFUG
RANGE TO	UG	284	UUTPRTUG
ACCURACY	UG	284	UUTPACUG
TASK CODE	CG	427	TASKCDCA
TASK FREQ	CA	429	TSKFRQCA
MEAN ELAP TIME	CA	224	MSDMETCA/
			PRDMETCA
CATEGORY II TMDE (HEADER)			
LCN	HG	199	LSACONXB
ALC	HG	019	ALTLCNXB
PARAMETER	EC	284	PARPAREC
I/O	EC	284	SPARIOEC
R/V	EC	284	PARRVCEC
RANGE FROM	EC	284	RNGFRMEC
RANGE TO	EC	284	RNGTOCEC
REFERENCE NUMBER	UG	337	SEREFNEA
CAGE	UG	046	SECAGEEA
ACCURACY	EC	284	PARACCEC
CATEGORY III CALIBRATION EQUIPMENT/ STANDARDS/PROCEDURES (HEADER)			
LCN	HG	199	LSACONXB
ALC	HG	019	ALTLCNXB
PARAMETER	UN	284	UTPAPAUN
I/O	UN	284	UTPAIOUN
R/V	UN	284	UTPARVUN
RANGE FROM	UN	284	UTRGFRUN
RANGE TO	UN	284	UTPRRTUN
REFERENCE NUMBER	UN	337	TGSREFUN
CAGE	UN	046	TGSCAGUN
ACCURACY	UN	284	UTPAACUN

LSA-076

30.43 LSA-077 DEPOT MAINTENANCE INTERSERVICE DATA SUMMARY REPORT SPECIFICATION

30.43.1 SELECTION. The LSA-077 summary is selected by mandatory LCN, TYPE and SERV DES, and optional ALC, STOP LCN, UOC and ORIGINATING COMMAND.

30.43.2 PROCESSING. In order to produce an LSA-077 summary at least one qualified depot (O/M Level "L" or "D") in Task Code (3d position) must be contained within the selected LCN range.

a. Part I contains a listing of Depot Repairable items qualified by either an "L" or "D" O/M level in the Task Codes documented against the LCN of the item.

b. Part II, section A, contains all support equipment listed against tasks matching the selected SERV DES within the selected LCN range found in table CG.

c. Part II, section B, contains all Facility Requirement that are documented against a Facility Category Code and Facility Name from table FE which have a Task Code SERV DES matching the selected Service and an O/M value of "L" or "D".

d. Part III of the report contains all Depot level support equipment items (from table CG) and all depot or "L" level tasks requiring the use of the support equipment.

The following formula applies.

$$\text{MAN-MINUTES} = \sum_{i=1}^{N} \text{SUBMMMCDx}$$

Where: N = Number of Subtasks of Task Code with Mean Minutes per Person Identifier (PID) of PIDx

30.43.3 REPORT FORMAT. See Figure 3.40

30.43.4 REPORT SEQUENCE. Part I is sequenced in ascending LCN. Within the LCNs tasks are sequenced by ascending Task Code. Part II section A is sequenced by ascending Reference Number and CAGE; section B is sequenced by ascending Facility Category Code and Facility Name. Part III is sequenced by ascending Reference Number and CAGE, within the SE tasks are sequenced in ascending LCN/ALC and Task Code, within Task Code, Person Ids are sorted in ascending Person Identifier Codes.

30.43.5 DATA SOURCE. The source of data appearing on the LSA-077 summary is depicted below by data table and element codes.

Report header	Table Code	DED	Element Code
EIAC	XB	096	EIACODXA
LCN NOMENCLATURE	XB	201	LCNAMEXB
START LCN	XB	199	LSACONXB
ALC	XB	019	ALTLCNXB

TYPE	XB	203	LCNTYPXB
STOP LCN	XB	199	LSACONXB
UOC	XF/XC	501	UOCSEIXC
SERV DES	AA	427	SERDESAA
ORIGINATING COMMAND (SELECTED)			
ITEM DESIGNATOR CODE	XC	179	ITMDESXC
CAGE	HA	046	CAGECDXH
REFERENCE NUMBER	HA	337	REFNUMHA
TOTAL SYSTEMS SUPPORTED	AA	454	TOSYSUAA
NAT STOCK NUMBER	HA	253	FSCNSNHA
	HA	253	NIINSNHA
LCN	CA	199	LSACONXB
ALC	CA	019	ALTLCNXB
REFERENCE NUMBER	HA	337	REFNUMHA
CAGE	HA	046	CAGECDXH
ENGRG DRAWING NO	HA	337	REFNUMHA
(IF RNCC=D)	HA	338	REFNCCHA
(OR ADDITIONAL REFERENCE NO)	HB	006	ADDREFHB
(IF RNCC=D)	HB	338	ADRNCCHB
DWC (DAC)	HA	086	DOCAVCHA
ITEM NAME	HA	182	ITNAMEHA
DAC	HA	086	DOCAVCHA
QPA	HG	316	QTYASYHG
QPEI	HG	317	QTYPEIHG
TASK CODE	CA	427	TASKCDCA
TASK IDENTIFICATION	CA	431	TASKIDCA
FREQUENCY	CA	430	TSKFRQCA
MB	CA	238	AORMSBCA
REQUIREMENT FOR FAC	CA	358	FTRNRQCA
TRN-EQ	CA	358	TRNRQCCA
TOOL	CA	358	TSEREQCA
ITEM FUNCTION	BB	180	RAMNARBB
[RAM CHARACTERISTICS NARRATIVE CODE(A)]	BB	341	RAMCNABB
PART II			
REFERENCE NUMBER	EA	337	SEREFNEA
CAGE	EA	046	SECAGEEA
SUPPORT EQUIPMENT FULL ITEM NAME	EA	412	FLITNMEA
GOVERNMENT DESIG	EA	149	GOVDESEA
SERD NUMBER	EF	416	SERDNOEF
ST	EF	404	STATUSEF
REV	EF	360	SRDREVEF
[SERD DATE OF REVISION (HIGHEST VALUE)]	EF	071	DTRVSBEF
FACILITY CATEGORY CODE	FE	115	FACCCDFA
FACILITY NAME	FE	118	FACNAMFA
[TASK CODE (O/M LEVEL = D, L)]	FE	427	TASKCDCA
FACILITY REQUIREMENT	FD	108	NMFNARFD
[NEW OR MODIFIED FACILITY NARRATIVE CODE (E)]	FD	255	NMFNCDFD

PART III

CFE GFE	EA	056	CFEGFEEA
YEAR FIELD	EA	518	YRFLDGEA
TOTAL QUANTITY AUTHORIZED	ED	399	SEQTYAED
NONRECURRING COST			
DEVELOPMENT	EA	153	HDWRPREA
DESIGN	EA	080	DSNPRCEA
PASS-THRU	EA	285	PASTHREA
ILS	EA	170	ILSPRCEA
RECURRING	EA	332	RCURCSEA
CONDITION	CA	428	TCONDACA
	CA	428	TCONDBCA
	CA	428	TCONDCCA
MAN-HOURS	CA	225	MSDMMHCA
	CA	225	PRDMMHCA
ELAPSED TIME	CA	224	MSDMETCA
	CA	224	PRDMETCA
PERSON ID	CD	288	SUBPIDCD
SKILL SPEC CODE	CD	387	SKSPCDGA
SKILL LEVEL CODE	GA	386	SKLVCDGA
MAN-MINUTES (CALCULATED)	CD	226	SUBMMMCD

LSA-077

30.44 LSA-078 HAZARDOUS MATERIAL SUMMARY REPORT SPECIFICATION

30.44.1 SELECTION. The LSA-078 summary is selected by mandatory LCN and TYPE, and optional SERV DES, ALC, STOP LCN, and UOC.

30.44.2 PROCESSING. In order to qualify for LSA-078 summary, an LCN/task code must be contained within the selected LCN range/Serv Des Selection. Provisioned items for qualified LCN/Tasks (table CI) are further qualified by having entries in either Hazardous Storage, Waste Storage or Disposal Costs. COMPUTED QUANTITY is calculated by multiplying the TASK FREQ times the QTY/TASK. TOTAL QUANTITY REQUIRED is calculated by summing all COMPUTED QUANTITY for a given Reference Number and CAGE.

30.44.3 REPORT FORMAT. See Figure 3.41

30.44.4 REPORT SEQUENCE. The LSA-078 summary is sequenced by ascending CAGE and Reference Number. Within each Reference Number, tasks are sorted in ascending LCN/ALC and Task Code.

30.44.5 DATA SOURCE. The source of data appearing on the LSA-078 summary is depicted below by data table and element codes.

Report header	Table Code	DED	Element Code
EIAC	HG	096	EIACODXA
ITEM NAME	HA	182	ITNAMEHA
START LCN	HG	199	LSACONXB
ALC	HG	019	ALTLCNXB
TYPE	HG	203	LCNTYPXB
STOP LCN	HG	199	LSACONXB
UOC	HO/XC	501	UOCSEIXC
SERVIC DES	CA	427	TASKCDCA
CAGE	HG	046	CAGECDXH
REFERENCE NUMBER	HG	337	REFNUMHA
ITEM NAME	HA	182	ITNAMEHA
MATERIALS STORAGE COST	HA	156	HMSCOSHA
WASTE STORAGE COST	HA	158	HWSCOSHA
WASTE DISPOSAL COST	HA	157	HWDCOSHA
UM	HA	491	UNITMSHA
UM PRICE	HE	492	UMPRICHE
[PROVISIONING UM PRICE]	HE	314	PROUMPHE
LCN	CI	199	TSKLCNCI
ALC	CI	019	TSKALCCI
TASK CODE	CI	427	TSKTCDCI
TASK IDENTIFICATION	CA	431	TASKIDCA
TASK FREQ	CA	430	TSKFRQCA
MB	CA	238	AORMSBCA
COMPUTED QUANTITY (COMPUTED)			
QTY/TASK	CI	319	PQTYTKCI
TOTAL QTY RECOMMENDED	HG	453	TOTQTYHG
[LCN]	CI	199	PROLCNCI
[ALC]	CI	019	PROALCCI
[CAGE]	CI	046	PROCAGCI
[REFERENCE NUMBER]	CI	337	PROREFCI
TOTAL QUANTITY REQUIRED (COMPUTED)			

LSA-078

30.45 LSA-080 BILL OF MATERIALS REPORT SPECIFICATION

30.45.1 SELECTION. The LSA-080 summary is selected based on the Sequence option by either (LCN sequence) mandatory EIAC, LCN, and UOC, or (PLISN sequence) PCCN and UOC; and optional ALC (default is all ALCs), STOP LCN (default is all LCNS subordinate to, and including, the start LCN), and LCN-CODE. PLISN Sequence takes precedence over LCN sequence.

a. If the report is selected by LCN, then the LCN-CODE should specify if the type of LCNs are either: Classical or Modified Classical.

30.45.2 PROCESSING. In order to produce an LSA-080 summary at least one qualified row of information must be within the specified PCCN or LCN range.

a. The LSA-080 report, Part I, identifies parts to the assemblies of which they are contained, in order that the parts documentation in the data tables can be checked for completeness against the assembly drawings. Each assembly will only show parts one indenture lower;, e.g., a "C" indentured assembly will only show "D" indentured items. These items may be both repair parts and spares. If the item is a spare, a separate page breakdown of the item will appear on the report.

b. If the report is selected by LCN, then either the LCN structure, or LCN-Indenture Code and the LCN "values" are used to place items to assemblies. All items sorted in ascending LCN sequence with either an LCN-IC or structure value of one indenture greater are placed as items to an assembly, until within the sorted range another item is found at the same indenture level, or greater than the assembly. Items at more than one indenture greater are "grouped" with the item (now assembly) immediately preceding this indenture change. ALC items are "grouped" together as an assembly/item set, if there is no indenture level missing between them. If an ALC item does not have a matching ALC it is then "grouped" to the blank, or basic assembly item.

c. If PCCN is selected, then PLISN and IC are used to sort items to assemblies, with all items sorted in ascending PLISN sequence of one IC greater than the IC of the assembly PLISN record placed below the assembly PLISN until an IC is encountered that is equal to or greater than the assembly IC. The NHA PLISN is a value found in table HH which is one indenture less than the item with a value closest to the item's PLISN value and without an NHA-Indicator of "*".

b. The part II is produced automatically when the LSA-080 report is requested and data errors are found. The report identifies the items having erroneous data, and provides a message describing the type of error found. The errors that the edit routine will detect are:

(1) Error Code 1. If an item is SMR coded: with "Z", or "B" in the fourth position, but parts are contained below this item with source codes other than K- or XA, then this error is output. (appears on part I with asterisks by both the assembly and/or part location.

(2) Error Code 2. An item does not have an identifiable next higher assembly, e.g., if the indenture structure lists the item as an "F" and the logical NHA by file sort is a "D". then this error is output (part II only).

(3) Error Code 3. No indenture Code. This item appears on part II only, when the selection is made by PCCN. If the selection is by LCN, then the item is shown on both parts I and II.

(4) Error Code 4. An item whose Source, Maintenance and Recoverability (SMR) code is blank or incomplete (without 3/4th positions).

(5) Error Code 5. If LCN-Code is "CLASSICAL" and duplicate LCNs are encountered, each duplicate receives this error message. The item(s) will appear on both parts I and II.

(6) Error Code 6. Allowable recoverability codes are as follows based on the repair code:

If position 4 is:	the position 5 must be:
Z	Z, A
O (2, 3, 4, 5, 6) Navy only	O, F, H, G, D, L, A
F	F, H, G, D, L, A
H H, G, D, L, A	
G	G, D, L, A
D	D, L, A
L	D, L, A
B	Z, A

(7) An assembly is SMR coded repairable (e.g., SMR-4 is not Z or B) but has no parts breakout beneath it.

c. Items having the errors codes 2 and 3 with PCCN selection are listed on the LSA-080 part II only. Other errors will be flagged with "**" to the right of the line the error appears in part I and also displayed in part II. The error messages will be displayed on part II.

30.45.3 REPORT FORMAT. See Figure 3.42

30.45.4 REPORT SEQUENCE. The report is sequenced in either ascending assembly REFERENCE NUMBER and CAGE (ASCII sequence) or in ascending assembly PLISN (EBCDIC sequence) based on the selection option specified in SEQ OPTION.

30.45.5 DATA SOURCE. The source of data appearing on the LSA-080 summary is depicted below by data table and element codes.

Report header	Table Code	DED	Element Code
EIAC	HG	096	EIACODXA
ITEM NAME	HA	182	ITNAMEHA
START LCN	HG	199	LSACONXB
ALC	HG	019	ALTLCNXB
TYPE	HG	203	LCNTYPXB
STOP LCN	HG	199	LSACONXB
UOC	XC	501	UOCSEIXC
UOC is matched VIA the HO Table			
SEQ OPT (SELECTED)			
LCN STRUCTURE	XA	202	LCNSTRXA

LCN CD (SELECTED)			
PCCN	XC	307	PCCNUMXC
LINE (GENERATED)			
PLISN	HG	309	PLISNOHG
	XC	309	PLISNOXC
Pull PLISN from HG for sub assemblies and from XC for system/end items			
IC	HG	162	INDCODHG
NHA-PLISN	HH	258	NHAPLIHH
REFERENCE NUMBER	HG	337	REFNUMHA
CAGE	HG	046	CAGECDXH
ITEM NAME	HA	182	ITNAMEHA
SMR	HG	389	SMRCODHG
QPA	HG	316	QTYASYHG
	XC	317	QTYASYXC
LCN-IC	XB	200	LCNINDXB
MRR-I	HG	211	MRRONEHG
ERROR (GENERATED)			

LSA-080

30.46 LSA-085 TRANSPORTABILITY SUMMARY REPORT SPECIFICATION

30.46.1 SELECTION. The LSA-085 summary is selectable by mandatory EIAC, Start LCN, LCN TYPE, and UOC; and optional ALC (default is all ALCs) and Stop LCN (default is all LCNs subordinate to, and including, the start LCNs). The report has no optional selections.

30.46.2 PROCESSING. The report will pull information from the JA, JB, JC, JD, JE, JF, HA, HG, AND XH TABLES against the specific LCN range. If Type is (F) then NSN and Related Data, CAGE, and Reference Number may not be able to be pulled from there respective tables. The Reference Number is wrapped at 16 positions.

30.46.3 REPORT FORMAT. See Figure 3.43

30.46.4 REPORT SEQUENCE. The report is sequenced by ascending value of the LCN.

30.46.5 DATA SOURCES. The source of the data appearing on the LSA-085 summary is depicted below by data table and element codes.

Report Header	Table Code	DED	Element Code
EIAC	XB	096	EIACODXA
LCN NOMENCLATURE	XB	201	LCNAMEXB
START LCN	XB	199	LSACONXB
ALC	XB	019	ALTLCNXB
TYPE	XB	203	LCNTYPXB
STOP LCN	XB	199	LSACONXB
UOC	XF/XC	501	UOCSEIXC
REFERENCE NUMBER	HG	337	REFNUMHA
CAGE	HG	046	CAGECDXH
NATIONAL STOCK NUMBER			
NSN COGNIZANCE CODE	HA	253	COGNSNHA
NSN MATERIEL CONTROL CODE	HA	253	MATNSNHA
NSN FEDERAL SUPPLY CLASSIFICATION	HA	253	FSCNSNHA
NSN NATIONAL ITEM IDENTIFICATION NUMBER	HA	253	NIINSNHA
NSN SPECIAL MATERIAL IDENTIFICATION CODE/ MATERIEL MANAGEMENT AGGREGATION CODE	HA	253	SMMNSNHA
NSN ACTIVITY CODE	HA	253	ACTNSNHA
CONTRACT NUMBER	JA	055	CONNUMJA
REVISION DATE	JA	071	TRCHRDJA
TYPE ACQ	XA	478	WSTYAQXA
THEATER OF OPER	JA	451	TRCHTHJA
CONTRACTOR NAME AND LOCATION (HEADER)			
NAME	XH	047	CANAMEXH
STREET	XH	047	CASTREXH
CITY	XH	047	CACITYXH
STATE	XH	047	CASTATXH
NATION	XH	047	CANATNXH
POSTAL ZONE	XH	047	CAPOZOXH
PROCUREMENT SCHEDULE (HEADER)			
FY	JE	145	TRAFYRJE
1QTY	JE	298	FIQPQTJE
2QTY	JE	298	SQPQTYJE
3QTY	JE	298	TQPQTYJE

4QTY	JE	298	FQPQTYJE
MILITARY UNIT TYPE	JA	242	MILUNTJA
PROPER SHIPPING NAME	JA	304	PROPSNJA
NOFF	JA	260	NOPRFFJA
NET EXP WEIGHT	JA	254	NETEXWJA
SPEED	JA	400	SPSPEDJA
TOWING SPEED	JA	455	TWSPEDJA
SECT ID	JA	366	SECTIDJA
--SHIPPING MODES--			
FREIGHT CLASSIFICATION	JB	146	FRCLASJB
SHIPPING CONFIGURATION	JB	380	SHPCONJB
CONTAINER LENGTH	JB	053	CONLENJB
CONTAINER TYPE	JB	054	CONTYPJB
RAIL USE	JB	326	RAILUSJB
RAIL TRANSPORTATION COUNTRY OR COUNTRIES	JB	325	RAILTCJB
HIGHWAY PRIME MODEL (HEADER)			
LOAD	JB	250	HIPRMLJB
TYPE	JB	251	HIPRMTJB
HIGHWAY ALTERNATE MODEL			
LOAD	JB	250	HALTMLJB
TYPE	JB	251	HALTMTJB
SHIP ITEM DESIGNATOR	JB	469	TRITDRJB
(TRANSPORTATION CHARACTER MODE TYPE (F))	JB	464	TRCHMTJB
DECK STOWAGE	JB	072	SDECKSJB
LIGHTERAGE ITEM DESIGNATOR	JB	469	TRITDRJB
(TRANSPORTATION CHARACTER MODE TYPE (D))	JB	464	TRCHMTJB
DECK STOWAGE	JB	072	SDECKSJB
AIRCRAFT ITEM DESIGNATOR	JB	469	TRITDRJB
(TRANSPORTATION CHARACTER MODE TYPE (A))	JB	464	TRCHMTJB
EXTERNAL OR INTERNAL LOAD INDICATOR	JB	104	EOILINJB
HELICOPTER ITEM DESIGNATOR	JB	469	TRITDRJB
(TRANSPORTATION CHARACTER MODE TYPE (B))	JB	464	TRCHMTJB
EXTERNAL OR INTERNAL LOAD INDICATOR	JB	104	EOILINJB
HELICOPTER MISSION REQUIREMENTS (HEADER)			
ALTITUDE	JB	159	HMATLRJB
DISTANCE	JB	159	HMDISRJB
PAYLOAD	JB	159	HMPAYRJB
TEMPERATURE	JB	159	HMTMPRJB
TIME	JB	159	HMTIMRJB
--TRANSPORTED END ITEM--			
SHIPPING WEIGHT EMPTY	JC	381	SHWEEMJC
SHIPPING WEIGHT LOADED	JC	381	SHWELDJC
OPERATIONAL WEIGHT EMPTY	JC	276	OPWEEMJC
MIL LOAD CLASS EMP	JC	241	HICLNEJC
OPERATIONAL WEIGHT LOADED	JC	276	OPWELDJC
MIL LOAD CLASS LOADED	JC	241	HICLNLJC
CREST ANGLE	JC	063	CREANGJC
AXLE LENGTH (HEADER)			
FRONT IN	JC	029	TWALFIJC
FRONT OUT	JC	029	TWALFOJC
REAR IN	JC	029	TWALRIJC
REAR OUT	JC	029	TWALROJC
MOBILITY TYPE	JC	249	MOBTYPJC
TRANSPORTED CONFIGURATION NUMBER	JC	473	TRCONMJC

TRACKED GROUND PRESSURE	JC	456	TRGRPRJC
TRACKED PADS TOUCHING	JC	458	TRNUPTJC
TRACKED ROAD WHEEL WEIGHT	JC	459	TRRWWTJC
TRACKED PAD SHOE AREA	JC	457	TRPSARJC
UM	JC	491	TPSAUMJC
NUMBER OF SKIDS	JC	264	SNUMSKJC
SKID AREA	JC	384	SDSICGJC
UM	JC	491	SKADUMJC
MOBILITY TYPE	JC	249	MOBTYPJC
TRANSPORTED CONFIGURATION NUMBER	JC	473	TRCONMJC
WHEELED INFLATION PRESSURE	JC	507	WHINPRJC
WHEELED NUMBER OF PLIES	JC	508	WHNUPLJC
WHEELED NUMBER TIRES	JC	509	WHNUTIJC
WHEELED TIRE LOAD RATINGS	JC	510	WHTLDRJC
WHEELED TIRE SIZE	JC	512	WHTIFTJC
WHEELED WEIGHT RATINGS	JC	513	WHWERAJC
MOBILITY TYPE	JC	249	MOBTYPJC
TRANSPORTED CONFIGURATION NUMBER	JC	473	TRCONMJC
WHEELED TIRE REQUIREMENTS	JD	511	WHTRLOJD
TRANSPORTED END ITEM NARRATIVE CODE OF (A)	JD	474	TREINCJD
SKID REMARKS	JD	385	WHTRLOJD
TRANSPORTED END ITEM NARRATIVE CODE OF (B)	JD	474	TREINCJD
TURNING INFORMATION	JD	477	WHTRLOJD
TRANSPORTED END ITEM NARRATIVE CODE OF (C)	JD	474	TREINCJD
WHEELED AXLE AND SUSPENSION REMARKS	JD	506	WHTRLOJD
TRANSPORTED END ITEM NARRATIVE CODE OF (D)	JD	474	TREINCJD
TRANSPORTED OTHER EQUIPMENT	JD	475	WHTRLOJD
TRANSPORTED END ITEM NARRATIVE CODE OF (E)	JD	474	TREINCJD
TRANSPORTATION SHOCK VIBRATION REMARKS	JF	382	TRANARJF
(TRANSPORTATION NARRATIVE CODE OF (A))	JF	475	TRANCDJF
LIFTING AND TIEDOWN REMARKS	JF	192	TRANARJF
(TRANSPORTATION NARRATIVE CODE OF (B))	JF	474	TRANCDJF
TRANSPORTATION PROJECTION REMARKS	JF	471	TRANARJF
(TRANSPORTATION NARRATIVE CODE OF (C))	JF	474	TRANCDJF
REGULATORY REQUIREMENTS	JF	340	TRANARJF
(TRANSPORTATION NARRATIVE CODE OF (D))	JF	474	TRANCDJF
TRANSPORTATION REMARKS	JF	472	TRANARJF
(TRANSPORTATION NARRATIVE CODE OF (E))	JF	474	TRANCDJF
SPECIAL SERVICE AND EQUIPMENT	JF	398	TRANARJF
(TRANSPORTATION NARRATIVE CODE OF (F))	JF	474	TRANCDJF
SECTIONALIZED REMARKS	JF	368	TRANARJF
(TRANSPORTATION NARRATIVE CODE OF (G))	JF	474	TRANCDJF
TRANSPORTED TO AND FROM	JF	476	TRANARJF
(TRANSPORTATION NARRATIVE CODE OF (H))	JF	474	TRANCDJF
ENVIRONMENTAL CONSIDERATIONS	JF	099	TRANARJF
(TRANSPORTATION NARRATIVE CODE OF (I))	JF	474	TRANCDJF
MILITARY DISTANCE CLASSIFICATION	JF	240	TRANARJF
(TRANSPORTATION NARRATIVE CODE OF (J))	JF	474	TRANCDJF
UNUSUAL AND SPECIAL REQUIREMENTS	JF	500	TRANARJF
(TRANSPORTATION NARRATIVE CODE OF (K))	JF	474	TRANCDJF
VENTING AND PROTECTIVE CLOTHING	JF	504	TRANARJF
(TRANSPORTATION NARRATIVE CODE OF (L))	JF	474	TRANCDJF
DISASTER RESPONSE FORCE REQUIREMENTS	JF	082	TRANARJF
(TRANSPORTATION NARRATIVE CODE OF (M))	JF	474	TRANCDJF

LSA-085

30.47 LSA-126 LCN/PCCN INDENTURE STRUCTURE TREE REPORT SPECIFICATION

30.47.1 SELECTION. The LSA-126 summary is selected by either (LCN sequence) mandatory EIAC, LCN or (PLISN sequence) PCCN; and optional ALC (default is all ALCs), STOP LCN (default is all LCNS subordinate to, and including, the start LCN) and UOC (default is all UOCs). PLISN Sequence takes precedence over LCN sequence.

30.47.2 PROCESSING. In order to produce an LSA-126 summary at least one row of HG information must be contained within the selected LCN/PCCN range.

a. If the report is selected by LCN then items are sequenced for the report by ascending LCN. Identical ALCs (other than 00) are sorted and "grouped" based on no break in the indenture structure of the items. If a break in structure occurs, then these items are sorted back to the basic or "blank" ALC. Items are placed in the report indenture breakdown by the LCN-IC (XB).

b. If the report is selected by PCCN, then items are sequenced by ascending PLISN and placed in indenture breakdown by the Provisioning Indenture Code (HG/XC)

30.47.3 REPORT FORMAT. See Figure 3.44

30.47.4 REPORT SEQUENCE. Report is sequenced by ascending LCN/ALC for LCN range selection; and by PLISN for PCCN selection.

30.47.5 DATA SOURCE. The source of data appearing on the LSA-126 summary is depicted below by data table and element codes.

Report header	Table Code	DED	Element Code
EIAC	HG	096	EIACODXA
ITEM NAME	HA	182	ITNAMEHA
START LCN	HG	199	LSACONXB
ALC	HG	019	ALTLCNXB
TYPE	HG	203	LCNTYPXB
STOP LCN	HG	199	LSACONXB
UOC	XC	501	UOCSEIXC
UOC is match VIA the HO table			
LCN STRUCTURE	XA	202	LCNSTRXA
LCN CD (SELECTED)			
PCCN	HG	307	PCCNUMHG
ITEM NAME	HA	182	ITNAMEHA
NSN	HA	253	FSCNSNHA
	HA	253	NIINSNHA
SMR	HG	389	SMRCODHG
LCN-IC	XB	200	LCNINDXB
PLISN	HG	309	PLISNOHG
	XC	309	PLISNOXC
CAL-IC (GENERATED)			
REFERENCE NUMBER	HG	337	REFNUMHA
CAGE	HG	046	CAGECDXH
IC	HG	162	INDCODHG

LSA-126

30.48 LSA-151 PROVISIONING PARTS LIST INDEX REPORT SPECIFICATION

30.48.1 SELECTION. The LSA-151 summary is selected by mandatory LCN, and optional ALC, STOP LCN, UOC, SEQ, PCCN and PTD-SEL

30.48.2 PROCESSING. In order to produce an LSA-151 summary at least one row of information must be contained within the selected LCN range/PCCN. When selected by LCN, this report may be across multiple PCCNs. The report can be generated in reference number, LCN, or PLISN sequence. Additional data which further describes the item at its usage level(s) are provided for the user's information (i.e., item name, quantities, SMR, etc.).

a. Next Higher Assembly Reference Number and CAGE is determined by the item's NHA PLISN with an "N" NHA Indicator, and one indenture less than the item. The HG Item's keys are compared to HH keys to find the NHA PLISN. A search for this PLISN is conducted in the HG table to find the NHA. Both the PLISN and NHA PLISN must have the same t PCCN (found in XC table through HO). The HG table key Reference Number and CAGE containing the PLISN matched to the NHA PLISN is the NHA reference number and CAGE.

30.48.3 REPORT FORMAT. See Figure 3.45

30.48.4. REPORT SEQUENCE. The report is sequenced by either ascending PLISN or Reference Number based on the SEQ selected.

30.48.5 DATA SOURCE. The source of data appearing on the LSA-151 summary is depicted below by data table and element codes.

Report header	Table Code	DED	Element Code
EIAC	HG	096	EIACODXA
ITEM NAME	HA	182	ITNAMEHA
START LCN	HG	199	LSACONXB
ALC	HG	019	ALTLCNXB
TYPE	HG	203	LCNTYPXB
STOP LCN	HG	199	LSACONXB
UOC	HO/XC	501	UOCSEIXC
PCCN	XC	307	PCCNUMXC
SEQ (SELECTED)			
PTD-SEL			
PPL	HG	313	PPLPTDHG
SFPPL	HG	313	SFPPTDHG
LLTIL	HG	313	LLIPTDHG
RIL	HG	313	RILPTDHG
ISIL	HG	313	ISLPTDHG
TTEL	HG	313	TTLPTDHG
CBIL	HG	313	CBLPTDHG
PCL	HG	313	PCLPTDHG
SCPL	HG	313	SCPPTDHG
ARA	HG	313	ARAPTDHG
ARB	HG	313	ARBPTDHG
CAGE	HG	046	CAGECDXH
REFERENCE NUMBER	HG	337	REFNUMHA

PCCN	XC	307	PCCNUMXC
PLISN	HG	309	PLISNOHG
	XC	309	PLISNOXC
TOC	HG	481	TOCCODHG
	XC	481	TOCCODXC
LCN	HG	199	LSACONXB
ALC	HG	019	ALTLCNXB
IC	HG	162	INDCODHG
ITEM NAME	HA	182	ITNAMEHA
QPA	HG	316	QTYASYHG
	XC	316	QTYASYXC
QPEI	HG	317	QTYPEIHG
	XC	317	QTYPEIXC
UM	HA	491	UNITMSHA
SMR	HG	389	SMRCODHG
EC	HG	100	ESSCODHG
PLT	HA	299	PRDLDTHA
NEXT HIGHER ASSEMBLY			
CAGE	HG	046	CAGECDXH
REFERENCE NUMBER	HG	337	REFNUMHA
[NHA PLISN]	HH	258	NHAPLIHH

LSA-151

30.49 LSA-152 PLISN ASSIGNMENT/REASSIGNMENT REPORT SPECIFICATION

30.49.1 SELECTION. The LSA-152 summary is selectable by mandatory EIAC, and either Start LCN or PCCN. There is a wide range of options when using the PLISN assignment routine:

a. NHA PLISNs and/or ICs may be assigned to the PMF, if this option is selected on the 152 report.

(1) If the file is constructed using the classical/modified classical LCN assignment technique, the IC may be assigned, provided the LCN structure exists in the XA table or the indenture code in the XB table. Asterisk ICs may be assigned to the parts file based on the ICC of "9" representing kit components being previously assigned (Table HG). An option is also available to assign a constant NHA PLISN indicator of "N" against each NHA PLISN assigned to the HH table.

(2) When a sequential LCN assignment method is utilized, the LCN structure field is left blank in the XA table, and the LCN-ICs must be entered on the XB table in order to assign NHA PLISN. The IC (Table HG) should be that of the provisioned end item, while the LCN-IC should be related to the system level in the LSAR.

b. When assigning PLISNs for a subordinate end item the IC is not assigned to the HG table. For example, a separately provisioned end item at the "C" indenture to the system (LCN-IC,Table XB) will have an IC of "A" come out on the LSA-152, and LSA-036 reports but will keep its IC of "C" assigned under the system end item assignment. All components to the subordinate end item will then have their IC assigned as before. For example, a "D" indenture item under the "C" indenture subordinate end item will have a "B" IC assigned when PLISN assignment is run on the "C" indenture subordinate end item.

c. PLISNs may be assigned only to items that qualify by PTD Selection Code for a specified Provisioning List (PL) or lists (Table HG).

d. PLISNs may be assigned in either topdown (LCN) or Reference Number sequence. When PLISNs are assigned in Reference Number sequence, the system will lock out the option to assign NHA PLISNs/ICs. Default is topdown.

e. PLISNs may be assigned as either all alphabetic, alphanumeric, numeric, or, first position alphabetic, then second through fourth position numeric. Default is alphanumeric.

f. A starting PLISN value may be specified on the report selection card.

g. PLISN values of "AAAA" through "AAAHZ" may be reserved for the system level and separately provisioned end items (Model Reserve). If this option is selected, a starting model PLISN value may be specified (within the given range). If none is selected, the first model PLISN assignment will be "AAAA".

h. PLISNs may be assigned to overlay old PLISN values established in the file; to overlay PLISNs and to move the old PLISN value to the Prior Item PLISN field; or to assign PLISNs only to items that do not have a PLISN value already established (insert) (Insert/Overlay selection on report). If the insert option is chosen, PLISNs already assigned to the file must match with the LCN structure or LCN-ICs of the selected LCN range. The Prior Item PLISN may be added as a separate selection from the I/O selection as shown in Appendix B of -2B.

i. It is possible to skip PLISN values between the assigned PLISNs for future use, when the item is impacted by Design Change Notice or Engineering Change Proposals, or for when the item having PLISNs assigned is not fully broken down to piece part level. This option cannot be utilized if the insert option (paragraph h) is in use. PLISN gaps may be as great as 1,121.

j. PLISNs may be assigned to items based upon the Data Status Code (Table HG) contained against the qualified item. This can be useful when performing incremental provisioning on an LSAR that is not fully mature.

k. LCN structure and System 036 are no longer selection options.

30.49.2 PROCESSING. This summary provides a listing, by reference number, of PLISN, Indenture Code (IC), NHA PLISN, and PRIOR ITEM PLISN, assigned by the LSAR system based on parameters of the assignment select card. The summary will depict the file content before and after the assignments or reassignments are made (PLISNs are assigned using the EBCDIC collating sequence). As an option, this report can be used to assign provisioning related control and reference data to the LSAR Parts Master File. The format is contained on figure 60. Spacing between rows and columns is not critical on this report.

a. It is necessary that the LSAR be properly structured using either a uniform (nonbroken) LCN structure when applying either a classical or modified classical LCN assignment technique; or an LCN-IC (Table XB) assignment without missing or unlinked indenture levels, when LCNs are assigned using the sequential method. Using the LSA-080 report, the analyst can review the file for correct structure, or by using the LSA-152 report detect error conditions in file structure.

b. The LSA-152 report consists of two parts. Part I will only be output when an error in file structure is encountered, or when the PLISN assignment (with selected PLISN spacing) exceeds the limit of 9999 for the proposed assigned PMF candidates. When these occur, the error location in the file is depicted on the report with a display of the unlinked or remaining file segment. If an error condition does occur, the LSA-152 process will not assign any PLISNs, but will continue processing to determine whether additional error conditions exist in the file. Validated LSAR systems will be required to have the capability to produce an error listing for the LSA-152 report. However, the format, messages and explanation of those messages for the error listing is vendor dependent. Part II of the report reflects the results of the PLISN assignment/reassignment; only a Part I or a Part II will be produced in a processing cycle. Also, PLISN assignment must occur as an exclusive cycle.

c. The report selection for PLISN assignment occurs within a PCCN and optionally Start and Stop LCN range. ALC is not a selection option. Alternate LCNs must be considered when assigning the basic LCN PLISNs because alternates may have basic items as NHAs. A row in table HO creates the end item (XC) to part application (HG) relationship. One HG row cannot be related to multiple PCCNs except when the item is a subordinate end item. When the item is a subordinate end item, HO would have one row depicting the end item relationship (end item and item LCN-ALCs are the same), and one or more rows showing the relationship to the system. Having the end items located in the XC table, and the fact that no other item except a subordinate end item can be linked to more than one PCCN, makes the suppression indicator code obsolete.

d. Since there are unlimited "correct" structuring techniques using the ALC, there is no system edit to detect errors in file structure when the ALC is utilized, other than missing an indenture level when the ALC is being sequenced to the "basic" LCN structure. ALC assignment errors, therefore, can only be detected by a manual review of the LSA-152 or LSA-080 reports.

30.49.3 REPORT FORMAT. See Figure 3.46

30.49.4 REPORT SEQUENCE. Part II of this summary is sequenced by ascending

PLISN numbers. PLISNs can be assigned in topdown (LCN) sequence or Reference Number sequence.

30.49.5 DATA SOURCES. The source of data appearing on the LSA-152 summary is depicted below by data table and element codes.

Report Header	Table Code	DED	Element Code
EIAC	XB/HG	096	EIACODXA
START LCN	XB/HG	199	LSACONXB
STOP LCN	XB/HG	199	LSACONXB
PCCN	XC	307	PCCNUMXC
PTD SELECT (SELECTED)	HG	313	
STATUS (SELECTED)	HG	070	DATASCHG
INSERT/OVERLAY (SELECTED THROUGHPUT)			
SEQ METHOD (SELECTED) (LCN/REF NUMBER)	XB/HA		
NHA PLISN/IND CODE (SELECTED)			
PLISN TYPE (SELECTED)			
START PLISN (SELECTED)	XC/HG	309	PLISNOXC
			PLISNOHG
PLISN GAP (SELECTED)			
MODEL PLISN (SELECTED)			
REFERENCE NUMBER	HG	337	REFNUMHA
CAGE	HG	046	CAGECDXH
LCN	XB	199	LSACONXB
ALC	XB	019	ALTLCNXB
PLISN	XC/HG	309	PLISNOXC
			PLISNOHG
IND CODE	HG	162	INDCODHG
NHA PLISN	HH	258	NHAPLIHH
PRIOR ITEM PLISN	HG	297	PIPLISHG
OLD RECORD DATA			
PLISN	XC/HG	309	PLISNOXC
			PLISNOHG
IND CD	HG	162	INDCODHG
NHA PLISN	HH	258	NHAPLIHH
SAME AS PLISN	HG	364	SAPLISHG
PRIOR ITEM PLISN	HG	297	PIPLISHG
LCN IC	XB	200	LCNINDXB

LSA-152

30.50 LSA-154 PROVISIONING PARTS BREAKOUT SUMMARY REPORT SPECIFICATION

30.50.1 SELECTION. The LSA-154 summary is selected by either a mandatory LCN or REFERENCE NUMBER and CAGE, and optional ALC, STOP LCN, UOC, CTIC1, CTIC2, SRC, and PART.

30.50.2 PROCESSING. In order to produce an LSA-154 summary at least one row of information (table HG) qualified by specified CTICs or Source Codes (SRC) must be contained within the selected LCN range. If the selection is made by Reference Number/CAGE, then this number must be contained in table HA.

a. The report is selectable by Part I only or by both parts.

b. If both parts of the report are selected, a page break will occur between each change in Reference Number/CAGE. If only part I is selected, multiple Reference Number/CAGEs may appear on the same page.

c. Next Higher Assembly Reference Number and CAGE is determined by the item's NHA PLISN with an "N" NHA Indicator, and one indenture less than the item. The HG Item's keys are compared to HH keys to find the NHA PLISN. A search for this PLISN is conducted in the HG table to find the NHA. Both the PLISN and NHA PLISN must have the same t PCCN (found in XC table through HO). The HG table key Reference Number and CAGE containing the PLISN matched to the NHA PLISN is the NHA reference number and CAGE. (Same process for LSA-151 summary).

30.50.3 REPORT FORMAT. See Figure 3.47

30.50.4 REPORT SEQUENCE. The report is sequenced in ascending Reference Number and CAGE.

30.50.5 DATA SOURCE. The source of data appearing on the LSA-154 summary is depicted below by data table and element codes.

Report header	Table Code	DED	Element Code
EIAC	HG	096	EIACODXA
ITEM NAME	HA	182	ITNAMEHA
START LCN	HG	199	LSACONXB
ALC	HG	019	ALTLCNXB
TYPE	HG	203	LCNTYPXB
STOP LCN	HG	199	LSACONXB
CTIC1	HA	058	CTICODHA
CTIC2	HA	058	CTICODHA
SOURCE	HG	389	SMRCODHG
CAGE	HG	046	CAGECDXH
REFERENCE NUMBER	HG	337	REFNUMHA
PARTS (SELECTED)			
REFERENCE NUMBER	HG	337	REFNUMHA
CAGE	HG	046	CAGECDXH
RNCC	HA	338	REFNCCHA
RNVC	HA	339	REFNVCHA
DAC	HA	086	DOCAVCHA

ITEM NAME	HA	182	ITNAMEHA
CTIC	HA	058	CTICODHA
PLT	HA	299	PRDLDTHA
AMC	HA	003	ACQMETHA
AMSC	HA	004	AMSUFCHA
UM	HA	491	UNITMSHA
ADDITIONAL REFERENCE NUMBER(S)	HB	006	ADDREFHB
CAGE	HB	046	ADCAGEHB
RNCC	HB	338	ADRNCCHB
RNVC	HB	339	ADRNVCHB
CTIC CAGE	HC	046	CTCAGEHC
CAGE NAME	XH	047	CANAMEXH
UM PRICE	HE	492	UMPRICHE
LOT QUANTITY			
FROM	HE	205	LOTQFMHE
TO	HE	205	LOTQTOHE
CPC	HE	051	CURPRCHE
TUC	HE	485	TUMPRCHE
FY	HE	145	FISCYRHE
IC	HG	162	INDCODHG
PCCN	XC	309	PCCNUMXC
PLISN	HG	309	PLISNOHG
	XC	309	PLISNOXC
ITEM NAME	HA	182	ITNAMEHA
QPA	HG	316	QTYASYHG
	XC	316	QTYASYXC
QPEI	HG	317	QTYPEIHG
	XC	317	QTYPEIXC
SMR	HG	389	SMRCODHG
EC	HG	100	ESSCODHG
NEXT HIGHER ASSEMBLY			
CAGE	HG	046	CAGECDXH
REFERENCE NUMBER	HG	337	REFNUMHA
[NHA PLISN]	HH	258	NHAPLIHH
TOT QTY RECOMMENDED	HG	453	TOTQTYHG
UOC(S)	HO/XC	501	UOCSEIXC

LSA-154

30.51 LSA-155 RECOMMENDED SPARE PARTS LIST FOR SPARES ACQUISITION INTEGRATED WITH PRODUCTION (SAIP) REPORT SPECIFICATION

30.51.1 SELECTION. The LSA-155 summary is selected by mandatory LCN, and optional ALC, STOP LCN, UOC, and TYPE PRICES.

30.51.2 PROCESSING. In order to produce an LSA-155 summary at least one item with a SAIP Indicator of "Y" (SAIPCDHA) must be contained within the selected LCN range. The requester may specify either UM or UI prices to be displayed on the report.

30.51.3 REPORT FORMAT. See Figure 3.48

30.51.4 REPORT SEQUENCE. The report is sequenced in ascending Reference Number/CAGE.

30.51.5 DATA SOURCE. The source of data appearing on the LSA-155 summary is depicted below by data table and element codes.

Report header	Table Code	DED	Element Code
EIAC	HG	096	EIACODXA
ITEM NAME	HA	182	ITNAMEHA
START LCN	HG	199	LSACONXB
ALC	HG	019	ALTLCNXB
TYPE	HG	203	LCNTYPXB
STOP LCN	HG	199	LSACONXB
UOC	HO/XC	501	UOCSEIXC
TYPE PRICES (SELECTED)			
[SAIP INDICATOR]	HA	391	SAIPCDHA
REFERENCE NUMBER	HA	337	REFNUMHA
CAGE	HA	046	CAGECDXH
[UM/UI INFORMATION]			
UM	HA	491	UNITMSHA
UM PRICE	HE	492	UMPRICHE
LOT QUANTITY			
FROM	HE	205	LOTQFMHE
TO	HE	205	LOTQTOHE
CPC	HE	051	CURPRCHE
TUC	HE	485	TUMPRCHE
UI	HA	488	UNITISHA
UI PRICE	HD	490	UIPRICHD
LOT QUANTITY			
FROM	HD	205	LOTQFMHD
TO	HD	205	LOTQTOHD
CPC	HD	051	CURPRCHD
TUC	HD	485	TUIPRCHD
PLT	HA	299	PRDLDTHA
NO. (GENERATED)			
LCN	HG	199	LSACONXB
ALC	HG	019	ALTLCNXB
MRR-1	HG	211	MRRONEHG
ORR	HH	281	OVHREPHH
NRTS	HG	261	NORETSHG

MAINTENANCE TASK DISTRIBUTION			
CBD	HG	214	CBDMTDHG
CAD	HG	214	CADMTDHG
TOT QUANTITY RECOMMENDED	HG	453	TOTQTYHG

LSAR SOFTWARE VALIDATION

40.0 OBJECTIVE. Provide guidance on MIL-STD-1388-2B software validation.

40.1 General. MIL-STD-1388-2B, 28 Mar 91, DOD Requirements for a Logistic Support Analysis Record, cites the requirement for performing activities to use a validated LSAR ADP system. Paragraph 4.2.2.2 of the standard defines the minimum design criteria for such a software system. Validation will be completed by the USAMC Logistic Support Activity (LOGSA). Validation of these independently developed LSAR ADP systems is not, and shall not be construed as a Government endorsement of an ADP system's design or capability. It is simply recognition that the vendor or performing activity software system satisfies the minimum LSAR ADP system requirements and criteria established by the standard and is, therefore approved for use in support of government contract LSAR requirements.

40.2 Purpose. This handbook describes the validation process to be followed, and the requirements the vendor or performing activity developed LSAR ADP system must satisfy to acquire system validation.

40.3 Differences in Validation Requirements with the Revised Standard. Under MIL-STD-1388-2A there is Government furnished software called the Joint Service LSAR ADP system--developed by the DOD LSA Support Activity and furnished free of charge to any agency/contractor requesting it. The old standard also encouraged the use and development of independently developed LSAR ADP systems which were categorized as three different types:

40.3.1 Type I. Type I systems are "front-end" entry and edit systems only, which created transactions for processing by the government developed LSAR ADP system.

40.3.2 Type II. Type II systems carry this process further by independently creating complete and transferable LSAR Master Files. Reports are generated using the report generation sections of the government developed LSAR ADP system.

40.3.3 Type III. Type III systems are "full blown" and completely independent LSAR ADP systems with the capability of independent report generation and data transfer using the complete LSAR master files.

Under MIL-STD-1388-2B, there is no Joint Service Standard ADP system, on which to build independent ADP system. Therefore, all independent ADP systems are similar to type III. Additionally, validated systems must be capable of transferring and accepting change only data from the last delivery of LSAR data and providing automated user comment capability.

40.4 Differences in LSAR Software System Design Criteria 2A versus 2B. The new capabilities of the 2B designed LSAR system are a large improvement over the 2A capabilities. These new capabilities were desired by both the

government and contractors. Therefore, these new capabilities must be part of the validation criteria. The differences in the 2A verse 2B validation criteria, see figure 4.1, are as follows:

VALIDATION CRITERIA
2A VERSUS 2B

2A	2B
	ACCEPT MASTER TABLES
PRODUCE MASTER FILES	PRODUCE MASTER TABLES
PRODUCE SELECTION REPORTS	PRODUCE ALL LSAR REPORTS
SATISFY APPENDIX A/A/E	SATISFY APPENDIX A/A/E
	PRODUCE CHANGE ONLY DATA
	PROVIDE AUTOMATED COMMENT CAPABILITY

FIGURE 4.1

40.4.1 Master Table(s) Acceptance. A new criteria requires capability to automatically accept relational master table data in the formats described in appendix A (MIL-STD-1388-2B) using the data elements, definitions, data element edits, data field lengths, and data relationships contained in appendices A and E of the standard (MIL-STD-1388-2A does not require the acceptance of master files).

40.4.2 Master Table(s) Delivery. The ADP system must have the capability of outputting LSAR relational tables as displayed in Appendix A, (MIL-STD-1388-2B) to satisfy the Data Item Description format for data delivery. (Criteria unchanged from 2A to 2B, only data is in relational table format, instead of master file format).

40.4.3 LSAR Reports. All 2B ADP system are required to produce all LSAR reports, including all options and selection criteria as displayed and described in Appendix B, MIL-STD-1388-2B. (MIL-STD-1388-2A requirement for a Type III system was to produce at least one or more of the standard LSA output reports.)

40.4.4 Appendix A and E. The system must satisfy the business rules established in Appendix A of MIL-STD-1388-2B. The system must, as a minimum, have the capability of satisfying appendix E, (MIL-STD-1388-2B) data elements

definitions. (Criteria unchanged from Appendix F of MIL-STD-1388-2A, only there have been new data elements added.)

40.4.5 Change Only Data. The system must have the capability of outputting and inputting change only data. Change only data is that data which is different from last delivery of data. (MIL-STD-1388-2A could accept full file transfers only; it did not specify the requirement for change only data.)

40.4.6 Comment Capabilities. The system must have the capability to provide automated user comments. MIL-STD-1388-2B does not specify how the comment capability be done, only that it must be automated. (This capability was not available under MIL-STD-1388-2A.)

40.5 General Validation Procedures. The following describes the test parameters and step by step validation process. Additional and more detailed instructions of the validation procedures are available from LOGSA in the form of a Validation Guide, provided upon request.

40.5.1 Step 1. The system developer will submit a written validation request to LOGSA, the DOD LSAR Support Activity.

40.5.2 Step 2. LOGSA then forwards test data and instructions to the system developer. Testing parameters for the system include:

(1) Evidence of integrity between tables.

(2) Correct data edits.

(3) Establishment of records with full record identification

(4) Recognition of business rules, e.g., in table BD, if you have a failure rate, you must have a failure rate measurement base.

(5) Accepting and producing change only data.

(6) Accepting and producing Master tables.

40.5.3 Step 3. The test data is uploaded to the developer's system. The modules must be processed in their numerical sequence. The modules contain initial input to all master tables in Cycle 1, updates in Cycle 2, and valid and invalid manual transactions in Cycle 3.

40.5.4 Step 4. After running Cycle 1, hardcopies of the LSAR reports are generated from the master tables. The Government validation team will perform a comparison of each LSA hardcopy report generated from the master tables produced by the system developer. Validation requires that the LSA product oriented reports such as the MAC, RPSTL, and 036, Provisioning Requirements be identical in format and content to those displayed in Appendix B, MIL-STD-1388-2B; while other summary reports such as the LSA-001, Man-Hours by Skill Specialty Code and Level of Maintenance, LSA-003, Maintenance Summary, and the LSA-005, Support Items Utilization Summary are reviewed only for

content, spacing, etc. is not considered critical, but the general format of the report should be adhered to.

40.5.5 Step 5. The system developer must then submit the following items to LOGSA for validation:

(1) LSAR data tables on 5 1/4 or 3 1/2 inch floppy disk following Cycle 3.

(2) Change only LSAR data reflecting changes caused by Cycle 2 and Cycle 3 test data to the initial cycle.

(3) Hardcopy listing and floppy disk of LSAR reports in sequence as shown in Appendix B, MIL-STD-1388-2B.

(4) Report of entry/edit discrepancies for Cycles 1 and 2 .

(5) Completed survey contained in Appendix A, MIL-STD-138 8-2B, Software Validation Guide. Data contained in this survey may be released to LSAR users requesting information on validated LSAR software systems.

40.5.6 Step 6. LOGSA will contact the developer if any validation discrepancies are discovered that are not explained in his validation report and survey. In addition, direct access to that system via modem, or on-site inspection, for automated edit or user comment capability review may be requested.

40.6 Validation Completion. LOGSA evaluates the LSAR products submitted. Assuming no major problems are encountered in the validation process, up to 60 working days may be required for review after initial submission of the validation request and accompanying files, listings, survey, and report. Upon successful completion of the system's validation review, the developer will receive an official letter of validation from the Office of the Assistant Secretary of Defense (Defense Logistic Support Office).

40.7 Validation Letter Renewal Procedures. Under MIL-STD-1388-2B a letter of validation issued to any independently developed LSAR ADP system is renewable annually on the anniversary date of the letter currently in effect. MIL-STD-1388-2A validations no longer require renewals.

40.7.1 Renewal Request. The system developer must request renewal, in writing, to LOGSA, the DOD LSAR Support Activity. The request must include: the date of the current letter of validation and a statement clearly confirming that the LSAR ADP system has not been modified from the initial description submitted for validation.

40.7.2 Renewal Issuance. The DOD LSAR Support Activity requires 15 working days to process validation renewal requests. These requests are forwarded to OASD, where the official renewal letter is mailed to the system developer and a copy furnished to LOGSA.

40.8 LSAR ADP System Revalidation. Revalidation is mandatory if a system is altered from that which is described in the validation request letter on file in the DOD LSA Support Activity. It is the responsibility of the independent system developer to apply for revalidation. Revalidation procedures and the processing time table are identical to those described in paragraphs at 1.5 for initial system validation. Revalidation requests received within 120 days of a previously validated or renewed system will not be honored.

40.9 Disapproval of Validation Request. If an LSAR ADP system fails validation, its developer will be informed of the reason(s) for failure and recommended corrective action(s) to facilitate system validation.

40.10 Revocation of Validation. There are endless combinations of data edits and business rules to be adhered to in developing this type of ADP system. With the expertise of our validation team and high standards for our validation process, hopefully, the result will be the availability of some excellent quality MIL-STD-1388-2B software. However, if a vendor demonstrates noncompliance with these standards or continually exhibits problems within his system that are not corrected, he risks revocation of his validation.

40.11 Considerations for Software Evaluation. Listed below are some suggested areas to think about in evaluating the LSAR software available, and help you in determining the one(s) that best suit your particular needs:

a. Type of hardware platform to be used, (mainframe, mini, etc.).

b. Volume of data to be documented.

c. Rate of processing (number of transactions).

d. Types of users/operators--user friendliness.

e. Number of simultaneous users.

f. Interface requirements to other systems.

g. Conversion capability from MIL-STD-1388-2A to MIL-STD-1388-2B.

h. Cost of the system.

i. Ad hoc reporting capability.

j. Any other special requirements you may need.

40.12 LSAR Independently Developed ADP Pamphlet. LOGSA also produces a pamphlet on LSAR Independently Developed ADP Systems. This pamphlet contains a brief description of each of the independently developed LSAR software programs that have been validated by LOGSA. This brochure is periodically updated to reflect both systems validated under MIL-STD-1388-2A as well as the future MIL-STD-1388-2B systems.

GUIDANCE FOR ASSIGNMENT OF LOGISTIC SUPPORT ANALYSIS (LSA) CONTROL NUMBER (LCN), ALTERNATE LCN CODE (ALC), LCN TYPE AND USABLE ON CODE (UOC)

50. PURPOSE. This chapter provides guidance for the assignment of LCNs, ALCs, LCN-Types, and UOCs; their use; and, their relationship to one another.

50.1 Traditional LCN assignments. Traditionally, the LCN was developed using the physical hardware configuration (or engineering drawings), for LCN assignment. Using this approach, the LCNs assigned directly tracked with provisioning documentation requirements, and enabled easy conversion to provisioning data keys (PLISN). Any product documentation, such as the Maintenance Allocation Chart, Maintenance Plans, or Repair Parts and Special Tools List requiring a Functional Group Code (FGC) or Work Unit Code (WUC) sequencing was selected by LCN and then resorted by the data element WUC/TM-FGC.

50.2 Functional and physical LCN assignments. Under MIL-STD-1388-2B, the capability exists to assign physical and/or functional LCNs. The functional breakdown of the system is useful for rolling up RAM type of information and also for documenting reliability allocation. Under the Reliability and Maintainability areas, a physical hardware breakdown may create problems in "rolling up" failure rates, reliability times, and maintainability frequencies to the appropriate higher item. For example, if an antenna connected to a wing-tip fails, the failure should be rolled to the communications system, and not to the wing structure on which it is physically attached. The traditional WUC/TM-FGC cannot be used for functional documentation since this element is used for product development and may contain a consolidated code for "like" items which will create problems for reliability/ maintainability summations and calculations. In addition, a WUC/TM-FGC cannot be documented until a physical (or traditional) LCN has already been assigned. The functional LCN will provide the flexibility necessary to correct these situations. In cases where the functional and physical breakdown are identical, separate structures will not be required. When there is a requirement for both physical and functional breakdowns, a cross-reference table mapping the functional and physical LCNs (table XG) will be documented to link the two. There can only be one physical LCN per functional LCN, and vice-versa. In an automated data processing system, the physical LCN structure will take precedence for data storage, when both a physical and functional LCNs exist for the same item. Upon creating the physical/functional mapping, any data documented under a functional LCN will be converted from a functional to a physical key. It is important to recognize that the two structures are completely independent, and that a "mixing" of structures (part physical/part functional) for a system/end item is not permitted. Also recognize the importance of proper mapping of the functional and physical LCNs. Figure 5.1 provides an example of a comparison between a physical and functional LCN breakdown. Note that the LCN for the antenna is A0301A on the functional breakdown and is A0101 on the physical breakdown. If reliability data had already been developed against the functional LCN and you now want to relate that information to a part in the physical breakdown, all you would have to do is use the mapping table (table XG) to document that the functional LCN A0301A and the physical LCN A0101 are the same item. Also note that the functional and physical LCNs are at

figure 5.1

different indenture levels, but they can still be mapped to each other.

50.2.1 LCN Type. To document functional/physical LCN assignment requires a new data element, LCN Type. This element is a key and is required where all LCN oriented data resides. The LCN-Type is a one-position code of either "F", Functional; or "P", Physical. One note of caution, if provisioning data is required for your system/equipment, Physical LCNs must be assigned because tables HG through HR require a physical breakdown.

50.3 LCN ASSIGNMENT. The LCN may represent either a functional or hardware generation breakdown/disassembly sequence of system/equipment hardware including support equipment, training equipment, and installation (connecting) hardware. As such, the LCN is a key field utilized to input data into the LSAR data system and to extract reports from the data system. Normally, development of the LCN structure and assignment of LCNs through the subsystem level should be accomplished prior to completion of the first LSAR data tables. Extreme care should be exercised in developing the structure, so that the least number of characters is used for each indenture level. This can be accomplished by identifying the maximum number of parts/assemblies which will be assigned a unique LCN at each indenture level. A special caution needs to be mentioned regarding the use of special characters in LCN assignment; if possible, do not utilize special characters when assigning LCNs. The reason for this warning is different ADP systems utilize special characters in different ways. Although your ADP system may allow a certain set of special characters for LCN assignment, another ADP system which your data may be passed to may use some of those special characters in system administration, and, therefore, produce critical errors when reading in LCNs with those special characters. If the maximum number of items at a given indenture level is less than or equal to 36, then 1 alphanumeric character would suffice. If the maximum number of items is greater than 36 but less than or equal to 1296, then 2 alphanumeric characters would suffice and so on. No more than one position of the LCN should be used to identify the system. It is useful to develop an LCN structure for the entire system/equipment hardware. Care should be exercised in assigning the LCNs, since the order in which they are assigned will affect the order of FMECA data and task analysis information, and may affect the order in which it will be used on a repair parts lists and assignment of PLISNs. For example, if it is a requirement for attaching hardware to appear on a repair parts list prior to the assembly, these items would have to be assigned LCNs which are less in value than the one assigned to the assembly. In assigning the LCN early in the design of an end item, it is also advantageous to skip one, two,or more LCNs, so that an additional item can be inserted later on due to design changes. This advance planning avoids the possibility of having to resequence at a later point in the program. Figure 5.2 provides an example of a developed LCN structure. In this example, we allocated 1 character at the A indenture level; the second indenture level B was allocated 2 spaces; the third level (the C indenture level) we allocated 3; the D level 3; the E level 4; and down at the piece part level we allocated 5 characters to document the LCN. Therefore, our LCN structure for this example is 1,2,3,3,4,5. If there is a 3 position LCN, then the ADP system will recognize that we must be at the B indenture level. Likewise, a 6 character LCN must be at the C indenture level. The total sum of the positions in the LCN structure

figure 5.2

cannot exceed 18, that is the maximum number of characters available for LCN assignment. The above guidance should be considered prior to assigning the LCNs. Three basic methods for assigning LCNs are discussed below, but you are not limited to these methods.

50.3.1 Classical LCN assignment. This method dictates assignment of a unique LCN to every application of a part numbered item in the system including piece parts. This method ensures proper identification of an item to its Next Higher Assembly (NHA) and ensures proper roll-up/summarization of data for all LSA Record (LSAR) reports. Figure 5.3 is an example of the classical LCN assignment method. From a provisioning standpoint, use of the classical assignment method would allow the automatic assignment of PLISN, NHA PLISN, SAME AS PLISN, and Indenture Code.

50.3.2 Modified classical assignment method. This method is a variation of the classical assignment method, which permits piece parts to be assigned the same LCN at the indenture level below the component/assembly of which they are a part. In addition, attaching hardware may be assigned the same LCN at the same indenture level at which the assembly is located. The assembly to which the attaching hardware is required is provided a separate LCN. Figure 5.4 shows an example of the modified classical method. The items with an asterisk have been assigned the same LCN. Application of this method could economize the number of LCNs required at the lower indenture levels. Use of this method ensures proper roll-up/summarization of data for all LSAR reports. From a provisioning standpoint when hardware breakdown approach is used for the LCN, this method allows the automatic assignment of all PLISNs and the indenture code.

50.3.3 Sequential assignment method. For large systems, an attempt to use any of the above methods can still result in a need for more than the 18 characters allocated to the LCN field. In this situation, the classical or modified classical assignment method would be employed for the first 12 or 13 characters of the LCN field; the last five or six characters of the LCN field would be assigned sequentially through the remaining indentures. An example of the sequential assignment method is provided on figure 5.5. This method does not affect the normal processing of the LSAR output reports; however, it is necessary to select reports at indenture levels above the point where sequential assignment of LCNs was initiated. From a provisioning standpoint, this method dictates manual input of the LCN-indenture code (LCN-IC) in order to automatically assign PLISN, NHA PLISN, and Indenture Code.

50.4 ALTERNATE LCN CODE (ALC). The ALC (codes 00 through 99) provides the capability to document alternate design concepts or like items for different models using identical LCNs at the same system breakdown level. As such, ALC is a key data element and a value of 00 is considered just as significant as a value of 01, 10, or 23. In fact, all LCNs which have a corresponding ALC with a value of 00 represent the "basic system" hardware. The ALC is LCN oriented and is used to aid in the documentation of the following:

a. Alternate items with different reference numbers (e.g., diesel engine versus gas engine), one of which will be selected for production.

figure 5.3

figure 5.4

figure 5.5

b. Different reference numbered items which are used in the same functional and physical location (i.e., same LCN) in the hardware breakdown, and the usage of either item results in a different configuration/model designation (i.e., different UOCs).

The use of ALC for a single configuration/model is discussed in the immediately following paragraphs, while ALC usage for multiple configurations/models is discussed in paragraph 3.

50.4.1 ALC usage for a single configuration/model. A system/end item which has a single configuration/model designation will have only one assigned UOC. When a system/end item has a single UOC, then the ALC can be used to capture analysis data for alternative designs or maintenance concepts. To properly input LSAR data and establish a traceable LCN breakdown structure, the following rules should be adhered to:

a. Rule 1. The "basic system" hardware breakdown must be input using ALC values of 00. This is necessary since the selection process will always default to the "basic system" data, if alternative data has not been entered.

b. Rule 2. Alternative designs will be broken down completely in terms of LCN and associated data.

c. Rule 3. To the maximum extent possible, the ALC assigned should be the same value throughout the alternative design/maintenance concept.

Following these rules allows for an orderly buildup of LSAR data and avoids confusion concerning which items may be common to two or more alternatives and provides for easier retrieval of LSAR reports.

50.4.1.1 Figure 5.6 is an example of a single configuration/model end item with a UOC of "ABC". The example also represents how the ALC can be used for alternative hardware design concepts. Three different fuel pumps are being considered for use on the gas engine, as well as an alternative diesel engine. All "basic" hardware items have an ALC of 00, while two additional fuel pumps and the entire diesel engine breakdown have different ALCs. This is in accordance with the first rule stated above. Rule 2 is also followed for the figure xx breakdown of the diesel engine because the identical electrical system was repeated from the gas engine. Rule 3 is followed in assignment of ALCs for the diesel engine (the multiple fuel pumps and their ALC assignments are an example of the Rule 3 statement "To the maximum extent possible ...").

50.4.2 ALC usage for LSAR reports. For most report selections, the UOC is always the first criteria that must be met for data selection and LCN is the second criteria. ALC becomes the third select criteria, if the user specifies a specific ALC value on the report request. As already discussed, an ALC of 00 on the report submittal will result in choosing "basic system" LCN data (i.e., records with 00 ALCs). If an ALC is requested with a specific numeric value, only items with a matching ALC will be chosen. If no ALC value is selected (blank), any ALC value can be chosen.

figure 5.6

50.4.3 Lower-tiered LCN/ALC selections. In addition to the basic report request, different LCN and ALC combinations at a lower indenture level from the basic report selection may be chosen to specify the alternative design desired by identifying these LCNs and ALCs. This is necessary when rule 3, discussed in paragraph 2.1, cannot be strictly adhered to and designation of the ALC on the basic report request will not result in a complete substitution of the alternative design. This situation will occur when alternative designs are being considered within the hardware breakdown of another alternative design. The example on figure 5.6 displays this situation; alternative fuel pumps are being considered within the gas engine and two alternative engines are being considered. Thus, in order to obtain the "basic system" (i.e., with gas engine), but with fuel pump RN5, a lower-tiered LCN/ALC request selection must be input with an LCN of "A203" and an ALC of "03". The basic report request would have an ALC value of 00. In order to produce a report for the "basic system" with the diesel engine substituted, the following selection request would be required:

a. A basic selection request with an LCN of "A", UOC of "ABC", and an ALC of "00". This produces a report of the "basic" truck.

b. A lower-tiered LCN/ALC selection request with an LCN of "A2" and an ALC value of "01". This information would modify the basic selection request to choose the diesel engine and its components, in lieu of the gas engine.

The lower-tiered LCN/ALC selection request allows the user to create many different variations of a system/end item via the LSAR reports. While use of the ALC for alternative designs does not reduce the amount of data required (i.e., rule 2 of paragraph 30.1), it does provide for easier data storage and report generation.

50.5 USABLE ON CODE (UOC). The UOC is used to identify the model/ configuration relationship of each LCN comprising a system/equipment and to control these relationships for LSAR report generation. The UOC is a critical data element and should therefore be used when establishing an LSAR. This requirement holds even if only one configuration/model of a system/equipment is being documented. In accordance with table XC, contained in appendix A of MIL-STD-1388-2B, each configuration/model is assigned a unique UOC at the system/end item level LCN. Each individual assembly/component/piece part is also "linked" to the assigned UOC of the model of which it is applicable through tables XF and HO. When an assembly/component/piece part is applicable to more than one configuration/model, then multiple UOCs are "linked" to the component for a single LCN and ALC via tables XF and HO. This eliminates the requirement of duplicating analysis and related data, merely because an item has application to multiple configurations/models. It should be stressed that if an item's usage for a given configuration model differs from another configuration/model in terms of quantity, Source, Maintenance, Recoverability (SMR) coding or analysis data, then multiple UOCs should not be used for a single LCN. This situation dictates using the ALC to indicate different data for the same LCN and a different UOC.

50.5.1 ALC and UOC relationship. In order to document multiple configurations/ models in the LSAR, the ALC plays an important role. As

already stated, for items that are common to all configurations/models, only one LCN/ALC entry is required in table XB for the multiple UOCs (table XF will have multiple entries, one entry per UOC). In addition, since such an item is considered part of the "basic system", its ALC would be 00. For those items that bring about a configuration/model change, the ALC is used in a manner similar to that discussed in paragraph 50.4. Figure 5.7 is an example of multiple UOCs for a given system/end item and the usage of ALC in conjunction with multiple model items. In the example, the basic model truck has a UOC of "ABC", while the new model truck has a UOC of "ABD". The reason for the additional model is the use of a diesel engine, instead of the gas engine. Since both types of engines physically and functionally appear in the same location of the truck breakdown, their LCNs are the same. The ALC of "01" has been used to differentiate new reference numbered items from the basic items.

50.5.2 UOC and ALC usage for LSAR reports. Paragraph 50.4.2 states that most selection requests for the LSAR reports must have, as a minimum, LCN and UOC on the request. The reason for this is that UOC is the overall report generation key that must match to a record before LCN and ALC are considered. In the case of a single configuration/model, its importance is reduced since every item has the same UOC value. For multiple configurations/models, the identification of the desired UOC on the selection request will result in building the desired output LSAR reports without lower-tiered LCN/ALC selections and without knowing which ALC values were used for that UOC's LCNs. Using the example on figure 5.7, a report selection request with an LCN of "A", an ALC of 00, and a UOC of "ABC" will result in the basic model breakdown being output. This means that the fuel pump, with reference number RN7, would be chosen over the other two fuel pumps. If the report selection request had been LCN of "A", a blank ALC, and UOC of "ABC", all items containing the UOC "ABC" would be selected. Therefore, all three fuel pumps under the basic model would be output. If the second model of the truck with UOC of "ABD" is to be selected, a report selection request with an LCN of "A" and a UOC of "ABD" is all that is needed. This would result in all LCN items with UOC values of "ABC" and "ABD", as well as all LCN items with UOC of "ABD" only being selected. In effect, the basic model with the diesel engine substituted would be output for the desired reports. What this selection should pull out is the diesel model truck, diesel engine, block, fuel pump, and it should also pull out from the basic model the body, transmission, and electrical system.

50.6 SUMMARY. The assignment of LCNs, UOCs, and ALCs must be approached carefully and logically in order to ensure that the LSAR reports represent the hardware logistics data desired. In general, a system/end item development effort normally begins with a single model designation (i.e., one UOC). During this phase of development, the ALC is needed only when alternative designs are being considered. As the hardware design stabilizes, the "undesirable" alternatives are deleted from the LSAR database in favor of "basic system" configuration. Once a system/end item enters the production phase, engineering change proposals, because of producibility limitations, design deficiencies, or changes in operational requirements, can dictate a new configuration model. When this occurs, the ALC once again would be used to aid in the documentation effort. This orderly application of the ALC to

figure 5.7

alternative design/maintenance concepts or multiple configuration/models can preclude user confusion. It is possible that some system/end item developments will initially be faced with documenting multiple configurations/ models and alternative design/maintenance concepts, simultaneously. When this occurs, an orderly and logical approach to UOC and ALC, following the guidance of this chapter, will result in a properly documented system/end item.

60. ACTIVITY AND DATA MODELING

60.1 Activity Modeling. In today's environment, the importance of identifying and managing data as a resource has been well documented. The traditional approach, activity modeling, has been to identify the activities requiring data and then to develop an application system to meet the need of the activity. The result has been a legacy of programs, files, and databases that are not integrated. In addition, data are inconsistent and unreliable since there are multiple sources of data.

60.2 Data Modeling. The modern approach utilizes activity modeling and data modeling. Activity modeling is used to identify data; data modeling is used to define the data structure. The process of modeling the organization's data identifies, defines, and graphically portrays these data as well as the relationships. Once the data have been modeled and verified by the user community, an organization will have a better understanding of the data's meaning and usage. Data that may have been process-bound in the past now becomes shared data, data that may be useful to multiple areas.

60.3 LSAR Data Model. The data modeling technique used for the LSAR was a top-down, entity-relationship concept. This was based on a relational concept, group or set theory. These concepts include entity identification, key and non-key attribute definition, and identification of integrity constraints between pairs of entities. These concepts provide a base for normalizing the data models. Figure 6-1 depicts an excerpt of the data model developed for the LSAR. Shown are the entity names, key attributes, non key attributes, and relationships between entities. Entities name a class of real or abstract objects. Entity End Item Acronym (EIA) is used to identify the object, while entity LCN

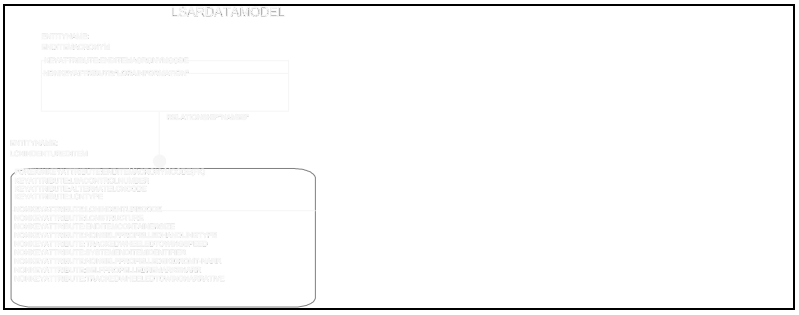

Figure 6-1

Indentured Items is used to identify the different LCNs needed for the object. EIA is an independent entity depicted by a box, which means the entity is not dependent upon another entity. Entity LCN Indentured Item depicted by a rounded corner box is a dependent entity relying upon the EIA entity key for its identity. The relationship between the two entities identifies that entity EIA "names" the entity LCN Indentured Item. The entity EIA has only one key attribute. Key attributes are defined as one or more attributes that uniquely define an instance of an entity. Attributes represent the characteristics or properties of an entity. Non Key attributes are not considered as specifically required to identify an entity and rely upon the key attributes to uniquely define them for an entity. The key attribute for the entity EIA is the EIA Code (EIAC). The non key attributes for entity EIA consist of numerous data elements which will be called LORA Information in figure 6-1. The set of attributes that uniquely identify the LCN Indentured Item entity is LCN, ALC, LCN Type, and the foreign key attribute of EIAC. EIAC has migrated from the EIA entity and is needed to uniquely identify the information in the LCN Indentured Item entity. Non Key attributes identified for the entity LCN Indentured Item are LCN Indentured Code, LCN Structure, End Item Container Size, Non Self Propelled Handling Type, Tracked Wheeled Towing Speed, System End Item Identifier, Non Self Propelled Skid Requirement Narrative, Self Propelled Remarks Narrative, and Tracked Wheeled Towing Narrative. This set was identified as attributes that are specifically tied to the key attribute set, which means that when the key set changes the non key attributes can change also. The LSAR data model represents to the third normal form the data captured in the LSAR. What is shown in figures 6-2 through 6-11 are the data model entity names, key attributes to uniquely identify the entity, and the relationships between the entities.

60.3.1 Normalization. When data models are developed, the optimal result is to avoid the problems caused by data redundancy, incorrect path assertions, and incorrect data definitions such as repeating groups and no-null constraints. The result is achieved by designing data structures that are normalized to third normal form. This means that each attribute resides in only one place in the model, has only one value, and that it depends entirely upon the full key of the entity for its existence.

60.4 Implementation of the LSAR Data Model for MIL-STD-1388-2B. When a data model is develop into a functional computer program there is a chance that some of the normalization is lost. This maybe done for ADP processing performance or in MIL-STD-1388-2B's case for usage of data. Figure 6-12 shows and excerpt of the implementation of MIL-STD-1388-2B. It was decided that the LCN structure should only be identified once for the entire EIAC. This would help in the ADP processing of the LCN's, so it was moved from the entity LCN Indentured Item to the entity EIA. Some of the non key attributes; End Item container size, Non Self Propelled Handling Type, Tracked Wheeled Towing Speed, Non Self Propelled Skid Requirements Narrative, Self Propelled Remarks narrative, and Tracked Wheeled Towing Narrative of the entity LCN Indentured Item were moved to another functional area of transportation. This was done because these Non key attributes will only apply to a minimal amount of LCNs. There are other cases of Non Key Attributes being moved to increase performance of the ADP system. MIL-STD-1388-2B identifies the implementation of the LSAR data model.

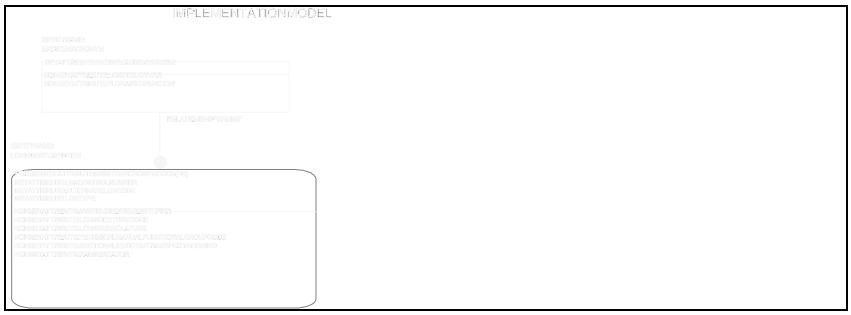

Figure 6-12

APPENDIX A
ACRONYM LISTING

AAL	Additional Authorization List
ADP	Automatic Data Processing
AF	Air Force
AFMC	Air Force Material Command
ALC	Alternate Logistic Support Analysis Control Number Code
ALUR	Automated Logistic Support Analysis Record Utilities Routines
AMC	Amry Material Command
ARN	Additional Reference Number
BIIL	Basic Issue Items List
BIT	Built In Test
BITE	Built In Test Equipment
BOI	Basis of Issue
CAGE	Commercial and Government Entity code
CBIL	Common and Bulk Items List
CCSS	Commodity Command Standard System
CDRL	Contract Data Requirements List
CED	Concept Exploration/Definition
CFI	Card Format Indicator
CIC	Critical Item Code
CM	Corrective Maintenance
CMRS	Calibration and Measurement Requirement Summary
COEA	Cost and Operational Effectiveness Analysis
COEIL	Components Of End Item List
CSC	Card Sequencing Code
CSN	Card Sequence Number
DARS	Defense Acquisition Regulation Supplement
DCN	Design Change Notice
DID	Data Item Description
DLSC	Defense Logistics Services Center
DOD	Department of Defense
DODISS	Department of Defense Index of Specifications and Standards
D&V	Demonstration and Validation
EBCDIC	Extended Binary Coded Decimal Interchange Code
EDFP	Engineering Data for Provisioning
EIAC	End Item Acronym Code
EMD	Engineering and Manufacturing Development
ESML	Expendable/Durable Supplies and Materials List
FGC	Functional Group Code
FMEA	Failure Modes Effects Analysis
FMECA	Failure Modes Effects and Criticality Analysis
FOI	Functional Operating Instructions
GFE/GFI	Government Furnished Equipment/Government Furnished Information
HFE	Human Factors Engineering
IC	Indenture Code
ICC	Item Category Code
ICTP	Individual and Collective Training Plan
ILS	Integrated Logistic Support
ILSP	Integrated Logistic Support Plan

IMAC	Industrial Materials Analysis of Capacity
IPB	Indentured Parts Breakout
IPS	Integrated Program Summary
ISIL	Interim Support Items List
JCL	Job Control Language
LCC	Life Cycle Costs
LCN	Logistic Support Analysis Control Number
LLTIL	Long Lead Time Items List
LOGPARS	Logistics Planning and Requirements Simplifications Systems
LORA	Level of Repair Analysis
LSA	Logistic Support Analysis
LSAP	Logistic Support Analysis Plan
LSAR	Logistic Support Analysis Record
MAC	Maintenance Allocation Chart
MARC	Manpower Requirements Criteria
MB	Measurement Base
MCCDC	Marine Corps Combat Development Command
MCSC	Marine Corps Systems Command
MD	Material Developer
MNS	Mission Need Statement
MPT	Manpower, Personnel, and Training
MRR	Maintenance Replacement Rate
MTBF	Mean Time Between Failures
MTD	Maintenance Task Distribution
NAVAIR	Naval Aviation Command
NAVSEA	Naval Sea Command
NAVSUB	Naval Submarine Command
NDI	Non-Developmental Item
NHA	Next Higher Assembly
NSN	National Stock Number
O&M	Operations and Maintenance
O&O	Organizational and Operational
OPNAV	Operations Naval
ORD	Operational Requirements Document
ORR	Overhaul Replacement Rate
O&S	Operations and Support
PA	Performing Activity
PBF	Provisioning Baseline File
PCCN	Provisioning Contract Control Number
PCL	Post Conference List
P&D	Production and Deployment
PERT	Program and Evaluation Review Technique
PHS&T	Packaging, Handling, Storage and Transportation
PIP	Product Improvement Program
PL	Provisioning List
PLCC	Provisioning List Category Code
PLISN	Provisioning List Item Sequence Number
PM	Preventive Maintenance
PMAC	Preliminary Maintenance Allocation Chart
PMCS	Preventive Maintenance Checks and Services
PMF	Parts Master File
PMR	Provisioning Master Record

PPI	Planned Product Improvement
PPL	Provisioning Parts List
PPLI	Provisioning Parts Listing Index
PPS	Provisioning Performance Schedule
PPSL	Program Parts Selections List
PTD	Provisioning Technical Documentation
PUC	Provisioning Unit of Measure Price Code
QPA	Quantity per Assembly
QPEI	Quantity per End Item
QQPRI	Qualitative and Quantitative Personnel Requirements Information
RA	Requiring Authority
RAM	Reliability, Availability, and Maintainability
RCM	Reliability Centered Maintenance
RDBMS	Relational Data Base Management System
RDOC	Reference Designation Overflow Code
RFP	Request For Proposal
R&M	Reliability and Maintainability
RNCC	Reference Number Category Code
RNVC	Reference Number Variation Code
RPSTL	Repair Parts and Special Tools List
RPT	Resident Provisioning Team
RIL	Repairable Items List
RTD	Replacement Task Distribution
SAIP	Spares Acquisition Integrated with Production
SCC	Significant Character Code
SCN	Submitter Control Number
SCPL	System Configuration Provisioning List
SE	Support Equipment
SERD	Support Equipment Recommendations Data
SESAME	Selected Essential-Item Stockage for Availability Method
SFPPL	Short Form Provisioning Parts List
SHSC	Safety Hazard Severity Code
SIC	Suppression Indicator Code
SMR	Source, Maintenance and Recoverability Code
SOW	Statement of Work
SPAWAR	Space and Warfare Command
SPCC	Ships Parts Control Center
SPS	Statement of Prior Submission
SQL	Structured Query Language
SRA	Specialized Repair Activity
SR&M	System Reliability and Maintainability
SSC	Skill Specialty Code
SSP	System Support Package
TDP	Technical Data Package
T&E	Test and Evaluation
TEMP	Test and Evaluation Master Plan
TM	Technical Manual
TMDE	Test Measurement and Diagnostic Equipment
TM/FGC	Technical Manual/Functional Group Code
TOCC	Type of Change Code
TPS	Test Program Set
TT	Technical Test

TTEL	Tools and Test Equipment List
UOC	Usable On Code
UM	Unit of Measure
USAMC	United States Army Material Command
UT	User Test
UUT	Unit Under Test
WBS	Work Breakdown Structure
WUC	Work Unit Code

APPENDIX B
MIL-STD-1388-2B DATA TABLES AND REPORTS

1.0 DATA TABLES AND REPORTS

1.1 PURPOSE. This appendix is design to be used as reference to reports, data tables, and report to data table usage.

1.2 REPORT COMPARISON. Table 1 is a comparison of MIL-STD-1388-2A and MIL-STD-1388-2B reports. This table should help those familiar with MIL-STD-1388-2A reports, but are not familiar with the new set of MIL-STD-1388-2B reports.

1388-2A	1388-2B	1388-2A	1388-2B
001 & 002	001	027	027 (Changed)
003	003	028	Deleted
004 & 020	004	029,030,031,& 034	030
005	005	032	032
006	006	036 & 150	036
007	007	040-043, & 045	040
008	008	050	050
009	009	051-055	Replace by 056 & 058
010	010	060 & 061	Deleted
011	011	070	070 (Changed)
012	012	072	072
013	013	074	074
014	014	075	075 (Changed)
015	Replaced by 019	077	077
016 & 17	016	080	080
018	Deleted	100-109	Deleted
019	019 (Changed)	151	151
021 & 022	Deleted	152	152
023	023	154	154
024	024	155	155
025 & 026	025 & 026		

Table 1 LSAR REPORTS MIL-STD-1388-2A TO MIL-STD-1388-2B

COMPARISON

1.3 NEW 1388-2B REPORTS. Under MIL-STD-1388-2B there where requirements to add new reports. There where 13 reports added to MIL-STD-1388-2B. These reports are:

a. LSA-018 TASK INVENTORY SUMMARY

b. LSA-033 PREVENTIVE MAINTENANCE CHECKS & SERVICES

c. LSA-037 SPARES AND SUPPORT EQUIPMENT IDENTIFICATION LIST

d. LSA-039 CRITICAL AND STRATEGIC ITEM SUMMARY

e. LSA-046 NUCLEAR HARDNESS CRITICAL ITEM SUMMARY

f. LSA-056 FMECA SUMMARY

g. LSA-058 RELIABILITY AVAILABILITY AND MAINTAINABILITY SUMMARY

h. LSA-065 MANPOWER REQUIREMENTS CRITERIA

i. LSA-071 SUPPORT EQUIPMENT CANDIDATE LIST

j. LSA-076 CALIBRATION AND MEASUREMENT REQUIREMENT SUMMARY

k. LSA-078 HAZARDOUS MATERIALS SUMMARY

l. LSA-085 TRANSPORTABILITY SUMMARY

m. LSA-126 LCN/PCCN INDENTURE STRUCTURE TREE

1.4 LSAR DATA TABLES. Listed in table 2 are the 10 functional areas of MIL-STD-1388-2B. Provided in table 2 are the table designation and title for each of these functional areas. Table 3 is a list of tables, there codes, and table titles.

LSAR DATA TABLES

X DATA TABLES	CROSS FUNCTIONAL REQUIREMENT
A DATA TABLES	OPERATIONS and MAINTENANCE REQUIREMENT
B DATA TABLES	RELIABILITY, AVAILABILITY, and MAINTAINABILITY; FAILURE MODES, EFFECTS, and CRITICALITY ANALYSIS; and MAINTAINABILITY ANALYSIS
C DATA TABLES	TASK ANALYSIS and PERSONNEL and SUPPORT REQUIREMENTS
E DATA TABLES	SUPPORT EQUIPMENT and TRAINING MATERIEL REQUIREMENTS
U DATA TABLES	UNIT UNDER TEST REQUIREMENTS and DESCRIPTION

F DATA TABLES	FACILITIES CONSIDERATIONS
G DATA TABLES	PERSONNEL SKILL CONSIDERATIONS
H DATA TABLES	PACKAGING and PROVISIONING REQUIREMENT
J DATA TABLES	TRANSPORTABILITY ENGINEERING ANALYSIS

Table 2 Functional Areas of MIL-STD-1388-2B

THE FOLLOWING IS A LISTING OF ALL DATA TABLES, TABLE CODES AND TABLE TITLES

TABLE	TABLE CODE	TABLE TITLE
"X" TABLES		
	XA	End Item Acronym Code (EIAC)
	XB	LCN Indentured Item
	XC	System/End Item
	XD	System/End Item Serial Number
	XE	LCN to Serial Number Usable on Code
	XF	LCN to System/End Item Usable on Code
	XG	Functional/Physical LCN Mapping
	XH	Commercial and Government Entity
	XI	Technical Manual Code and Index Number
"A" TABLES		
	AA	Operations and Maintenance Requirements
	AB	War/Peace Operations and Maintenance Requirements
	AC	Maintenance Level Requirements
	AD	Organizational Level Requirements
	AE	Skill, Operations, and Maintenance Requirements
	AF	War, Peace, Additional Requirements Narrative

	AG	Reliability Requirement
	AH	Interoperability Requirement
	AI	Modeling Data
	AJ	Operations and Maintenance Shipping Requirements
	AK	System/End Item Narrative
"B" TABLES		
	BA	Reliability, Availability, and Maintainability Characteristics
	BB	Reliability, Availability, and Maintainability Characteristics Narrative
	BC	Reliability, Availability, and Maintainability Logistics Considerations

TABLE	TABLE CODE	TABLE TITLE
"B" TABLES	BD	Reliability, Availability, and Maintainability Indicator Characteristics
	BE	War/Peace Reliability, Availability, and Maintainability Indicator Characteristics
"B" TABLES (CONT)		
	BF	Failure Mode/Reliability Centered Maintainability Analysis
	BG	Failure Mode/Centered Maintenance Narrative
	BH	Failure Mode Task
	BI	Failure Mode Indicator, Mission Phase Code Characteristics
	BJ	Failure Mode Indicator Mission Phase Code Characteristics Narrative
	BK	Reliability, Availability, and Maintainability Criticality
	BL	Mission Phase Operational Mode

C TABLES

CA	Task Requirement
CB	Subtask Requirement
CC	Sequential Subtask Description
CD	Subtask Personnel Requirement
CE	Task Remark
CF	Task Remark Reference
CG	Task Support Equipment
CH	Task Manual
CI	Task Provisioned Item
CJ	Job and Duty Assignments
CK	Task Inventory

"E" TABLES

EA	Support Equipment
EB	Allocation Data
EC	Support Equipment Parameters
ED	Support Equipment Authorization
EE	Support Equipment Narrative

TABLE	TABLE CODE	TABLE TITLE
"E" TABLES	EF	Support Equipment Recommendation Data
	EG	Support Equipment Recommendation Data Revision Remarks
	EH	Alternate National Stock Numbers
	EI	Input Power Source
	EJ	Support Equipment Design Data
	EK	Supercedure Data
	EL	Support Equipment Integrated Logistic Support Requirement Category Code

	EM	System Equipment
"U" TABLES		
	UA	Article Requiring Support/Unit Under Test
	UB	Unit Under Test Support Equipment
	UC	Operational Test Program
	UD	Unit Under Test Support Equipment Operational Test Program
	UE	Test Program Instruction
	UF	Unit Under Test Explanation
	UG	Unit Under Test Parameter Group
	UH	Unit Under Test Fault Isolated Replaceable Unit
	UI	Adapter-Interconnector Device
	UJ	Unit Under Test Support Equipment Adapter-Interconnector Device
	UK	Automatic Test Equipment Test Station
	UL	Unit Under Test Support Equipment Automatic Test Equipment
	UM	Support Equipment Item Unit Under Test
	UN	Support Equipment Unit Under Test Parameter Group
"H" TABLES		
	HA	Item Identification
	HB	Additional Reference Number
	HC	Contractor Technical Information Code CAGE
	HD	Unit of Issue Price

TABLE	TABLE CODE	TABLE TITLE
"H" TABLES	HE	Unit of Measure Price
	HF	Item Packaging Requirement
	HG	Part Application Provisioning

	HH	Overhaul-Kit Next Higher Assembly PLISN
	HI	Provisioning Remark
	HJ	Provisioning Reference Designation
	HK	Parts Manual Description
	HL	Parts Manual Provisioning Nomenclature
	HM	Basis of Issue
	HN	Provisioning Serial Number Usable on Code
	HO	Provisioning System/End Item Usable on Code
	HP	Design Change Information
	HQ	Serial Number Effectivity
	HR	Design Change Usable on Code
"J" TABLES		
	JA	Transportation
	JB	Transportation Shipping Mode
	JC	Transported End Item
	JD	Transported End Item Narrative
	JE	Transport by Fiscal Year
	JF	Transportation Narrative

Table 3 Data Tables of MIL-STD-1388-2B

1.5 DATA TABLE TO REPORT USAGE. Table 4 is a matrix of LSAR reports to data tables. The user can determine tables or functional areas which are required to produce a given report. Table 4 is a condensed version of Figure 14 of MIL-STD-1388-2B. To determine specific data elements required for each report figure 14 of MIL-STD-1388-2B should be used.

	LSAR DATA TABLES									
LSAR REPORTS	X	A	B	C	E	U	F	G	H	J
LSA-001	X			X						
LSA-003	X	X		X						
LSA-004	X			X	X				X	
LSA-005	X			X	X				X	
LSA-006	X			X					X	
LSA-007	X			X	X				X	
LSA-008	X			X	X				X	
LSA-009	X								X	
LSA-010	X								X	
LSA-011	X			X						
LSA-012	X			X	X		X		X	
LSA-013	X			X	X					
LSA-014	X			X						
LSA-016	X			X	X				X	
LSA-018	X			X	X					
LSA-019	X			X	X				X	
LSA-023	X	X	X	X	X			X	X	
LSA-024	X		X	X	X				X	
LSA-025	X								X	
LSA-026	X								X	
LSA-027	X	X	X	X					X	

	LSAR DATA TABLES									
LSAR REPORTS	X	A	B	C	E	U	F	G	H	J
LSA-030	X								X	
LSA-032	X								X	
LSA-033	X		X	X						
LSA-036	X								X	
LSA-037	X		X						X	
LSA-039	X								X	
LSA-040	X								X	
LSA-046	X								X	
LSA-050	X	X	X	X				X		
LSA-056	X		X	X					X	
LSA-058	X		X	X					X	
LSA-065	X			X					X	
LSA-070	X		X	X	X	X			X	X
LSA-071	X			X	X				X	
LSA-072	X			X	X	X			X	
LSA-074	X			X	X				X	
LSA-075	X			X				X		
LSA-076	X		X	X	X	X			X	
LSA-077	X	X	X	X	X		X	X	X	
LSA-078	X			X					X	
LSA-080	X								X	
LSA-085	X								X	X
LSA-126	X								X	
LSA-151	X								X	
LSA-152	X								X	
LSA-154	X								X	
LSA-155	X								X	

Figure 4 Data Table to Report Matrix

Appendix C
PROVISIONING
1. INTRODUCTION

1.1 PURPOSE. This appendix is designed to be used as a procedural supplement to MIL-STD-1388-2B. Three report processes that can be generated by an Logistic Support Analysis Record (LSAR) Automated Data Processing (ADP) system directly result in functional provisioning related products. A basic understanding of the functional/system requirements are needed, in order to properly code the LSAR and prepare the report selection cards to produce these reports. The term Parts Master File (PMF) is a term used to describe the provisioning related LSAR data, most of which is stored in the H data tables. The term LCN Master File will be used to describe all other data in the LSAR.

1.2 PRODUCT REPORTS AND THEIR INTERRELATIONSHIP.

a. The product reports, described in this guide are the Maintenance Allocation Chart (MAC), Provisioning Technical Documentation (PTD), and Repair Parts and Special Tools List (RPSTL).

(1) The MAC identifies the maintenance task functions and associated maintenance man-hours, maintenance level allocations, tool and test equipment requirements, and other pertinent information. The MAC is produced directly from the LSA-004, Maintenance Allocation Chart Summary. The MAC will appear as appendix B to organizational level maintenance manuals. While the MAC is an Army-oriented summary, the Air Force use the LSA-023, Maintenance Plan Summary, and the Navy/Marine Corps uses the LSA-024, Maintenance Plan, as the primary planning, analysis and review tools for maintenance requirements.

(2) Provisioning Technical Documentation (PTD) is used by the requiring authority for the identification selection and determination of initial requirements and cataloging of support items to be procured through the provisioning process. The various types of provisioning lists are automatically produced using the LSA-036 report. Each service uses the LSA-036 summary for receipt of PTD as inputs to their in-house provisioning ADP system. Accompanying the PTD is the LSA-151, Provisioning Parts List Index (PPLI).

(3) The RPSTL or illustrated parts breakout manual contains lists of repair parts and special tools and illustrations of the parts and tools peculiar to the end item. The RPSTL manual format includes a table of contents; a tabular listing of authorized spare/repair parts; a listing of special tools and support equipment; illustrations that show all spare/repair parts and special tools and support equipment; and, part number/National Stock Number (NSN) to figure and item numbers indexes. The listings and indexes are produced directly from the LSA-030, Indenture Parts List. In addition the parts manual listings, the LSAR produces the listing of various authorization/ancillary equipment requirements required for the operators manual. These listings are the basic issue items, component of end items list items, additional authorization list items, and expendable/durable supplies and materials list items provided through the LSA-040, Authorization List

Items Summary.

b. The MAC is a reflection of the maintenance concept. The Functional Group Code (FGC) sequence of the MAC will dictate the sequence of entries in the narrative technical manual and RPSTL. This maintenance concept establishes the basic guidelines under which a materiel system is to be maintained and repaired. The MAC evolves from the maintenance concept that is documented in the LSAR, i.e., CA data table, during the task analysis process. The support item requirements portion of the task analysis, i.e., CG Table, serves as a baseline for determination of the Source, Maintenance and Recoverability Code (SMR). The third position of the SMR code provides authorization for requisition and stockage of an item. The SMR code is provided to the user in the field in the RPSTL or -P (parts) manual. The SMR code and other PTD, i.e., Replacement Task distribution, Repair Cycle Time, Maintenance Task Distribution, and Maintenance Replacement Rates (MRR) are used for determination of initial spares and repair requirements.

c. MRR can be determined by summing the products of the Task Frequency (CA table) times the Quantity per Task (CI Table) for all tasks using the particular Reference Number within a given component of LSA candidate. This coding must be in consonance with the task analysis documentation, so the provisioning requirement computations are performed in accordance with the maintenance concept, or MAC, and the support item authorization or RPSTL. Support items that are determined by the task analysis as necessary to be procured and stocked, but aren't currently in the Federal Supply System, must be cataloged and have NSNs assigned. These NSNs are also reflected in the RPSTL.

d. The MAC and other service maintenance plans are produced from data contained in both the LCN and PMFs. All other provisioning oriented summaries are produced exclusively from the PMF. The PMF stores data using primarily the CAGE and Reference Number. Multiple application of an item is stored by LCN/ALC/UOC/LCN TYPE.

e. Notice 4 to MIL-STD-1388-1A, 21 Jan 93, Logistic Support Analysis, incorporated the provisioning requirements previously contained in MIL-STD-1561B, 17 Mar 84, Provisioning Procedures, Uniform Department of Defense. Most references made to -1A in this document are requirements previously contained in -1561B.

f. In order to review/validate the data and file structure to produce these product reports, a discussion of various interrelated LSAR review reports will also be conducted, such as the LSA-032, Defense Logistics Information System (DLIS) Submittals; LSA-080, Bill of Materials; LSA-151, Provisioning Parts List Index (PPLI); LSA-152, PLISN Assignment/Reassignment, also the LSA-016, and the Preliminary Maintenance Allocation Chart (PMAC).

2. CODING REQUIREMENTS AND REPORT SELECTION LOGIC EXCEPTION FOR PROVISIONING REPORTS

2.1 ASSIGNMENT OF THE LCN.

a. The LCN assignment techniques described in appendix C of MIL-STD-1388-2B, are appropriate for developing the LSAR database for provisioning purposes. It is important to emphasize that LCNs are assigned in hardware generation breakdown sequence and not by Work Unit Code/Technical Manual (WUC/TM) Functional Group Code (FGC) or work breakdown structure codes.

b. When LCNs are assigned sequentially, the LCN-IC must be manually entered in the LSAR, XB table, before PCCN, PLISNs, ICs and NHA PLISNs can be automatically assigned. The LCN-IC must begin against the first item within a PCCN.

2.2 UOC ASSIGNMENT.

a. The UOC is a key data element used to identify the model/configuration relationship of each LCN comprising a system/equipment, and to control these relationships for LSAR report generation. Each Separately Provisioned End Item record, in the XC table, will contain a UOC. The part application records in the HG table are linked to the applicable UOC through the HO table. A part application may be tied to multiple UOCs by having multiple HO records but may have only one PCCN. The MAC data is tied to the UOC through the XF table. The HO and XF tables eliminate the duplication of data merely because an item has application to multiple configurations/models.

b. Multiple UOCs should not be assigned to the same LCN when the application related information such as SMR, quantity data or analysis data. This situation dictates input of additional relational table rows using the ALC to show different data for the same LCN and a different UOC.

2.3 ALTERNATE LCN ASSIGNMENT

a. The LSA-004, LSA-152, and the LSA-030 can be selected without regard for the ALC. In fact, ALC selection is not an option on the LSA-152 report. The LSA-030 selects on TM code disregarding LCN/ALC assignments. Because of this, ALC should be used to document alternate vendor or model (UOC) items, but under no circumstances should be used to document an alternate end item (PCCN). When documenting alternate maintenance concepts/configurations, which ultimately do not represent the final concept/hardware configuration, documentation and selection of the MAC by the TM Code will allow these items to be screened out of the selection process.

b. ALC coded assemblies, subassemblies, of piece parts are sequenced immediately following the breakdown of the basic item for which it is interchangeable when using the LSA-152, PLISN Assignment/Reassignment routine. This is applicable whether the alternate item is from an alternate model, i.e.

having a different assigned UOC, or is an alternate vendor component. Care must therefore be exercised to assign all the alternate items components/piece parts the same ALC, and to ensure that no break or gap in either the LCN structure or IC exist. A break in the items's breakdown structure, i.e., a missing indenture level, will not create an error condition, but will cause the alternate item to appear as part of the basic item.(See Figure 1). The Connector, Plug is different on each configuration. Since there is no B indenture documented for the "01" ALC structure, the "C" indenture "01" ALC connector plug is documented as part of the basic, "00", system and will have it's PLISN assigned in this manner. To avoid this situation, the "B" indenture Power Supply should be repeated, completing the Alternate structure (figure 2). Review the LSA-80, Bill of Materials List to validate proper structure of ALC assemblies.

c. Specific guidance for documentation of alternate assemblies in the LSAR should be received from the requiring authority, since this documentation may lead to "doubling" the spares requirements when requirements computations are performed.

d. When multiple alternate items are to be documented, the first to be sequenced will be the alternate with the lower assigned ALC, i.e., an item with an ALC "A" will appear before an item with an ALC "B", when both have the same LCN. When a break occurs in the structure of an ALC documented item or when another value of ALC is documented, these items will again be sequence/inserted within the basic system LCN ("00" ALC) structure. This will preclude the documenting of an alternate sub assembly within an alternate assembly, since instead of sequencing the alternate subassembly within the alternate assembly, it would insert the item back to the basic system (SEE Figure 3.) In this example there are two applicable circuit cards for the alternate "01" Controller Assembly. The "02" circuit card will not be assigned a PLISN as if it were under the Controller assembly, but rather it would be documented as part of the "00" controller assembly. To document the above situation, it is necessary to assign the alternate subassembly the next available LCN following the breakdown of the subassembly that it replaces and code the alternate subassembly with the same ALC as the alternate assembly. (SEE figure 4.)

2.4 FGC (WUC/TM FGC) VERSUS LCN ASSIGNMENT

a. The FGC assigned to the XB table is displayed as the Group Number on the MAC report, while the FGC used in the PMF (HK table) is not displayed in the formal RPSTL report portion of the summary. However, it is the prime sequencing key for the report generation. The matching FGC between the MAC and RPSTL is not necessarily contained in the Parts File for the identical LCN/ALC combination. The matched FGC is a throughput on the "D" section cards (FGC header) when the RPSTL report is generated. Specific guidance on FGC assignment is normally provided by the requiring authority (publications community), since a standardized method of FGC assignment for commodity types of components/items is normally established. These standardized assignments make it easier for the user in the field to cross-reference between different TMs of equipment maintained by that organization. For instance, engines may always be documented under an FGC of "04" across all Army helicopter types.

Figure 3. PLISN Assignment Of Alternate Subassemblies On Alternate Assemblies With Different ALCs
Figure 4. PLISN Assignment Of Alternate Subassemblies On Alternate Assemblies With The Same ALC

b. There are conditions when the FGC, that is documented in the LCN Master File, must be different from the code contained in the PMF for an identical LCN. Since the FGC is used for sequencing publications, it may be assigned in a manner to facilitate this development, rather than be in an unadulterated complete topdown generation breakdown, such as what is used for LCN/PLISN assignment. An example of such a situation would be a higher level RPSTL illustration, which depicts only one indenture of lower level parts. Some of these parts may be reparable with lower indenture(s) of components/piece parts beneath them. These reparable items' breakdown would be documented in another illustration, or possibly, in another manual altogether. When documenting these items by means of the LCN/PLISN, all reparable items must be broken down completely to piece-part level before beginning another indentured components/piece parts to the proper location of these items in the RPSTL by assigning an FGC that is greater than the FGCs assigned to all the items depicted on the higher level illustration.

c. When an alternate vendor assembly is to be documented in the MAC and RPSTL, a unique FGC should be assigned to this item even though the item may be contained in the LSAR under an identical LCN distinguished by ALC. An example of FGC versus LCN assignment to the Parts File is provided at figure 5. A comparison of file sequencing, based upon LCN/ALC with both PLISN and WUC/TM FGC sequence, is provided at figure 6.

d. Figure 7 illustrates a technique for assigning FGCs to both the LCN (XB) and PMF (HG). Notice that a distinct FGC is assigned to each reparable (illustrated) item in the LCN file. Each of these items will then appear as a separately, called-out item on the MAC. When the FGC is then assigned to the PMF, the same FGC that is assigned to the assembly (illustration) level is used for each item (reparable and nonreparable) that comprises the assembly.

e. Using this technique, the Item Number then becomes the primary sequencing criteria within an illustration. The LCN Master File and PMF FGCs will not match on LCN, but will "track" based on LCN and subordinate LCN relationships from the LCN and Parts files, respectively.

f. This technique will work for most illustrations. A RPSTL illustration review should be made when assigning FGCs to the PMF, since it is possible to illustrate smaller subassemblies completely within a higher assembly illustration. This is documented in the RPSTL data by using the TM IC. Standard practice calls for subassembly parts, documented in the illustration of an assembly, to be TM Indentured by "2". This will cause these parts to appear in the RPSTL with two leading periods (.) before the item names. If the FGC and illustration instructions provided by the requiring authority deviate from the actual hardware generation breakdown (engineering drawings) by requiring a more functional oriented approach, the LCN and subordinate LCN relationship between the files may not be strictly maintained with the assigned FGCs.

2.5 TM CODE

a. The TM Code can be assigned to the CH table (LCN Master File) and the HJ, HK and HL tables (Parts Master File). Use of the TM Code in the LCN

Figure 5. LCN Versus FGC Assignment

SEQUENCING ON LCN/ALC - PLISN - FGC
(LCN STRUCTURE 12222)

LCN SORT

	LCN	ALC	NOTE	FGC	PLISN
1.	A				AAAA
2.	A	A	1		AAAB
3.	A01			001	AAAJ
4.	A01AA			0101	AAAK
5.	A01AA	A	2	0101	AAAL
6.	A01AB			0102	AAAM
7.	A01AC			0103	AAAN
8.	A02			002	AAAP
9.	A02	A	1	002	AAAZ
10.	A02AA			0200	AAAQ
11.	A02AA	A	1	0201	AAA1
12.	A02AB			0200	AAAR
13.	A02AB	A	1	0202	AAA2
14.	A02AC			0200	AAAS
15.	A02AC	A	1	0201	AAA3
16.	A02AC	B	2	0200	AAAV
17.	A02AC01			02300	AAAT
18.	A02AC01	A	1	02301	AAA4
19.	A02AC01	B	2	02302	AAAW
20.	A02AC02			02300	AAAU
21.	A02AC02	A	1	02301	AAA5
22.	A02AC02	B	2	02302	AAAX
23.	A03			003	AAAY

PLISN SORT

1.	A				AAAA
2.	A	A	1		AAAB
3.	A01			001	AAAJ
4.	A01AA			0101	AAAK
5.	A01AA	A	2	0101	AAAL
6.	A01AB			0102	AAAM
7.	A01AC			0103	AAAN
8.	A02			002	AAAP
9.	A02AA			0200	AAAQ
10.	A02AB			0200	AAAR
11.	A02AC			0200	AAAS
12.	A02AC01			02300	AAAT
13.	A02AC02			02300	AAAU
14.	A02AC	B	2	0200	AAAV

1. ALCS REPRESENTING COMPONENTS TO ALT MODEL ITEM

2. ALCS REPRESENTING ALT VENDOR COMPONENT(S)
(LINKED TOGETHER IN PLISN ASSIGNMENT BY LCN STRUCTURE)

Figure 6. LCN - PLISN - FGC File Sort Example.

	LCN	ALC	NOTE	FGC	PLISN
15.	A02AC01	B	2	02302	AAAW
16.	A02AC02	B	2	02302	AAAX
17.	A03			003	AAAY
18.	A02	A	1	002	AAAZ
19.	A02AA	A	1	0201	AAA1
20.	A02AB	A	1	0201	AAA2
21.	A02AC	A	1	0201	AAA3
22.	A02AC01	A	1	02301	AAA4
23.	A02AC02	A	1	02301	AAA5

FGC PRIMARY SORT - PLISN SECONDARY

1.	A				AAAA
2.	A	A	1		AAAB
3.	A01			001	AAAJ
4.	A02			002	AAAP
5.	A02	A	1,3	002	AAAZ
6.	A03			003	AAAY
7.	A01AA			0101	AAAK
8.	A01AA	A	2,3	0101	AAAL
9.	A01AB			0102	AAAM
10.	A01AC			0103	AAAN
11.	A02AA			0200	AAAQ
12.	A02AB			0200	AAAR
13.	A02AC			0200	AAAS
14.	A02AC	B	2,3	0200	AAAV
15.	A02AA	A	1,4	0201	AAA1
16.	A02AB	A	1,4	0201	AAA2
17.	A02AC	A	1,4	0201	AAA3
18.	A02AC01			02300	AAAT
19.	A02AC02			02300	AAAU
20.	A02AC01	B	2,4	02301	AAAW
21.	A02AC02	B	2,4	02301	AAAX
22.	A02AC01	A	1,4	02302	AAA4
23.	A02AC02	A	1,4	02302	AAA5

3. THE TOP ALT FGC IS INCLUDED IN THE BASIC ILLUSTRATION WITH THE SAME ITEM NUMBER AS THE BASIC ITEM ITSELF.

4. THE ALT BREAKDOWN IS THEN NORMALLY DOCUMENTED UNDER A SEPARATE ILLUSTRATION(S).

Figure 6. LCN - PLISN - FGC Sort Example - Continued.

Figure 7. FGC Assignment In The LSAR Data Tables

file is optional to generate a proof MAC. It is used to distinguish specific tasks within an LSA candidate, which may be applicable to two separate MACs. TM Code selection of the MAC can be significant when a system level MAC report is required, which needs to document only the removal/replacement of a subordinate end item. In this case, the LCN of the end item would have the Replace task function entered with the TM Code of the system and the other maintenance functions, i.e., repair, inspect, fault locate, entered with the TM Code for the subordinate end item. This, of course, is applicable when separate organizational (-20) manuals are to be developed for the system itself and the end item within the system.

b. Use and assignment of the TM Code within the LCN file is much less restrictive than use in the Parts File. The preparing activity may control TM codes assigned to the LCN file without worrying about interfacing with a government ADP system. If the preparer does opt to utilize the TM Code to designate tasks to be contained in the proof MAC, he must assign the same TM code throughout the file to all CH Task Codes depicted in the MAC being developed. Then, LCN will no longer become the primary selection item for the LSA-004 report.

c. The TM Code entered in the PMF is assigned by the requiring authority. The TM code represents a TM Designation series for an RPSTL e.g., -20P, -34P, of the same TM series (TM9-2350-300-XXP)). The TM Code must correspond to a TM Code to TM Designation Index maintained within the Commodity Command Standard System (CCSS). The TM Code is a provisioning Key Data Element to all the other RPSTL data, meaning that without the TM Code in the PMF, the associated RPSTL data, i.e. Figure Number, Item Number TM IC, will not be displayed on the LSA-036 report and submitted to the requiring authority. The proof RPSTL report selection keys to TM Code for report generation.

2.6 LCN-IC AND IC.

a. There are two types of Indenture Codes (ICs) documented in the LSAR, which depict either a total system or end item relationship.

(1) The LCN-IC is used to depict a relationship of an item's application to the entire LSAR system based upon the assigned LCN. The LCN-IC is only assigned when a sequential LCN assignment method is utilized, where the indenture level cannot be determined by LCN alone.

(2) The IC is used to identify the hardware breakdown of an item's application to its provisioned end item. The IC can be either automatically assigned, based upon the LCN structure logic using a classical LCN assignment method, or by LCN-IC and the relationship of the provisioned end item to the total LSAR system.

b. The IC can be automatically assigned to the PMF (HG Table) using the LSA-152, PLISN Assignment/Reassignment process.

(1) When a sequential LCN assignment method is utilized, the LCN-IC must be entered in the XB table. The LCN-IC entered should represent the

indenture in relation to the total system (LCN), not the IC of the provisioned end item, if the user intends to utilize the LSA-152 system to assign PLISNs. For example, suppose the LSAR is developed for a main battle tank, and the requiring authority decides to manage the tank engine, which has a "C" indenture to the tank, as a separately provisioned end item, i.e. under a different PCCN. The engine will be documented in the LSAR as follows; a record will be placed in the XC table denoting the item is a separately provisioned end item, the LCN-IC would have been developed in the XB table as a "C", and the item will be in the HG table with two records in the HO table showing its relationship to the tank and to itself. (Note: Only subordinate end items are allowed to have multiple HO records mapped to multiple PCCNs in XC.) When the PLISN assignment routine is run on the tank, the ADP system finds the engines relationship to the tank from the LCN-IC (table XB), and assigns a "C" to the HG table IC (Figure 8).

(2) At the next indenture below the engine are the engine block and carburetor assembly. When the PLISN assignment is run for the engine, the ADP system will compare the engine block and carburetor assembly LCN-IC with that of the engine and assign the proper IC. Figure 9 shows this example. Since the ADP system will only build HO records to one PCCN for each part application record in HG, unless the item is a subordinate end items in which case it can have two, the ADP system will be able to determine which "C" indenture items are related to the engine and which are related to the turret. Note the IC of the Engine is only output "A" on the LSA-152, and LSA-036 but not updated in the HG table. This situation only arises for subordinate separately provisioned end items.

(3) Manual IC, PCCN/PLISN, and NHA PLISN assignment can be reviewed by using the LSA-080 report.

2.7 PROVISIONING CONTRACT CONTROL NUMBER (PCCN) RELATIONSHIPS.

a. The PCCN is a manditory selection on the LSA-152 and LSA-036 report, and is an optional selection LSA-032, LSA-080, LSA-126, and LSA-151 reports. When the provisioning data is entered, the ADP system should build HO records to tie the HG part application data back to their end items located in the XC table. A part application can have several Usable On Codes (UOCs) but can only have one End Item or PCCN. In other words, a part application (HG record) may have several HO records tying it back to several XC records, but all of the XC records must have the same PCCN. In the example below the LCN LEAA05AE is tied to UOC's CE1 and CD2 but both have the PCCN GLH850.

b. There can be only one LCN assigned to each PCCN in the XC table, but there may be multiple UOCs. See the example below. Both of the XC records have the same LCN, LEAA05, the same PCCN, GLH850, but different UOCs CE1 and CD2. The reason this is established in this manner is to avoid duplication of common parts. All common parts will be documented under the basic ALC item, and only parts peculiar to the alterant assembly will be documented under the alternate assembly. When the PCCN, GLH850, is selected parts under both UOCs CE1 and CD2 will be selected. See section 2.2 and 2.3 for more information on UOC and ALC assignment.

```
         1         2         3         4         5         6         7         8         9

----+----0----+----0----+----0----+----0----+----0----+----0----+----0----+----0----+----0----+--
--+
XC T850      LEAA05            00PCE1GLH850LH-850A/LHTEC850          AAAA  0001
XC T850      LEAA05            01PCD2GLH850LH-850A/LHTEC850          AAAB  0001

HO T850      P645472118539                        LEAA05AA          00LEAA05            00
HO T850      P645472118539A                       LEAA05AA          01LEAA05            01
HO T850      P68524DCT7900P4A2                    LEAA05AA00        01LEAA05            01
HO T850      P68524DCT7900P4A2                    LEAA05AA00        00LEAA05            00
HO T850      P645472123254                        LEAA05AC          00LEAA05            00
HO T850      P645472123497                        LEAA05AC00        00LEAA05            00
HO T850      P645472123497A                       LEAA05AC00        01LEAA05            00
HO T850      P64547805986                         LEAA05AE          01LEAA05            01
HO T850      P64547805986                         LEAA05AE          01LEAA05            00

HG 64547805986                         T850      LEAA05AE          01PA027 0001 C    Y  Y
B...
```

2.8 SUPPRESSION INDICATOR CODE (SIC). The SIC was used in the -2A software to suppress the assignment of PLISNs to subordinate end items. The -2B LSAR ADP systems suppress the subordinate end items by only allowing a part application to be tied to one PCCN in the HO table, with the exception of subordinate end items themselves which will have two. The SIC can still be used to stop PLISN assignment at any desired location.

Figure 8. PLISN Assignment With Sequential LCN Structure.
Figure 9. PLISN Assignment of Subordinate End Items With Sequential LCN Structure.

3. MAINTENANCE ALLOCATION CHART (MAC)

3.1 PURPOSE OF THE MAC.

a. The MAC is contained in appendix B of the Organizational Level Maintenance Manual (-20). It depicts maintenance authorizations and average maintenance times by function and maintenance level. It also contains a reference to peculiar tools and test equipment required against each maintenance function. The MAC consists of four sections developed in accordance with (IAW) MIL-M-63038 (TM). The proof LSA-004 report is capable of producing Sections II-IV.

(1) Section I, Introduction. This is developed IAW figure 20 of MIL-M-63038(TM).

(2) Section II, MAC. The proof LSA-004 report is formatted according to the requirements of this section.

(3) Section III, Tool and Test Equipment Requirements. The proof LSA-004 report fulfills the requirements to produce this section.

(4) Section IV, Remarks. The proof LSA-004 report fulfills the requirements to produce this section.

b. The draft MAC report contains all the maintenance levels and functions, as they are defined under the Task Code data element definition in MIL-STD-1388-2B. Man-hours in the report are rounded to the nearest hundredth of an hour. When a task is documented against a particular item, but the computation of mean man-hours for the function is not rounded to 1/100 of an hour, the man-hour field of the draft MAC will be filled with asterisks; however, on the proof MAC, a value of 1/10 of an hour will be displayed. If the man-hours are zero or are not entered against a proof MAC qualified task, asterisks will appear in the Man-hour column. When the LSA-020 report contains a tool Reference Number, which is not matched with a PMF Reference Number, SCC combination, asterisks will appear in the NSN column. The proof MAC contains the maintenance functions, as defined in MIL-M-63038(TM):

(1) Access, Disassemble/Assemble and Fault Locate times are included as part of the repair time.

(2) Remove and Install times are included as part of the Remove/Install time.

(3) Lubricate times are included as part of service times.

(4) End of Runway Inspection is included as part of Inspect time.

(5) Mission Profile Change, Package/Unpackage, Preserve, Operate, Transport, and Transportation Preparation are not included on the proof MAC.

c. An aviation MAC formatted IAW figure 21 of MIL-M-63038(TM) using the Operations/Maintenance (O/M) levels Aviation Unit Maintenance (AVUM)

or "O"; Aviation Intermediate Maintenance (AVIM) or "F"; and, Depot or "D" can also be produced from the LSAR.

3.2 MAC MAN-HOUR COMPUTATIONS.

a. For each maintenance level determined by the O/M Level subfield of the Task Code, the Mean Man-hours is calculated for all tasks with the same task function or consolidated task functions as follows:

$$M\text{-}Hm = \frac{\sum_{i=1}^{N} (TFi)\,(M\text{-}Hi)}{\sum_{i=1}^{N} TFi}$$

M-Hm = Mean man-hours
M-Hi = Total man-hours for task i (calculated by summing the man-hours for each SSC of Task i)
TFi = Task Frequency for task i
N = Total number of tasks performed

b. For each unique O/M level entry within an LCN, a separate maintenance function row is required. When the Task Frequency value for the only task function documented against an LSA candidate is zero, then the total man-hours for that task will be displayed in the Man-hour column of the MAC. Documentation of a task in this manner may be necessary when the only repair task against a higher level assembly consists in the removal/replacement of a lower indentured assembly. The man-hours should be documented against both assembly (REPAIR task function) and the subassembly (REPLACE task function), but in order to preclude "double counting" of man-hours to perform the same task under the assembly and subassembly, i.e., the LSA-001 report, a zero task frequency for the higher assembly with the repair task function is entered into the LSAR.

c. By reviewing the format of the MAC, it should become obvious the only way to properly allocate maintenance man-hours against a particular "GROUP" or WUC/TM FGC, is to document those task codes pertaining to an item against the item's LCN. It should also be noted that a Replace function is applicable to removal/replacement of the LSA candidate itself, and not of a lower indentured spare/repair part.

d. It is recommended data item description (DID), DI-ILSS-81140A, Maintenance Allocation Chart (MAC), be utilized in order to ensure an acceptable MAC, derived from the LSAR, is produced and delivered by the preparing activity.

3.3 RELATIONSHIP OF THE MAC AND TOOL AND TEST EQUIPMENT REQUIREMENTS SECTIONS.

a. The MAC section is derived directly from the CA or CH task analysis documentation for the selected LCN range or TM Code, respectively. When producing the Tool and Test Equipment Requirements section, the appropriate Item Category Codes (ICC) for these types of items must be entered on the report selection. These items (ICCs) are matched with the CG/EA record ICCs of the qualified Tasks.

b. When producing a draft MAC, any combination of ICCs may be entered in order to review/validate any group of support equipment or items required for the selected Tasks; however, when the proof MAC is developed, the ICCs should be limited to those categories which represent system peculiar tools and existing or new tool kits and outfits. It should not contain common tools as separately selected items.

c. A consolidated list of all tools/tool kits across all qualified tasks is generated (section III), and a numerical reference is assigned to this list in ascending part number sequence. This numerical reference is then included in the Tool and Test Equipment column of the MAC for every qualified task in which the referenced tool is utilized. The numerical reference is displayed on a line across from the task function listed on the MAC. On the Tool and Test Equipment Requirements section, under the Maintenance Category column, a consolidation of all maintenance levels requiring the particular tool/test equipment is displayed. This is determined by the O/M Levels subfield of the task codes requiring the item.

d. A consolidated list of all remarks for qualified tasks is generated in Section IV. Remarks are limited to applicable Section II (or TM-FGCs) and Maintenance Functions by Remarks Reference Codes (table CF).

3.4 MAC SOURCE DATA.

a. The MAC is a reflection of the results of maintenance planning. It does not provide either the analyst or the reviewer with a tool to assess the optimization of supportability requirements for the weapon system. By reviewing other LSAR output reports, the analyst may obtain a better picture of the true impact the system will have on logistics resources. For example:

(1) a. The LSA-001, Annual Man-hours By Skill Specialty Code and Level of Maintenance, will provide the analyst with a one or two-page summary of the total O/M man-hours required to support the weapon system. This data can be used to assess the new system impact on field/depot manpower by Military Occupational Specialty (MOS)/Wage Grade (WG).

b. The LSA-001 also provides the analyst with a one-line summary of all tasks requiring a given MOS/WG. Also provided on the report are a summary of MOS skill levels required, as well as any requirement for special training equipment to acquire the skill to perform the task. Review of this report may lead the analyst to request a detailed step-by-step task review by means of the LSA-015, Sequential Task Description, or a review of the E record

for training material requirements.

(2) The LSA-006, Critical Maintenance Task Summary, provides the analyst with a listing of tasks which exceed a report parameter in descending sequence of the selected parameter values. The report may be selected against four categories of data: task frequency; elapsed time; man-hours; or, annual man-hours. Again, as with the LSA-001 report, tasks depicted on the LSA-006 report as "high drivers" of the weapon system's logistics requirements may be reviewed in great detail, and on an exception basis, by requesting an LSA-015 report against those tasks that are contained in this report.

(3) The LSA-007, Support Equipment Requirements; LSA-011, Requirement for Special Training Device; LSA-012, Requirements for Facility; and, LSA-014, Training Task List, may be used to determine, again on an exception basis, those tasks requiring greater review via the LSA-029 report, as well as those tasks requiring additional justification.

b. The above report utilizations represents only one technique to review the information that is available using the LSAR and the Joint Service LSAR ADP System. Ad hoc queries can also be utilized (if user's ADP system has the capability) as a review tool.

4. PROVISIONING REQUIREMENTS

4.1 PREPARATION OF THE PMF.

a. In order to ensure the LSAR PMF is accurate and complete to perform provisioning, e.g, to generate an LSA-036 report, there are several review and analysis reports which can be used to ascertain the file condition. These are:

(1) LSA-016, Preliminary Maintenance Allocation Chart (PMAC)

(2) LSA-027, Failure/Maintenance Rate Summary

(3) LSA-080, Bill of Materials

b. The PMAC is a more detailed depiction of the maintenance concept.

(1) The PMAC displays each LSA candidate having Task Functions "A" "N" "R", "S" or "W", and computes the average man-hours for each candidate by function and maintenance level similar to the MAC. In addition, the PMAC can also display a listing of all the repair parts or "Y" ICC items, which are documented in the LSAR for the tasks functions of Replace and Repair (other support items can be displayed based on ICCs). These repair parts are displayed by item name and reference number. A comparison is then made of all qualified tasks for the LSA candidate to determine the lowest maintenance level which can remove/replace the repair part. This maintenance level is also displayed on the same line with the repair part. The analyst can then use this information to assign the SMR to these nonreparable items.

(2) By reviewing the task functions and associated maintenance levels on the PMAC, the SMR for the LSA candidate can also be assigned. The LSA-016 report can also be used to validate the LCN/Reference Number assignment between the LCN and PMF. When a particular LSA candidate is qualified from the LCN file for inclusion in the PMAC report, the report process will cross via LCN and Reference Number to the PMF, in order to extract and display certain parts file data. If there is no match between the LCN and PMF on either LCN or Reference Number, the PMF data will not be displayed on the LSA-016 report.

c. The LSA-027 report displays a comparison of the Failure Rate, Replacement and Repair Task Codes, and their associated Task Frequencies against each LSA candidate and displays the SMR, MRR, and MRRII from the PMF to validate this critical provisioning data.

d. The LSA-080 report provides a detailed analysis of the provisioning data contained in the PMF. The Bill of Materials Report, Part I, identifies assembly level items, and a one indenture lower listing of the spare/repair parts that comprise the assembly. The LSA-080 report can be used to check for completeness of the PMF against assembly drawings and may also be useful for RPSTL data development:

(1) The report is sequenced by the assembly level reference

number, so that it can track with a drawing package provided in drawing number sequence. Basic data related to the development of a properly structured PPL is also edited.

(2) An LSA-80 report should accompany an LSA-036 report when performing an LSA/LSAR/Provisioning Review.

4.2 UTILIZATION OF THE AUTOMATIC PLISN ASSIGNMENT ROUTINE.

a. The LSA-152 summary assigns/reassigns provisioning related control and reference data to Table HG, PLISN, Indenture Code (IC), NHA PLISN, and Table HH, Next Higher Assembly (NHA) PLISN, based on selection parameters. The summary will depict the file content before and after the assignments or reassignments are made. PLISNs are assigned using the EBCDIC collating sequence.

b. It is necessary that the LSAR be properly structured using either a uniform (nonbroken) LCN structure when applying either a classical or modified classical LCN assignment technique; or an LCN-IC (Table XB) assignment without missing or unlinked indenture levels, when LCNs are assigned using the sequential method. Using the LSA-080 report, the analyst can review the file for correct structure, or by using the LSA-152 report detect error conditions in file structure.

c. The LSA-152 report consists of two parts. Part I will only be output when an error in file structure is encountered, or when the PLISN assignment (with selected PLISN spacing) exceeds the limit of 9999 for the proposed assigned PMF candidates. When these occur, the error location in the file is depicted on the report with a display of the unlinked or remaining file segment. If an error condition does occur, the LSA-152 process will not assign any PLISNs, but will continue processing to determine whether additional error conditions exist in the file. Validated LSAR systems will be required to have the capability to produce an error listing for the LSA-152 report. However, the format, messages and explanation of those messages for the error listing is vendor dependent. Part II of the report reflects the results of the PLISN assignment/reassignment; only a Part I or a Part II will be produced in a processing cycle.

d. The report selection for PLISN assignment occurs within a PCCN and optionally Start and Stop LCN range. ALC is not a selection option. Alternate LCNs must be considered when assigning the basic LCN PLISNs because alternates may have basic items as NHAs. A row in table HO creates the end item (XC) to part application (HG) relationship. One HG row cannot be related to multiple PCCNs except when the item is a subordinate end item. When the item is a subordinate end item, HO would have one row depicting the end item relationship (end item and item LCN-ALCs are the same), and one or more rows showing the relationship to the system. Having the end items located in the XC table, and the fact that no other item except a subordinate end item can be linked to more than one PCCN, makes the suppression indicator code obsolete.

e. Since there are unlimited "correct" structuring techniques using the ALC, there is no system edit to detect errors in file structure when the ALC

is utilized. ADP systems will detect a missing indenture level for alternate assemblies and sequence them back to the basic "00" LCN structure. Reference section 2.3 of this document of the effects of ALC coding during PLISN assignment. ALC assignment errors can only be detected by a manual review of the LSA-152 or LSA-080 reports.

f. There is a wide range of options when using the PLISN assignment routine:

(1) NHA PLISNs and/or ICs may be assigned to the PMF, if this option is selected on the 152 report.

a. If the file is constructed using the classical/modified classical LCN assignment technique, the IC may be assigned, provided the LCN structure exists in the XA table. Asterisk ICs may be assigned to the parts file based on the ICC of "9" representing kit components being previously assigned (Table HG). An option is also available to assign a constant NHA PLISN indicator of "N" against each NHA PLISN assigned to the HH table.

b. When a sequential LCN assignment method is utilized, the LCN structure field is left blank in the XA table, and the LCN-ICs must be entered on the XB table in order to assign NHA PLISN. The IC (Table HG) should be that of the provisioned end item, while the LCN-IC should be related to the system level in the LSAR.

(2) When assigning PLISNs for a subordinate end item the IC is not assigned to the HG table. For example, a separately provisioned end item at the "C" indenture to the system (LCN-IC,Table XB) will have an IC of "A" come out on the LSA-152, and LSA-036 reports but will keep its IC of "C" assigned under the system end item assignment. All components to the subordinate end item will then have their IC assigned as before. For example, a "D" indenture item under the "C" indenture subordinate end item will have a "B" IC assigned when PLISN assignment is run on the "C" indenture subordinate end item. See section 2.6 for a more detailed explaination.

(3) PLISNs may be assigned only to items that qualify by PTD Selection Code for a specified Provisioning List (PL) or lists (Table HG).

(4) PLISNs may be assigned in either topdown (LCN) or Reference Number sequence. When PLISNs are assigned in Reference Number sequence, the system will lock out the option to assign NHA PLISNs/ICs. Default is topdown.

(5) PLISNs may be assigned as either all alphabetic, alphanumeric, numeric, or, first position alphabetic, then second through fourth position numeric. Default is alphanumeric.

(6) A starting PLISN value may be specified on the report selection card.

(7) PLISN values of "AAAA" through "AAAHZ" may be reserved for the system level and separately provisioned end items (Model Reserve). If this option is selected, a starting model PLISN value may be specified (within the

given range). If none is selected, the first model PLISN assignment will be "AAAA".

(8) PLISNs may be assigned to overlay old PLISN values established in the file; to overlay PLISNs and to move the old PLISN value to the Prior Item PLISN field; or to assign PLISNs only to items that do not have a PLISN value already established (insert) (Insert/Overlay selection on report). If the insert option is chosen, PLISNs already assigned to the file must match with the LCN structure or LCN-ICs of the selected LCN range.

(9) It is possible to skip PLISN values between the assigned PLISNs for future use, when the item is impacted by Design Change Notice or Engineering Change Proposals, or when the item having PLISNs assigned is not fully broken down to piece part level. This option cannot be utilized if the insert option (paragraph h) is in use. PLISN gaps may be as great as 1,121.

(10) PLISNs may be assigned to items based upon the Data Status Code (Table HG) contained against the qualified item. This can be useful when performing incremental provisioning on an LSAR that is not fully mature.

(11) LCN structure and System 036 are no longer selection options.

4.3 DEFENSE LOGISTICS INFORMATION SYSTEM (DLIS) SUBMITTALS.

a. The LSA-032 report summary provides a cross-reference between reference numbers selected for provisioning screening and the submitter's control number. DLIS screening is specified by MIL-STD-1388-1A. This summary provides a valuable tool once the items have been screened through DLSC files, and the screening results are received as the DLIS results are sequenced by submitter's control number.

b. There are data elements located on the LSA-032 that are not contained in the LSAR. The majority of these codes are contained in DOD 4100.38-M, Department of Defense Provisioning and other Preprocurement Screening Manual.

(1) Document Identifier Code (DIC). A three-position alphanumeric code which is used for identifying interservice agency or intraservice agency logistic transactions. On part II of this LSAR report the DIC should always be "LSR" to denote reference number and CAGE screening requests. Items may be excluded from DLIS screening if an entry showing a screening result is already contained in the DIC field for the reference number and CAGE.

(2) Priority Indicator Code (PIC). A single numeric code used to designate the required priority to be applied to processing transactions (see DOD 4100.38-M).

(3) Activity Code. A two-position alpha code identifying a DOD activity, Federal agency or other authorized government agency for cataloging, standardization or other management purposes (see DOD 4100.38-M).

(4) Destination Code. A five-position alphanumeric code used in conjunction with the activity code to register the address data for recipients

of the results of provisioning screening (see DOD 4100.38-M).

(5) Output Data Request Code (ODRC). A numeric series of established sets of data (Defense Integrated Data System output segments) identified by specific ODRCs and available for extraction from DLSC files for provisioning and preprocurement screening purposes (see DOD 4100.38-M).

(6) Single/Multiple Output Code. A numeric code used by the submitter to indicate whether the results of screening are to be furnished to one or all of the recipients as registered under the applicable activity code and destination code (see DOD 4100.38-M).

(7) Submitter's Control Number. A 17-position computer assigned alphanumeric field peculiar to provisioning and preprocurement screening transactions which is used to control and reference the transactions. The number consists of a four position julian date (YDDD), and a unique sequential 13 position number assigned for each reference number and additional reference number package which is to be screened.

(8) Statistical Indicator Code. A code designating whether data submitted for screening is required for provisioning or other services (see DOD 4100.38-M).

(9) DIDS segment code. This is the number of inputs segments that are required by DILS for each record. This should always be a "2" to represent a fixed length record LSR (DIC) submittal.

(10) Package Sequence Number (PSN). The PSN is a three-character code used to indicate the quantity, sequence and interrelationship of cards related to a line item as within a package (i.e. applies to the same submitter's control number). If all line items submitted for screening are individually sequence in the submitters control number field, the PSN will always be "Z01". For reference number screening (DIC of "LSR") a maximum of 25 reference numbers may be submitted under the same SCN. In this instance the first record would have a PSN of "A01", the second "A02", the third "A03", etc, through "A24", and the last (25th) record would be "Z25". The last record in any package submitted under one SCN will always contain a "Z" in the first position of the PSN.

c. This report may be selected by either LCN or PCCN. At least one qualified Reference Number/CAGE combination must exit between the LCN range in order to produce an LSA-032 summary. When selected by LCN range this report may have items from multiple PCCNs. The TAPE option results in an 80-column file of part II information. The report is sequenced in ascending SCN. On the first line is information about the Prime Reference Number and the item's LCN/ALC and SMR of the first appearance. Within this item are listed all additional reference numbers (ARN) in ascending ARN sequence. The report is processed as follows:

(1) Items may be excluded from the report by already having a screening result displayed in the DIC field. This means that if suppression is selected, any item that has a DIC code in the database will not be screened

again, and therefore, not output on the report. Items may also be excluded from the report by having a result in DLIS Screening Result Code (DSRC). The ADP system should allow suppression of up to five codes, A, B, C, D, and E. If an item contains one of these codes, i.e. "A", and "A" is selected to be suppressed on the selection card, then any item having an "A" DSRC will not come out on the report.

(2) Part of the submitter control number is the PCCN/PLISN. The PLISN used is the lowest EBCDIC valued PLISN for the item within the selected PCCN/LCN range (the Same As PLISN field is blank). If no PCCN/PLISN is recorded for an item, then a Type "1" error is displayed. No rows of data for the item are placed on part II.

(3) If ARN Select (ARN SEL) is "YES" and the item has more than 24 ARNs, error Type "2" is displayed. The first 24 ARNs in ascending reference number sequence are placed on part II of the report.

(4) If a specific SOURCE CODE is selected and the SMR is not contained against an item, at its first appearance, error Type "3" is shown and the item is disqualified from part II. The source code may be selected by its first position only in which case all corresponding second positions would qualify. For example, if you select "P" source code, that would qualify "PA", "PB", "PC","PD","PE","PF", and "PG" source codes.

(5) If TYPE SCREEN CODE is "F" or "S", and if ARN SEL is "YES" and if an Additional Reference Number matches the prime Reference Number, then error type "4" is displayed. Only the duplicate ARN is disqualified from part II. In part II of the report, columns 41 and 42 are always left blank for "F" or "S" type screen.

(6) If TYPE SCREEN CODE is "P", and either the reference number category code (RNCC) or reference number variation code (RNVC) is missing for the reference number/CAGE (in HA) or if ARN SEL is "YES" and there are any additional reference number and CAGEs (in HB), then error Type "5" is displayed. If the RNCC/RNVC is an ARN, only the ARN is disqualified from part II. If the RNCC/RNVC is the prime reference number, the entire item is disqualified from Part II.

4.4 PROVISIONING PARTS LIST INDEX.

a. The LSA-151, Provisioning Parts List Index (PPLI) provides a cross reference between reference numbers and the applicable PLISN of the provisioning list as required by MIL-STD-1388-1A. It provides a ready reference of usage and location within the provisioning list for a given reference number.

b. In order to produce an LSA-151 summary at least one row of information must be contained within the selected LCN range/PCCN. When selected by LCN, this report may be across multiple PCCNs. The report can be generated in reference number, LCN, or PLISN sequence. Additional data which further describes the item at its usage level(s) are provided for the user's information (i.e., item name, quantities, SMR, etc.).

c. The NHA Reference Number and CAGE are determined by the item's NHA PLISN (HH Table) with an "N" NHA Indicator, and one indenture less than the item. The HG Item's keys are compared to HH keys to find the NHA PLISN. A search for this PLISN is conducted in the HG table to find the NHA. Both the PLISN and NHA PLISN must have the same PCCN (found in XC table through HO). The HG table key Reference Number and CAGE containing the PLISN matched to the NHA PLISN is the NHA reference number and CAGE.

4.5 LSA-036 SYSTEM.

a. This report is a summary of those data recorded on the data tables identified for provisioning requirements. The summary contains that data required for review at various provisioning conferences (e.g., long-lead time items conference, provisioning conference, etc.) and is used in the selection procedures to identify repair parts requirements in support of the equipment to be fielded.

b. The minimum data required to establish a PLISN record are the PCCN, PLISN, Reference Number, CAGE, UOC, LCN, ALC, LCN Type and EIAC. These satisfy the key data elements of the XC, HO, HA, and HG data tables in -2B which are required for a PLISN record. These minimum data are less than the minimum data needed to establish a PLISN record in the CCSS PMR (Table II). Using the optional LSA-036 part III Army Edit Routine will ensure that minimum data requirements for CCSS processing are contained in the LSA-036 report.

4.5.1 REPORT SEQUENCE. The first record on the LSA-036 summary is the report header. Following this, the report is sequenced in ascending PLISN. Within PLISN records are sequenced in ascending CFI. Within CFI records are sequenced in ascending TOCC in the following order: D or G before M, Q, or L. Within TOCC items are sorted in ascending CSN.

4.5.2 REPORT FORMAT. The data format of the LSA-036 is contained in figure 10. When an LSA-036 is generated, all data contained in the PMF that is applicable to a PLISN record is output. A basic flowchart of the LSA-036 is contained in figure 11.

4.5.3 REPORT OPTIONS.

a. The summary will satisfy the deliverables cited in MIL-STD-1388-1A (taken from MIL-STD-1561). These deliverables or Provisioning Technical Documentation (PTD), which were under separate Data Item Descriptions (DIDs) under MIL-STD-1388-2A, are now under one DID, DI-ILSS-81285. The PTD lists are as follows:

a. Provisioning Parts List (PPL)
b. Short Form Provisioning Parts List (SFPPL)
c. Long Lead Time Items List (LLTIL)
d. Repairable Items List (RIL)
e. Interim Support Items List (ISIL)
f. Tools and Test Equipment List (TTEL)
g. Common and Bulk Items List (CBIL)
h. Post Conference List (PCL)

i. System Configuration Provisioning List (SCPL)

Figure 10. LSA-036 Report Format.

Figure 11. LSA-036 System Flowchart.

b. The report may be selected to perform review only, that is without updating either the LSAR PMF or the LSA-036 system PBF. This option may be utilized in two ways: A review report may be generated, which is a completely independent and complete Provisioning List (PL), i.e., is not bumped against the Provisioning Baseline File (PBF); or, the report may be generated for review, which consist of change transactions only which does not update either the PMF or PBF. A standard, approved PL should be run with the option to generate a electronic output and to update the LSAR files. A more complete description will be provided later this chapter.

c. When an PLISN item is qualified by basic PCCN selection, it must be further qualified by matching through table HO to at least one selected Usable On Code (UOC). The UOCs are then displayed on the LSA-036 D cards. Other UOC selection options are:

(1) Multiple Configuration Usable On Code. A three-position alphanumeric code that indicates the configuration(s) of a system/equipment on which the item under analysis is used based on the UOC (DED 501) assignments. The generated combinations of model UOCs is shown on the header page of the LSA-036. This was a good idea but impractical because of the exponentiality of the combinations of UOCs. This is not required for -2B validation although some ADP systems will generate this to some degree.

(2) Full Effectivity UOC Suppression. If the user specifies that when the selected UOCs match a qualified record on every UOC, then no UOC are displayed on the D card. These are matched from table HO to the selected UOCs. (For all UOC combinations of a PCCN in XC).

(3) Serial Number UOC (DED 375) display. If the user documents Serial Numbers for a model and the associated Serial Number UOCs (Table XD), and also documents each items relationship to the Serial Number UOCs via table HN, then these UOCs are displayed on the "D" card instead of the XC/HO UOCs. On the LSA-036 header page, a display is made of the following:

ITEM DESIGNATOR (XC)	SERIAL NUMBER FROM (XD)	TO	UOC (XD)
C18	SN001	SN015	A
	SN017	SN017	B
	SN062	SN071	C
C18A1	SN016	SN016	E
	SN018	SN061	F

d. Subsequent UOC and PTD Selections. The selection criteria that cannot be narrowed are the UOC and Provisioning Technical Documentation (PTD). For example if UOCs of CE1 and CD2 are selected on the first 36 selection, all future selections must contain these UOCs. Any attempt to narrow UOC selection should result in the error message similar to "CANNOT NARROW UOC SELECTION". PTD selection is accumulated, meaning that if a PPL is selected on the first run, and a LLTIL is selected on the second, any changes to the PPL data will come out on the LLTIL. Any of the other report options, e.g., QTY/EI Calculation, Overhaul PLISN creation, or Change Authority selection,

may be changed between selections.

e. Using the LSA-036 system, the Quantity Per End Item (QPEI) can be automatically computed, based upon either options 1, 2, or 3 Quantity Per Assembly (QPA). The QPEI option must match the QPA option assigned if the QPEI values are to be valid. The Army will always use option 1 QPA, which requires that a QPA be entered for each component/piece part and an assembly be broken out completely for each application. See section 4.5.6 of this document for further explanation of QPEI processing.

f. Overhaul PLISN (DED 258) and Overhaul Replacement Rate (ORR) DED 281) Assignment. The overhaul PLISNs may be assigned during the LSA-036 report preparation based on the item having a P- source code, an ORR entry, and at least one of its higher assembly PLISN having an SMR Code of P--D-. Only those higher assembly PLISNs with and SMR code of P--D- will be assigned overhaul PLISNs. The ORR is an estimate of the percent of time that a support item will be replaced at the NHA during Overhaul. It is manually entered in the HH table against its NHA. This base ORR of the item is multiplied by the QPA for each succeeding indenture level, beyond the NHA, using the following approach for assignment:

PLISN	IC	SMR	QPA	NHA PLISN	NHA-IND	ORR
CFFF	F	PADZZ	0002	CEAA	N	005
CEAA	E	PAODD	0002	CDEE	N	002
CDEE	D	PAFDD	0003	CCDD	N	
CCDD	C	PAOHH	0001	CB12	N	003
CB12	B	PAFDD	0002	AAAA	E	006
AAAA	A	PAODD	0001			

For PLISN CFFF, the Overhaul PLISNs and associated ORRs are:

OVERHAUL PLISN	ORR	
CEAA	005	
CDEE	010	= 0002 (QPA of CEAA) * 005
CB12	030	= 0003 (QPA of CDEE) * 0001 (QPA of CCDD) * 010
AAAA	060	= 0002 (QPA of CB12) * 030

In this example, PLISN CEAA is the items immediate NHA PLISN and therefore no calculation is needed. The PLISN CCDD is disqualified because it is SMR Coded PAOHH. These Overhaul PLISNs will come out on consecutive LSA-036 C cards with the items actual NHA having an "N" NHA indicator coming out on the 01C card.

g. Change Authority Number (CAN). Up to six CANs may be selected for the LSA-036 report. Only those items matching the CAN(s) in the HP table will be selected. This report is called a Design Change Notice (DCN). When a DCN is run, all PLISN record changes (A-K cards) which have occurred against a PLISN record that matches on the selected CAN, are output. The QPEI cannot be recomputed during this selection, nor can the Same As PLISN be redesignated. This is also true of any selection that does not contain a full file.

h. PLISN range selection. The user may select up to five Start and Stop PLISN ranges for inclusion on the LSA-036. Both the Start and Stop PLISN and all qualified PLISNs between are included on the report. All other PLISNs are excluded.

i. Part III selections. The two optional part III selections are the Army edit Routine (option 1) and the Air Fore L card Merge (option 2). These options are explained in more detail later in this chapter.

j. Output options are combinations of the following; live run without headers (which will allow QPEI, ORR, calculations, Same as PLISN recognition and update the baseline file and the LSAR data tables); test bump without headers (which will look exactly like the live run except does not update the baseline file or data tables); database dump without headers (this will be a straight dump of the LSAR data base without any calculations); and all of the above with headers.

4.5.4 CONTROL DATA. The report will display the following provisioning report control data not contained in the LSAR:

a. Card Sequence Number (CSN). A two-position numeric code which is used to sequence multiple data input cards for a specific card format indicator. The initial card entry is coded 01. Subsequent cards are coded 02-99.

b. Card Format Indicator (CFI). A one-position alphabetic code: A-H, J-M used to identify a card format and content.

c. Reference Designation Overflow Code (RDOC). A one-position alphabetic code: A and B used to link a long Reference Designation which exceeds 32 characters. Code "A" is entered against the first 32 characters, and code "B" is entered against the last 32 characters.

4.5.5 PROVISIONING BASELINE FILE (PBF).

a. The PBF is a file within an LSAR ADP system, which is only accessible through the LSA-036 system. It is an exact image of the data, which is delivered to the requiring authority. The PBF contains all provisioned end items included in the LSAR.

b. Each PCCN contained in the PBF includes all previously selected provisioning lists. Updates against a PCCN will reflect changes from the PMF made since the last LSA-036 processing cycle. The items included in the PBF must match at least one of the PTD Selection Code subfields from the LSAR to qualify. If an item qualifies under more than one selected provisioning list, only one consolidated file is maintained and updated. The LSA-036 hard copy report summary page will list the current and all previously selected PLs.

c. A PBF can be developed against any PL. For instance, if an LLTIL is required 2 years before generation of the completed PPL, this list can be established in the PBF, and updates to the LLTIL can be provided for the time between its delivery and the delivery of the PPL. A reserved set of PLISNs can be used for these items, and prior to delivery of the PPL, these PLISNs

can be reassigned to the appropriate locations within the PPL. At this point, no update of the PBF should be requested and only hard copy review LSA-036 reports should be prepared until the PPL is reviewed by the requiring authority. After approval when the PBF is updated with the PPL submission, the LSA-036 report would contain the LLTIL items incorporated into the PPL and delete PLISN transactions for the long lead items under their reserved PLISNs.

d. The PBF serves as the input file when LSA-036 update transactions are to be generated. It consists of a header record, which contains the information from the most recent LSA-036 report selection to include, UOCs, QTY/EI option, and type of output. It also contains a record of previous PLs selected. When selecting an update LSA-036 report, the UOCs entered must be equal to or greater in content than the UOCs entered on previous selections against the PCCN, and the UOC suppression must be identical to previous selections for that PCCN or the report will reject. The PBF file contains all PCCNs qualified from the LSAR and is sequenced in ascending PCCN/PLISN.

4.5.6 QPEI CALCULATION.

a. The LSA-036 system can compute QPEI based upon the Quantity Per Assembly (QPA) option chosen when quantities were assigned. There are three QPEI options to go along with three QPA options. These options will be discussed in greater detail in this chapter.

b. Within the LSA-036 system, the QPEI calculation is performed before final qualification of a PLISN record for inclusion on the LSA-036 report.

4.5.6.1 OPTION 1 QUANTITY PER END ITEM.

a. Normally the Army will utilize option 1, QPA/QPEI. For this option each part is rolled up at each location (part application) and then each location is summed up to give the total QPEI for that item. Figure 12 shows an example of option 1 processing. Notice that the every part in the system in broken out to the piece part level.

b. For all QPEI options, the QPA contained on LCNs with ALCs other than "00" are not included in the grand total for a reference number, unless there are no "00" ALCs for the item. In this case, all ALC subtotals are summed to determine the QPEI. An example of the QPEI computation, based on combinations of "00" and nonbasic ALC applications, is depicted in figure 9. Note: Items with asterisk ICs are also not included in the QPEI total.

FIGURE 12. Option 1 Quantity Per End Item (ARMY)

c. The formula for option 1/option 1 QPA-QPEI is as follows:

$$QPEI = \sum_{i=1}^{N} \left[\prod_{j=1}^{M} QPAj \right] i$$

Where:
N = Number of applications for unique part
i = Application of unique part
M = Number of indenture levels
j = Indenture level of application

APPLICATIONS OF REFERENCE NUMBER 1430-0926

PLISN	IC	LCN	ALC	SAME AS PLISN	1 SUBTOTAL	2 QPEI
AAKN	C	00208		----	4	60
AALY	D	0030602	A	AAKN	10	REF
ABCC	E	0040802AA		AAKN	24	REF
ABLD	E	0060201CC		AAKN	32	REF
ACFR	*	00703		AAKN	--	REF
ADCM	E	00801AA01	B	AAKN	14	REF

1. Subtotal calculated by multiplying qpa by all NHA QPA(S).

EXAMPLE:

PLISN	IC	NHA PLISN	QPA
AAAA	A	----	1
AAYQ	B	AAAA	1
AAZF	C	AAYQ	2
ABBL	D	AAZF	4
ABCC	E	ABBL	3

SUBTOTAL FOR PLISN "ABCC" EQUALS (3 x 4 x 2 x 1 x 1)

2. QPEI does not include PLISNS "AALY" AND "ADCM" subtotals. A subtotal is not computed for PLISN "ACFR" because of the asterisk IC. Subtotals are added together to determine QPEI (32 + 24 + 4).

FIGURE 13. QPEI roll-up for Multiple Applications Under Blank and Nonblank ALC.

Figure 14. Option 2 Quantity Per End Item (Navy).

4.5.6.2 OPTION 2 QUANTITY PER END ITEM.

a. The option 2 QPA/QPEI combination is primarily utilized by the Navy. The primary difference between this option and option 1 is that the option 2 QPA, represents a roll-up of the assembly piece parts, which includes the totals for the subsequent appearances of the assembly. Intermediate totals, which are entered by the analyst in the QPA field, are merely added together using this option. A sample of this calculation is shown in Figure 13.

b. The following formula applies for option 2 QPA/QPEI:

$$QPEI = \sum_{i=1}^{N} QPAi$$

Where:
N = Number of applications for unique part
i = Application of unique part

4.5.6.3 OPTION 3 QUANTITY PER END ITEM.

a. The option 3, QPA/QPEI, requires that the LSA-036 system generate assembly breakdowns, where only the "first appearance" or application of the assembly is completely broken down to piece part level. These generated breakdowns are then used to compute the QPEI for each of the items applications. This is performed by determining what items are assemblies (have lower indentured parts), and then by means of the Same as PLISN, determining whether or not these assemblies are "broken out" at their subsequent appearance(s). When it is detected the subsequent appearance is not broken out, the first appearance breakdown is then generated in the file following the subsequent appearance assembly PLISN record by using this basic PLISN, and then appending to it the PLISN assigned to the assembly components in the first appearance breakdown. Utilizing this "mother PLISN" and the IC to maintain descending family tree relationships, the breakdown legs of the generated piece parts are then subtotaled to the reference number QPEI total. The "mother PLISNs" ICs are reassigned at the generated breakdown based upon the difference between the IC of the first appearance and subsequent appearance(s) of the assembly.

b. This technique of generated breakdowns is illustrated in figure 15. The LSAR file condition requiring the use of this technique is primarily used by the Marine Corps, although it does provide an efficient/space saving method of file construction.

Figure 15. Option 3 Quantity Per End Item (Marine Corps)

c. The following formula applies to option 3 QPA/QPEI:

$$QPEI = \sum_{i=1}^{N} \left[\left[\prod_{j=1}^{M} QPAj \right] + \sum_{k=1}^{P-1} \left[\prod_{l=1}^{Q} QPAl \right] k \right] i$$

Where:

N = Number of applications of unique part (first appearance of NHA only)
i = Application of unique part
M = Number of indenture levels
j = Indenture level of application of first appearance
P = Number of applications of unique assembly containing unique part
k = Application of unique part (other than first appearance of a higher assembly)
Q = Number of indenture levels at assembly application (other than first appearance of a higher assembly)
l = Indenture level of application (other than first appearance of a higher assembly)

Note:

(1) The Greek "Σ", or SIGMA, represents the mathematical symbol for a series summation, while the symbol "Π", or TAU, is the mathematical expression for a series multiplication.

(2) The first product and summation in this formula are performed against the first appearance of an item. These applications are documented in the LSAR hardware breakdown. The second product and summation are performed against subsequent appearances of an item which are not documented in the LSAR (e.g., will not appear on a PPL). These item applications are identified by the first appearance of the item in an assembly (either NHA or higher), and the Reference Number of the higher assembly containing the unique part appearing in multiple applications.

4.5.7 SAME AS PLISN.

a. Same as PLISN (DED 364). The QPEI is one of two data elements that assigned or updated during LSA-036 processing. The other, the Same as PLISN (SAP), will be assigned during LSA-036 summary preparation. The SAP will be automatically updated in the PMF (HG table) and the PBF except if a the selection is made not to update the baseline or master file. The SAP is the lowest EBCDIC value PLISN of all part applications for a given reference number.

b. The Same As PLISN is used to determine the QPEI. After the QPEI calculation is performed, the actual QPEI is entered on the lowest value PLISN and reference requirements for subsequent or higher valued PLISN applications of the same reference number are determined, and the appropriate reference code (REF, reference; or, REFX, reference assembly) is assigned to the QPEI field. The REFX code is assigned using option 2, QPEI, in the same manner as

the determination of the nonbreakout of a subsequent appearance of an assembly. Figures 9 and 10 also depict the assignment of Same as PLISN and REF/REFX.

4.5.8 UPDATE TRANSACTIONS.

a. LSA-036 Update and Design Change Notices. There are five basic types of LSA-036 updates which can result when LSAR data is added, changed or deleted affecting PL's previously delivered. These transactions can be automatically generated using a validated LSAR ADP system by establishing baseline records upon initial submission of the LSA-036. These transactions are based upon a comparison of the current LSAR provisioning oriented data tables and provisioning data baselined by a previous LSA-036 submittal.

(1) Standard Data Update. For each LSA-036 card affected by data which has been added or changed since the previous PL delivery or LSA-036 update, mandatory data, i.e., PCCN, PLISN, CSN, and CFI, and "M" TOCC and the added/changed data only are entered. If data has been deleted, a "G" is entered in the TOCC and in the left most position of each field deleted on the appropriate LSA-036 card. Data deletions and changes/additions occurring on the same LSA-036 card will require both a change and deletion card for the appropriate data. It should be noted that "T" TOCC is not used by the automated LSA-036 reports and only apply to mannually prepared LSA-036 reports.

a. If all data on an LSA-036 CFI is deleted, a delete transaction will be generated consisting of the PCCN, PLISN, CSN "01", CFI (Except A), the key data associated with that CFI, and a "G" TOCC. Conversely, if data is contained in the PMF which does not appear in the PBF, and this data would cause a new LSA-036 record, an "M" TOCC will be gnerated for the added card record. TOCCs will only be displayed for established PLISN records. A new or "first time" appearance of a PLISN will always have a blank TOCC.

b. When an entire PLISN record is deleted (HG record), a delete transaction will be generated consisting of the appropriate PCCN, PLISN, CAGE, Reference Number, and a "D" TOCC on the "01A" card. Also, there should be an option for the reference designation, that if it exists, it is displayed with the PCCN and PLISN on the "01D" card with a "G" TOCC. In addition, if any change authority related information is changed, CFIs "F", "G", and "H" update transactions are also processed.

(2) Quantity Data Update. When a quantity field is updated, mandatory data, a "Q" TOCC and the updated quantity data field(s) are entered. This will only apply to the following data: Quantity Per Assembly, Quantity Per End Item, Total Quantity Recommended, Allowance Item Code Quantity, Minimum Replacement Unit, Recommended Initial System Stock Buy, Recommended Minimum System Stock Level, Recommended Tender Load List Quantity, Quantity Shipped, Quantity Procured and Prorated Quantity. When additional data displayed on the same LSA-036 card also changes during the update, only one change card is entered with TOCC, "Q". When quantity data is deleted, a change card is entered with a zero filled quantity field and TOCC "Q". Note: When a quantity field is initially established, eg. from a blank to a numeric

value, a TOCC of "M" is assigned.

(3) Key Data Update. Certain provisioning data are considered key and associated data elements. These are listed below. Changes to key data requires the submission of both a delete and change card for the appropriate key data. The deletion card should contain a "G" TOCC and the original key data. The change card should contain an "M" TOCC with the new key data and the applicable associated data. Deletion of key data will result in deletion of the corresponding associated data. Note that certain key data, i.e., Serial Number Effectivity and Figure Number and Item Number, appear under both the key data column by itself, or with another key, and alos under the associated data column. These key data are actually subordinae to the keys for wich it is associated. This means that without the primary keys (Change Authority Number and TM Code), these subordinate keys will never be displayed. When combinations of data arelisted under the key data, these fielda re considered as one key field with blank subordinate keys permissible. A deletion of the key data in the PMF results in deltion of associated data to the key data in the PBVF and generation of an LSA-036 deletion transation only. The assocaited data will only be reinstated when the key data is re-entered into the parts file.

(4) Associated Data Update. Changes to associated data requires the submission of a change card consisting of an "M" TOCC with the changed data and entry of the applicable key data. Deletion of associated data requires the submission of a deletion card with a "G" TOCC, a "G" in the left-most position of the associated data field and entry of the key data.

(5) Design Change Notices (DCN). DCN information is not distinguished from other updated data for a particular LSA-036 update using a validated LSAR ADP system. DCN's can be processed as a separate and distinguishable report by specifying that DCN affected data must be processed as an exclusive update, i.e., by performing an LSA-036 update, entering the DCN information into the LSAR, and by again running an LSA-036 update. An option to obtain an LSA-036 report for updated data pertaining to specific Design Change Authority Numbers is provided on the LSA-036 options. DCN information updates are similar to other update transactions with the following exception. When a Change Authority Number and Serial Number Effectivity are entered, an "L" TOCC is entered for the replaced item. If a quantity change occurs on limited effectivity item, an "L" TOCC is entered in lieu of a "Q".

4.5.8.1 UPDATE PROCESSING.

a. Several data elements are combined/updated as one field. These are the Reference Number and CAGE on the 01A card and all CSN for Remarks and Provisioning Nomenclature within its TM Code, Figure and Item Numbers key. Since an update to Remarks or Provisioning Nomenclature may be of a shorter field length than the original data, the original data is deleted using data element deletes (or "G" TOCC) in either the standard or key data delete format, respectively, prior to updating these elements. Key, subordinate key, and associated/combined date relationships are depicted in figure 11.

b. The CSN will always begin with CSN "01" for any CFI update transaction. An exception is the CFI "A" update of an Additional Reference Number which will begin with CSN "02". If there are multiple data updates of a PLISN CFI, the CSN will be incremented by one for each multiple update required. The TOCC type within a set of CFI is also used to determine the CSN. Delete transactions (TOCC "G") are grouped for determination of the CSN for a PLISN CFI. If a CFI update includes both delete/change transactions (TOCC "L", "M", and "Q"), the CSN is again resequenced back to "01" when the transactions transition from the delete to the change types.

c. Deletion transactions will always appear before change transactions within a given CFI. A new PLISN can only have blank TOCC, which will include an incremented CSN for multiple CFI data.

d. There are no "reserved" additional reference numbers (ARN). The ARN will be displayed on CSN based upon a sort in ascending CAGE and ARN (first 29 positions). It is necessary to control "reserved" ARN, e.g., drawing number, by using the Reference Number Category Code (RNCC). RNCC "D" indicates a drawing reference number and RNCC "C", or "7" depicts nondefinitive Military Specifications or Standards.

e. DCN-UOC and Serial Number Effectivity are depicted as subordinate keys, and as such, multiple entries against a single Change Authority Number are permitted. The same is true of BOI-CTRL within a TM Code Figure Number-Item Number combination key, or Figure Number/Item Number within a TM Code key.

f. The analyst may change a CSC in the parts file which contains key data without generating an update transaction, if the key data itself remains unchanged.

g. If more than one WUC/TM FGC is entered in the parts file without the required key(s), only the WUC/TM FGC appearing on the lowest CSC will be displayed on the LSA-036 report (this allows an Air Force WUC to be output without the required TMC,FIG-NO,ITEM-NO key required for a TM FGC).

h. Unit of Measure (UM) Price processing.

(1) When more than one UM Price is in the parts file for a given Reference Number-SCC combination, a "Y" Provisioning UM Price Code (PUC) should be documented against only one of these UM Prices. This price will be extracted for the LSA-036 report.

(2) If more than one UM Price in the parts file contains a "Y" PUC, no UM Price will be output.

(3) If no multiple/single UM Price contains a "Y" PUC, the first UM Price containing a blank PUC will be displayed.

(4) If all UM Prices contain "N" PUCs, no UM Price will be output.

Table I. Provisioning Key and Associated Data.

i. Multiple, independent key data deletes/updates contained on the same CFI, e.g., UOC and Reference Designation, are consolidated on one card record under the appropriate TOCC.

j. A Reference Designation change on a portion of a long Reference Designation (determined by the Reference Designation Overflow Code (RDOC)) will result in update transactions to both card records of the Reference Designation, even if one of the card records is unchanged. Long Reference Designations (RDOC "A" and "B") must appear on consecutive CSC in the parts file. An RDOC A without RDOC B following long Reference Designation will not be output on the LSA-036, but will appear with an error message on the LSA-036 Part II error listingCAGE
report. (By this criteria, the RDOC appears to process similar to a combined key with Reference Designation, on update transactions.)

k. Identical key data within a PLISN record will be merged and processed as a single update transaction. Care should be exercised to ensure this condition does not exist in the file.

l. If multiple, subordinate key data are contained within another key, e.g., Basis of Issue Control within a TM Code-Figure Number Item Number combination key and DCN-UOC within a Change Authority key, the nonmultiple associated data, i.e., TM Indenture or Total Item Changes, only appear on the first CSN containing the basic key.

m. If an entire PLISN record is deleted from the PBF, a one-line record in the image of the PLISN deletion transaction will remain on the PBF. If that exact, deleted PLISN is reinstated/re-established in the PMF, it must match the CAGE and Reference Number that were contained on the record when it was originally deleted.

4.5.9 THE LSA-036 REPORT HEADER.

a. The following "header" data required to identify the specified list(s) are not a part of the LSAR but are contained in the LSA-036 summary.

(1) Procurement Instrument Identification (PII). A 19-position alphanumeric entry used to identify a specific contractual document. The PII includes the PII number (PIIN) (13 positions), and the supplementary PII number (SPIIN) (6 positions).

(2) Nomenclature of model or type number. A 21-position alphanumeric entry used to specify the name, model, or type of equipment being provisioned.

(3) Control Data. A 10-position alphanumeric entry used for control information as specified by the requiring authority. This information may consist of such items as identification of provisioning data in MIL-STD-1388-2 format or a Weapons System Code.

(4) Prime Contractor's CAGE. A five-position alphanumeric entry which identifies the prime contractor for the equipment being provisioned.

ADDITIONAL PMR MANDATORY DATA

Indenture Code

Item Name

Unit of Measure

Unit of Measure Price

PMR DATA RELATIONSHIP EDITS

Maintenance Replacement Rate (MRR) I required when MRR II/MRR Modified are present.

Maximum Allowable Operating Time is Mandatory when Maintenance Action Code is present.

Replaced or Superseding PLISN is mandatory when Interchangeability Code is present and vice versa.

Reference Number Category Code is mandatory for all Reference Number/ARN transactions

LSA-036 AND LSA-152 SELECTION OPTIONS

Indenture Code equals "A" when PLISN is less than "AAAH0" and vice versa (LSA-152 Model PLISN Reserve).

Usable On Code (UOC) is Mandatory (LSA-036 UOC Suppression)

Table II. LSA-036 - MIL-STD-1552/PMR EDIT DIFFERENCES

(5) Submission Control Code. A five-position numeric entry used to control the submission of provisioning data. The first submission will be 00001, and each subsequent submission is to be numbered sequentially, one greater than the prior submission.

(6) Date list submitted. A six-position numeric entry used to identify the date of submission. The first two positions will identify the year, the next two will identify the month, and the last two will identify the day.

b. The LSA-036 report contains a one-page header that provides the analyst with specific information about the current selection and a history of previous provisioning list selections. It also provides a series of counters with regard to the numbers and types of total PLISN records, as well as card record (CFI) counts and types of transactions against these CFIs.

c. The first line of counters on the header page concerns PLISN record totals for the PCCN selectted.

(1) The count under the header, "EXTRACTED FROM H DATA TABLES," consists of all PMF records, which are initially qualified by the selected PCCN.

(2) Under "NOT SELECTED" are records with a blank PLISN, PLISN records disqualified on either PTD Selection or UOC, or duplicate PLISNs. These conditions are shown on the LSA-036 Part II error listing with a message similar to, "PLISN bypassed in 36". This error message and most error messages on this report will depend on the software vendors choice of words.

(3) The next four columns of information are PLISN record (or "01A" record) totals extracted from the PBF. "EXTRACTED FROM PROV BASELINE" are the PLISN records established on the input PBF. "ADDED TO PROV BASELINE" are the new PLISN records added in this processing cycle. "DELETED FROM PROV BASELINE" is a total of all PLISNs contained in the PBF which have a "D" TOCC. This total represents the output file condition and not simply a total of the current processing cycle. The last column, "NEW PROVISIONG BASELINE," is a total number of PLISNs contianed in the baseline file after all adds and deltes have been processed.

d. The last set of counters, "LSA-036 RECORD COUNTS," are card record totals by CFIs and three groupings of TOCC (additions, changes, and deletions) for those items appearing in the LSA-036 report listing on the current processing cycle.

e. Also appearing on the LSA-036 report header are a recapitulation of the current report selection parameters, as well as a listing of all previously selected provisioning lists which comprise the consolidated PBF. These previous lists will only appear, if the current selection requires a PBF comparison and an extract of change transactions only.

f. The header section is used for error messages when a subsequent LSA-036 report selection violates the previously selected report criteria by

either narrowing the UOC selections, or by changing the UOC suppression option between selections. Only the header page of the LSA-036 report is generated.

4.5.10 THE LSA-036 PART II ERROR REPORT.

a. The LSA-036 part II error listing is automatically produced when an LSA-036 is requested. The standard section lists those PLISNs matching the PCCN selected which were disqualified or would degrade the provisioning list. This list must be reviewed by the user to ascertain what corrections, if any, are needed to update the parts data tables for subsequent update(s) to the provisioning list.

b. Since the LSA-036 does not match the input edits of the PMR, the LSA-036 Part II error listing can be used to review the parts file for the minimum mandatory data requirements to establish a PMR PLISN record. These "minimum data" are the same elements which were originally established under MIL-STD-1552 and are included in table II. Also included in the table are the data edit relationships required by the PMR, which are not in the LSA-036 system, and the PMR edits which can only be satisfied using the selection options of the LSA-036 and 152 reports. The part III Army Edit option may be selected in leu of the part II error listing.

c. The LSA-036 Part II error listing is displayed in PLISN sequence and should be made available by the preparing activity during LSAR/Provisioning reviews. It also includes the Reference Number and LCN keys, so that the preparer may readily make corrections to the PMF.

e. The ability to tailor this report is dependent apon the LSAR ADP system being used. The only errors that must come out on this report are itmsa that were bypassed based on PTD seletion or UOC or becuasue the PLISN was duplicated.

4.5.11 LSA-036 PART III OPTIONS. There are two LSAR-036 part III options, the LSA-036 Army Edit routine and the Air Force "L" card merge routine.

4.5.11.1 ARMY LSA-036 SYSTEM EDITS.

a. The Army LSA-036 edits were developed by a special task force representing each Army MSC and established by the CCSS PMR FCG.

b. These edits provide front-end edit and data compatibility checks prior to loading this information into the PMR. There are 42 optional edit switches which the user may specify. All but two of these edits will cause the LSA-036 system to discontinue final processing when an edit error condition is encountered. The edit switches may be turned "on" and "off" during trial LSA-036 runs by the preparing activity.

c. The requiring authority may specify in the LSA/LSAR Statement of Work, that specific switches must be used when an LSA-036 summary is generated for actual delivery to the requiring authority and stipulate the hard copy LSA-036 and LSA-036 Part II error summaries be delivered with the LSA-036, 80/80

magnetic tape.

4.5.11.2 AIR FORCE "L" CARD MERGE ROUTINE.

a. The Air Force "L" card contains information concerning basic cataloging and support item quantity requirements, substitute or preferred part numbers, and support item delivery schedules.

b. The ADP system should merges "L" card data with other card data when the tape option is seltectd.

4.6 PROVISIONING UTILITIES. There may be several utility/optional LSAR ADP system routines available to assist and enhance the provisioning process. Here are some that may be available:

a. SESAME Extract Program

d. Government to Contractor Parts Master File Update Routine

e. LSA-036 to PMF Transactions

g. QPEI Calculation by UOC

h. Other provisioning utilities

4.6.1 SESAME EXTRACT PROGRAM. This would be a utility to extract the LSAR data and input it into the SESAME model. SESAME is a "sparing to availability" model which optimizes the spare/repair part stockage levels for each operation/maintenance level. Earlier in the program life cycle, the model can be used for tradeoff analysis and provisioning budget forecasts. The core SESAME program written in FORTRAN IV. More information can be obtained by contacting U.S. AMSAA-IRO, Room 800 U.S. Custom House, Philadelphia, PA 19106-2976, DSN 444-3808, commercial (215) 597-8377.

4.6.2 GOVERNMENT /CONTRACTOR PBF COMPARISON. This routine may be available to compair government and contractor PBFs and give a discrepancy report. This routine may allow updates if desired.

4.6.3 LSA-036 TO PMF UPDATE TRANSACTIONS. An LSAR ADP system may contain a utility to take a LSAR-036 report and convert it to the H data tables.

4.6.4 QPEI CALCULATION BY PCCN AND UOC. This utility would automatically compute QPEI by any of the three options selectable using the LSA-036 system. It should be noted that the layout of the data tables does not allow for a part applicaion that is used on multiple UOCs to have multiple QPA/QPEI values.

5. REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL)

5.1 RPSTL CONTENT. The draft/proof RPSTL consists of four sections prepared IAW MIL-STD-335(TM) or MIL-M-49502(TM) (Reference MIL-M-49502(TM), paragraph 6.4, for applicable document):

a. Section I, Introduction

b. Section II, Repair Parts List

c. Section III, Special Tools List

d. Section IV, Cross-Reference Indexes

Sections II, III and IV listings are produced as separate sections of this report. The lists may be printed on plain bond paper or may be output to a word processor file to be used as source information for final RPSTL preparation.

5.2 REPORT SELECTION. These proof options is selected by mandatory TM Code from table HK. The draft option is selected by mandatory EIAC, Start LCN and TM Code. The draft has optional Stop LCN, ALC, and UOC selections. Additional optional selections for both the proff and draft are by O/M Level determined by the third (remove) position of the Source Maintenance and Recoverability Code (SMRCODHG) and Start and Stop range(s) of FGCs. (NOTE: The only differences between the proof and draft RPSTL format involves display of the file control keys following the standard columns 1 through 6 (or 7).) Both the proof and
draft RPSTL have the option of depicting the formats prescribed by either MIL-STD-335(TM), or MIL-M-49502(TM)

a. The four cross reference indexes in part IV of the RPSTL, are each separately selectable.

b. Functional Group Code (FGC) Headers are also optional inputs for the RPSTL report. For the 30 report you have header information which is a throughput. For each Functional Group header there will be a Start and Stop TM-FGC header. Each Functional Group Header can consist of up to 9 lines of header information. Each line of header information is 36 positions long. There is not a minimum or a maximum number of FGC headers/Start and Stop TM-FGC.

c. There is an additional selection option, Start Stop TM-FGC. There is a maximum number of 4 start and stops TM-FGCs. The Start Stop TM-FGC will allow the report requester to select specific TM FGCs to be output. They should be processed like start and stop LCN's (Start TM-FGC $\leq$ TM-FGC < Stop TM-FGC, except when start and stop TM-FGC's are equal then select that TM-FGC only.

5.3 DOCUMENTATION OF KITS FOR RPSTL. In order to produce kit/kit component listings for the RPSTL, a kit record first must be established and a

Provisioning List Item Sequence Number (PLISN) assigned to this item. In the data table, Overhaul-Kit NHA PLISN, against the application of the kit component record, an NHA PLISN entry of the Kit PLISN with an NHA PLISN Indicator of "*" is required. Where the kit component appears in the RPSTL hardware breakout, the phrase "PART OF KIT P/N" (automatically generated), followed by the reference number of the kit, will be displayed following the provisioning nomenclature in the description column. The Kit Reference Number is determined by a match of the Kit NHA PLISN to a PLISN under the same PCCN in the parts application provisioning data table. One item may be used in multiple "kits" by multiple kit NHA PLISN HH entries. The kit components are automatically generated beneath the kit. The component listing contains the applicable figure number, item number and quantity per assembly/figure duplicated from the hardware breakout information.

5.4 DATA CONTENT.

a. FGC Headers are placed in the description column preceding the first row of data matching on FGC with the FGC header key.

b. The PART NUMBER column contains 16-positions of the Reference Number. If the Reference Number exceeds 16 positions, the remainder is printed immediately beneath the first 16 on the next line.

c. Rows are sorted by section and FGC sequence. For the description column, the item name will first appear, then two spaces followed by the provisioning nomenclature, if applicable. If the Hardness Critical Item (Table HG) is "Y", then the symbol "(HCI) is printed one space following the Item Name and two spaces before the provisioning nomenclature. Trailing periods are placed following the last position of the item name/provisioning nomenclature to the end the description column. If the row also has a TM Indenture Code entry, then leading periods are placed prior to the item name of the row, equalling the number in the TM Indenture Code field.

d. Following the privisioning nomenclature, on a separate line applicable UOCs of the row are entered. preceded by "UOC: " If the row has full effectivity, no UOCs are displayed. Full effectivity is determined by: A Row in HG has full effectivity if it is represented in HO for Every XC entry which contain its PCCN.

e. The quantity per figure is displayed, unless blank, then the quantityt per assembly is shown.

f. Under the NSN column (MIL-STD-335 Format), a "Y" is displayed if both FSC and NIIN are not blank and NIIN does not contain alpha characters for the row of information. Otherwise "N" is displayed.

g. Under the PLCC column, only entries of "D"s are shown.

h. After all rows of data are displayed following a FGC Header, and before the next FGC header the phrase "END OF FIGURE" (MIL-STD-335(TM) Format only) is printed. Rows of information are printed with no line skips between rows. At the end of a page, a page number is assigned using the figure number

from the first record following the FGC header, followed by dash then "1", multiple pages of the same figure follow the same pattern, e.g., 3-1, 3-2, 3-3, etc. A page break will occur with each new FGC Header set under a different FGC. If no FGC Header inputs are provided, then the sorted rows are "page breaked" each time the figure number changes.

i. The section III description column is similar to the Section II description with the addition of the interpreted Basis of Issue(BOI). Each BOI is displayed by "BOI:" and its quantity, then either Basis of Issue Level or Basis of Issue End Item is interpreted (See DED 030 of MIL-STD-1388-2B). Basisi of Issue End Item is preceded by "PER" and followed by "END ITEMS". The BOI is inserted between provisionnomenclature and the Usable on Code lines.

j. Section IV cross reference indexes are produced as optional outputs as specified by the requester. The Reference Designations for the Reference Designation Index will either only include those items having a nonidentifying migrating key of the appropriate Figure and Item Number. If these keys are present, or will include all related Figure Number, Item Numbers, and TM Code, if these keys are not in table HJ. Overflows of Reference Numbers or Reference Designations exceeding 16 or 32 positions, respectively are printed on the next line immediately below the first portion of the element.

5.5 DRAFT/PROOF RPSTL REVIEW.

a. While the formal RPSTL report ends after the QUANTITY field column, additional information is provided on each report line record to assist the analyst in correcting/refining the final RPSTL product. These include:

(1) TM Code. This is the basic selection criteria of the Proof RPSTL and is displayed for review when selecting the draft/proof report.

(2) WUC/TM FGC and LCN/ALC. These are selectable primary sort criteria of the report line records.

(3) PLCC and ICC. These determine the section, repair part or tool, the report line record will be displayed on the proof and draft RPSTL, respectively.

(4) Figure Number and NSN Indicator. Figure Number is a secondary sort criteria of the draft RPSTL and must be accurate to produce cross-reference indices. The NSN indicator can be reviewed to check whether or not an NSN is in the LSAR for "P" source coded items.

b. The PLISN does not appear in the line of review data; however, if a duplicate PLISN is contained in the proof RPSTL records which matches exactly on WUC/TM FGC and Item Number, then an error message "*** DUPLICATE PLISN ***" will appear in the description column of the report record. This can occur when a PLISN record contains multiple TM Code, Figure Number and Item Number key with an identical associated WUC/TM FGC and a different Figure Number, or on the rare occasion when the WUC/TM FGC Item Number and PLISN match for items contained under different PCCNs.