

## LSAR and Logistics Data Management

---

### Overview

A practical course that is designed to complement the Aspire Logistic Support Analysis (LSA) course.

The Logistics Data Management course addresses the requirement for, the development of and the use and management of Logistics data in a Systems Engineering context.

As the delegate will have experience or knowledge of the Integrated Logistic Support (ILS) and LSA processes this course leads them through a complete project from start to finish. It takes the delegate from the Integrated Logistic Support Plan (ILSP), Statement of Work (SOW) and Use Study through to determination of resources at each level of repair, including tools, spares, skill sets, training needs and technical documentation.

Logistics Data Management is seen as one of the "Black Arts" of Supportability Engineering that frequently leads to enormous costs and indifferent to poor results. This "Logistics Data Management" course aims to reverse that trend.

The course is founded on an understanding of the relationship between the logistics data and support requirements and specifications, the design, support deliverables and management deliverables, are stressed throughout the course. The purpose of the logistics database is explored and related to the LSA process and the LSA tasks. This leads to a discussion on the range of information and data that would be required at each stage of the System Life Cycle.

The application of these concepts in a contracting environment is addressed; Data Element Definitions (DEDs), Data Item Descriptions (DIDs), Contract Data Requirements List (CDRLs) and Data Selection Sheets [DSS] are introduced. The structure of the LSAR as defined by the "Tables", their content and their relationships is analysed, once again these are related to the LSA and Systems Engineering processes. The database indexing systems, the Logistic Support Analysis Control Number (LCN), Alternative Logistic Control Number (ALC) and Usable On Code (UOC) are explained.

The management of the logistics data begins with tailoring of the project. When to use or not to use a LSAR and how data can be used and not just stored, the use of the Defence Standard 00-60 "LSAR Data Tables to Report Matrix" is explained, as are methods for monitoring the status of the developing data.

### Target Audience

The course is aimed primarily at LSA Practitioners and ILS or LSA Managers who require an understanding of logistics data management, in particular the purpose, the nature and limitations of LSARs and the processes and the problems associated with generation and management of logistics databases. The delegates must have a sound understanding of the ILS and LSA concepts and processes, prior to attendance on the course.

Completion of a suitable LSA course before attendance on this course is strongly recommended.

### Objectives and Utility

The delegate will understand the need for effective data management as an essential element of any ILS or LSA programme. The delegate will understand the relationship of the logistics data to the ILS and LSA processes and the importance of maintaining visibility of this relationship when planning and tailoring ILS and LSA programmes.

The delegate will gain a working knowledge of Defence Standard 00-60 and how to apply the standard when preparing or responding to ITTs and contracts. The nature of relational databases will be examined and the understanding gained will be used to gain an appreciation of the structure of a Defence Standard 00-60 LSAR.

The delegate will be able to explain, define and apply the indexing systems utilised by the LSAR, i.e. the LCN, ALC and UOC. The delegate will gain an understanding of the LSAR based on clear Systems Engineering [technical and project management] principles. This understanding will enhance the capability of the ILS or LSA Manager to make cost effective decisions regarding Logistics Data, traditionally the major LSA programme cost driver.

The delegate will appreciate the purpose of the data that is generated in relation to the ILS and LSA technical and management processes. Together this reduces the likelihood that unwanted data will be requested, produced, reviewed and managed and increases the effectiveness with which the required data is requested, produced, reviewed and managed. This is because the level of fundamental understanding gained will enable very effective tailoring of the LSAR.

### The Training Process

As a precursor to addressing the detail of Logistics Data Management and LSARs, the ILS and LSA processes are reviewed in brief, an overview of Defence Standard 00-60 is given and the concept of a relational database is discussed and demonstrated.

The concept of using the LSAR to generate and manage information as opposed to data is stressed, this leads to a discussion of the various types of reports that are available from the LSAR and the concept of generating ad-hoc reports is examined.

The course establishes a clear understanding of the need for a logistics database and for the type of information that would be stored in the database. The emphasis is placed on the generation of required information. ILS and LSA in the context of Systems Engineering are both briefly reviewed before commencing this session commences.

The next stage is to ensure the delegates all have a common, [minimum level], understanding of relational databases, examples will be used to reinforce this understanding, the concepts of database structure, tables, queries and reports will be introduced here. Only then will the structure of the LSAR in accordance with Defence Standard 00-60 be introduced. A guide to Parts 0 and 2 of the Standard will be given to ensure that the delegates understand the scope and structure of the contents.

The LSAR content and structure is then addressed, this is again related to the ILS and LSA processes. The methods of indexing the database, LCNs, ALCs, UOCs etc. are explained with the aid of realistic examples. The problems and shortcomings of the data structures are also addressed. The use and tailoring of the Standard in a contracting environment is addressed, from both the customer and contractor's viewpoint.

# LSAR and Logistics Data Management

---

## Course Programme

---

### Day 01 - AM

---

#### 001-T Supportability Engineering & ILS - An Overview

The module starts with a very quick introduction or recap of Integrated Logistic Support (ILS) that answers the Why, What, When, Where, Who, and How questions about Support Management.

The need for Integrated Support Solutions is identified by describing the problems and potential problems that must be rectified or avoided in the future. The module develops a logical argument through an analysis of these problems that leads to the identification of the support elements, the ILS Aims and the underlying Philosophy of ILS. Followed by a discussion on the analytical techniques that are required in order to optimise the Total System design, i.e. the requirement for Logistic Support Analysis (LSA).

#### 002-S Systems and the Systems Engineering Concept

The concept of a "System" and its associated characteristics are discussed. The discussion will address system connectivity, emergent properties and the concept of environment from a system viewpoint. These will all be considered in the ILS context, the consequences of these properties, in ILS terms, for example their effect on support modelling requirements, and Life Cycle Cost analysis, will be addressed. The concept of Systems Engineering is introduced, and ILS is defined in the context of the Systems Engineering process. The aims of the Systems Engineering Process are defined. This leads in a logical manner to an expansion of the need for and the role of LSA (introduced in the "Defining ILS" module). The aims of LSA and its place in the Systems Engineering process are explored. The "Generic Systems Engineering" process is introduced and related to the concept of system Life Cycle Phases as a mechanism for controlling a major system development programme and for managing risk. The concept of Life Cycle phases is related to the acquisition process and the acquisition phases are defined in terms of their aims, processes and products.

### Day 01 - PM

---

#### 003-T The Logistic Support Analysis (LSA) Process - A Short Introduction

An introduction to the Logistic Support Analysis (LSA) process. The need for LSA is discussed then the LSA tasks and the LSAR as defined by Def. Stan. 00-60 and MIL-STD-1388-1A are introduced.

The tasks are discussed in the context of the System Engineering process.

#### 043-P Logistics Information Requirements

The module has two distinct parts, the first part starts with a general discussion about the requirement for information. The need for information to enable effective management and control, to understand cause and effect relationships, to facilitate Continuous Quality Improvement (CQI) systems, flexibility and responsiveness to market needs is addressed.

The role of IT systems in modern data management is discussed briefly, this discussion touches on the collating and analysis of data to produce usable information, the automation of tasks, the reuse of data, communication, distribution and access issues.

The second part of the module then addresses the information needs of a logistics programme specifically. This section relates the logistics information needs to the Systems Engineering and LSA processes, the need for Requirements information and information on the Mission System and the Support System is addressed. The results of the enquiry are not constrained to the information which is, at present, defined by Defence Standard 00-60, the aim is demonstrate the limitations as well as the capabilities of the LSAR.

#### 044-P An Introduction to Relational Databases

The module begins by discussing the concept of a database and uses simple examples as illustrations. The difference between data and information is explained and the concept of a Database Management System [DBMS] is introduced.

The elements of a Relational Database are then introduced and explained, this section addresses, Entities and Tables, Records and Rows, Attributes and Columns, and Relationships. Each concept is illustrated with a simple example using Microsoft ACCESS and then a relevant section of Defence Standard 00-60 part 0.

The elements of relational databases normally associated with the DBMS are covered next, that is:

- Forms for inputting data.
- Reports for Extracting information.
- Queries for sorting and selecting information.
- Business Rules.
- Macros.

Examples are given first in a Microsoft ACCESS database and then in using pertinent examples from Defence Standard 00-60 part 0.

## Day 02 - AM

### 035-T A Short Introduction to Def. Stan. 00-60

This module will give a basic introduction to Def. Stan. 00-60 and begins by defining the purpose of the standard.

The structure and content of the Standard is covered.

The history and the proposed development of the standard is discussed briefly. Delegates will be able to view both hard copy and soft copy version of the standard. The delegates will be given details of Def. Stan. 00-60 help desk and web site.

### 045-P The Structure of the LSAR

Compiling the LSAR seems a daunting task to many people. Many LSARs are based on completing Data Elements in specific tables and deriving a standard set of LSAR Reports. This module dispels the 'mysteries' of the LSAR.

### 039-P The LSAR Reports

This module assists the delegate in determining the most cost effective method of data collection.

It also highlights the limitation of Standard Reports and when specific 'Ad-hoc' reports should be required.

## Day 02 - PM

### 037-P Logistic Support Analysis Control Numbering (LCN) Strategies

Many people have problems when trying to understand the data presented in the LSAR. Many of these problems stem from the Equipment (or system) Breakdown Structure.

This module highlights the do's and don'ts of Logistic Support Analysis Control Number (LCN) structures and suggests alternative methods to breakdown the system.

### 046-P LSARs in the Contracting Environment

This module discusses the reasons for and against using a relational database LSAR.

Questions that must be addressed before committing to completing a LSAR are also covered and reviewed.

The module also explores How and when the data is delivered to the customer and commenting systems and how Configuration Control is handled, especially when dealing with sub-contractors, including interchange agreements.

### 142-P LSAR Software Tools - Comparisons

The delivery of a powerpoint presentation, supported by OEM notes highlighting the key functionality of the various software packages, ROM costs (Where available) and a POC with each of the OEMS for any further enquiries or information required.

## Day 02 PM - Day 05 PM

### 050-P-T 3.5 DAY LSAR WORKSHOP

Carrying out the analysis is the starting point on a project. Compiling the LSAR comes next, understanding the structure of the underlying tables of the LSAR allows the user to extract useful information from the analysis and table structure.

This module dispels the 'mysteries' of the LSAR by enabling the candidate to complete the tables and extract the information from the entered data.