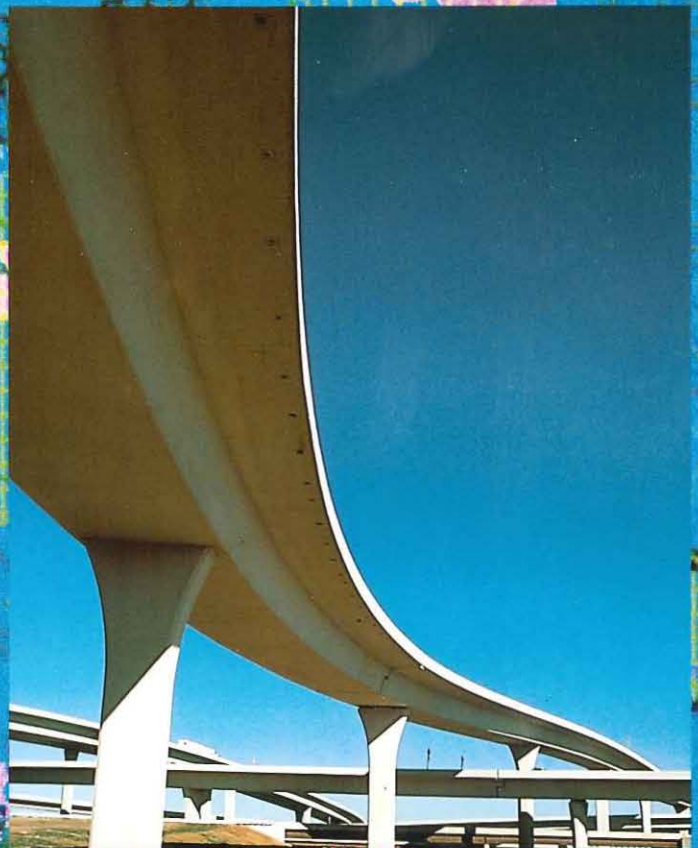# LAMPS *Integrated map production*

Laser
Scan

More than a drafting task

Producing a map is a complex process involving collection of data, design and preparation of the contents, and production of a master copy, ready for printing.

But if it stopped there, map production could be handled by a straightforward drafting system.

The fact is, map production can involve information drawn from numerous sources, in different formats. It can require the establishment and maintenance of a comprehensive database containing not only the map data itself, but details of where it came from, what changes have been made to it, and how it is to be used. It often requires the ability to produce several different maps or types of map from the same data. And it will frequently involve specialised cartographic operations to transform the data into one of many map projection co-ordinate systems.

Furthermore, for many organisations involved in map production, their work is a complex series of overlapping projects requiring tight control and efficient management.

Integration for efficiency

So a system for map production needs to be more than just a drafting system. It needs to incorporate database management and project management facilities, and a number of specialised cartographic functions.

Experience has shown that building map production systems from a number of separate components can lead to inefficiencies and potential data integrity problems. For example, transferring information between systems requires unnecessary and wasteful conversion processes, and having the same data stored simultaneously in different systems creates the risk of inconsistencies arising. Moreover, you will probably end up paying for facilities which are of little or no use to you.

In short, this approach is likely to be costly, inefficient and problematic. The alternative? A single integrated system, containing all the necessary specialised facilities.

Enter LAMPS - Laser-Scan's Automated Map Production System. Designed from the outset to handle the specialised requirements of map production, LAMPS handles the entire process from data capture, through data manipulation, editing and enhancement, to output preparation and the production of finished material. It incorporates an integrated database, to allow comprehensive management reporting and flow-line management.
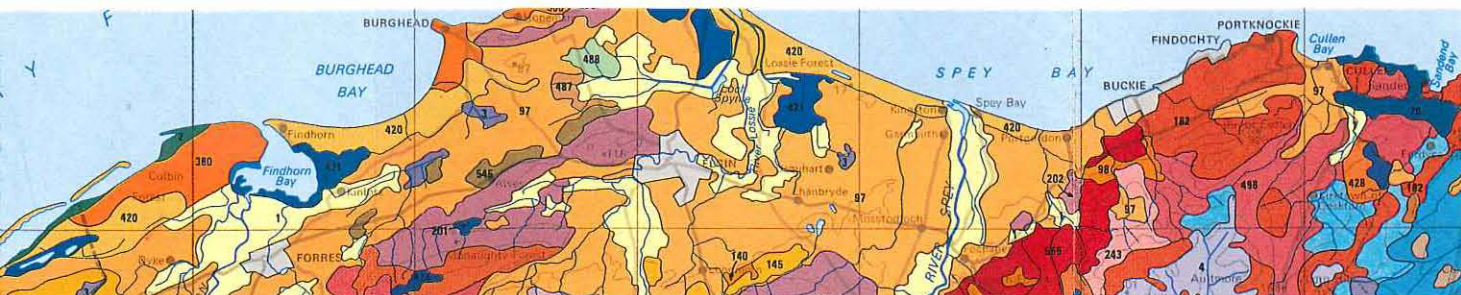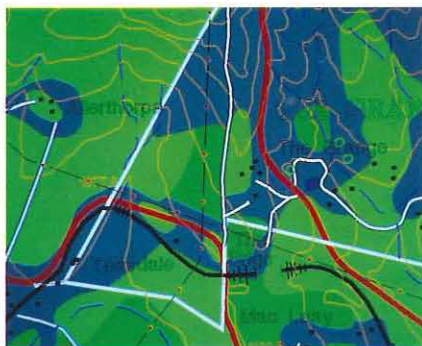
The integrated approach to map production

Raster
scanning
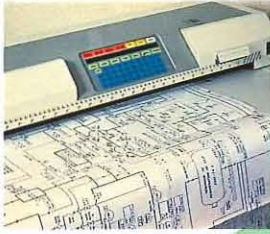
Digital
data

VTRAK

Manual
digitising

Map-quality
output

Aerial
photography

Check
plots

Remote
sensing

Terrain
models

Existing
data

Screen
display

L A M P S

Nor draw no line there
with thy antique pen.

W. Shakespeare, Sonnet XIX

"meets the highest cartographic quality standards..."

The ability of LAMPS to meet the most rigorous of requirements for both quality and volume, is demonstrated by the installation at Ordnance Survey, the national mapping agency for Great Britain.

The system takes data from field surveys, and also from aerial photographs via stereoplotters. The standard editing facilities of LAMPS are used extensively, along with additional advanced text processing and terrain analysis options.

With more than 100 workstations, the system is used for mapping at various scales, as well as for products such as road atlases.

"rapid and efficient production of new editions..."

The efficient management of chart production projects is crucial when faced with rapidly changing source material and a regular publishing programme.

This is the situation faced by No. 1 Aeronautical Information Documents Unit of the Royal Air Force, where LAMPS is used to produce flight information publications. These include en-route charts, standard instrument approach and departure charts, terminal approach charts, helicopter landing sites and minor airfields.

These highly symbolised, multi-colour charts in which textual descriptions of the procedures are integrated, require the sophistication of the LAMPS advanced text manipulation facilities to ensure clarity of presentation.

"innovative uses beyond map production..."

For a system as flexible as LAMPS, potential applications are almost limitless. This is evident in the use of LAMPS by the Istituto Poligrafico e Zecca Dello Stato - Italy's state printing works.

Their system comprises manual digitising and Lasertrak laser scanning systems for input, and a Laser-Scan laser plotter for the production of high-quality colour separations.

Not only is it used to produce the national 1:50,000 map series, but it has also been applied to the intricate task of bank-note design.
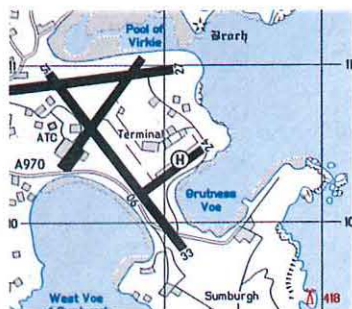
End-to-end flexibility

Input to a LAMPS system can be taken from a wide variety of sources. These include existing data files, paper maps, aerial photographs and other digital data sources such as remote sensing systems.

For input of paper-based information, all LAMPS systems include a tablet digitising capability. Optionally, you can choose to incorporate on-screen digitising, or VTRAK, Laser-Scan's unique and powerful semi-automatic data capture software. For high-volume data capture requirements, the semi-automatic, or interactive, approach offers unparalleled accuracy and productivity.

Finished maps can be displayed on a workstation, sent to a printer or plotting device, or output as a data file. For transferring the map to a GIS or other system, data files can be produced in any standard vector data file format - such as the UK National Transfer Format (UK NTF).

Power and performance

Structured either as a collection of individual sheets, or as a continuous map, data is stored as layers of map features with full attribute coding. This optimises data storage requirements and system performance, and provides flexibility.

LAMPS incorporates a comprehensive set of display and on-screen editing facilities, which include an extensive set of line styles, area fill patterns, symbols and text styles. Customisation facilities and a powerful macro language let you extend these to suit your needs.

The extensive set of map file processing and manipulation facilities includes map splitting and merging, and a powerful edge matching capability. The co-ordinate transformation functions support over 20 different map projections.

For planning and management purposes, LAMPS can provide report generation and database enquiry facilities. Journal files provide a detailed history of all operations on the database.

In a single system

LAMPS has been designed to provide a complete, integrated system which can be tailored to your specific requirements.

This is achieved not only by the in-built customisation features, but also by the wide array of optional facilities and services available. These optional facilities include powerful text manipulation, 3-D co-ordinate editing, polygon generation, data structuring and terrain model generation. Other specialised capabilities can be implemented as custom developments.

LAMPS is available in three different configurations, designed to suit different map production environments. However, each one lets you take raw data, convert it into digital vector form, perform any necessary additions, edits or manipulations, and output it as a finished map - all within a single, integrated system.

LAMPS - more than just a drafting system
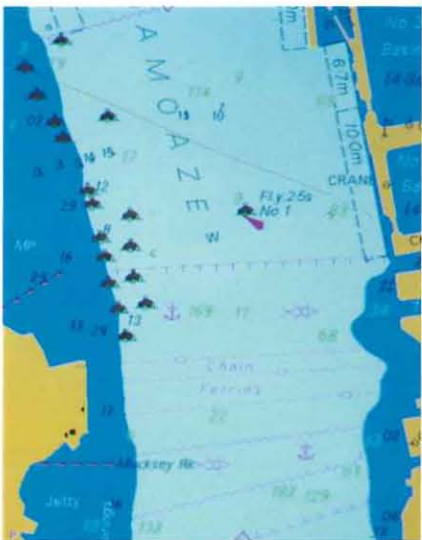
Laser-Scan - the company

Laser-Scan has worked with digital mapping and imaging systems technology for over 20 years, developing and producing data capture products and geographic information systems (GIS), backed up by a comprehensive range of support services.

A clear recognition of the varied and specialised nature of applications in this area, has led to a development philosophy which aims to provide the right solutions to real problems.

The evidence is in our customer base, which ranges from government departments and national agencies, to commercial organisations and service companies, spread throughout Europe, and the rest of the world.

Function	Foundation	Mapper	Agency
UK NTF input/output format	•	•	•
Interface to Altek digitiser	•	•	•
User defined map representation	•	•	•
Industry standard menus	•	•	•
History records for management	•	•	•
Map projection manipulation	•	•	•
PostScript® output	•	•	•
Cartographic quality output	•	•	•
LITES2			
Comprehensive map display manipulation	•	•	•
Powerful range of map edit facilities	•	•	•
User defined attribute manipulation	•	•	•
User macro language	•	•	•
OS specific digitising (UK)	•	•	•
Input of scanned map data		•	•
Integrated vector/raster display		•	•
On-screen digitising		•	•
Satellite image input		•	•
VTRAK			
Interactive line-following			•
Symbol capture			•
Link-node structured data capture			•
'Paint-out' of captured data			•
Road centreline capture			•
Autopass data capture			•
Options			
Greyscale line following			•
Region data editing		•	#
Map sheet edgematching		•	#
3D coordinate editing		•	#
Polygon generation	•	•	•
Data structuring	•	•	#
Basemap QA (UK only)	•	•	#
Extended text manipulation		•	•
Stereoplotter interface	•	•	•
Terrain model generation and validation		•	•
Terrain analysis		•	•
Additional input/output formats	•	•	•
Additional interfaces to digitisers and plotters	•	•	•

included in package.

PostScript is a trademark of Adobe Corporation

Ordering Information

LS110 LAMPS Foundation
LS120 LAMPS Mapper
LS130 LAMPS Agency

Laser-Scan Limited
Cambridge Science Park, Milton Road, Cambridge CB4 4FY

Tel: +44 (0)223 420414 Fax: +44 (0)223 420044
Telex: 817346 LSL CAM G

**Laser
Scan**