



**Librascope**

a division of The SINGER Company



## PROGRAMS AND PRODUCTS

# Tactical Information and Weapon Control Systems

### SUBMARINE COMBAT CONTROL



Librascope's SCCS Mk 1 is a fully automated, totally integrated, tactical information/weapon control system - the free world's first such all-digital ASW submarine combat control system to reach production. Currently it is being installed on submarines of the Royal Australian Navy.



For the surface fleet, Librascope produced Fire Control Systems Mk 114 and Mk 116. The ASROC missile shown launched in the photo is one of the weapons controlled by a Librascope system.



Librascope has more ASW underwater fire control equipment items aboard vessels of the U.S. Fleet than any other producer. The SS(B)N Daniel Boone, pictured, relies upon Librascope systems for the launching of its defensive weapons and acoustic countermeasure devices.



ASW weapon control has been a main company business area since 1940. Naval personnel above are working with Fire Control System Mk 113 Mod 9, designed by Librascope for use aboard U.S. Fleet Ballistic Missile Submarines.



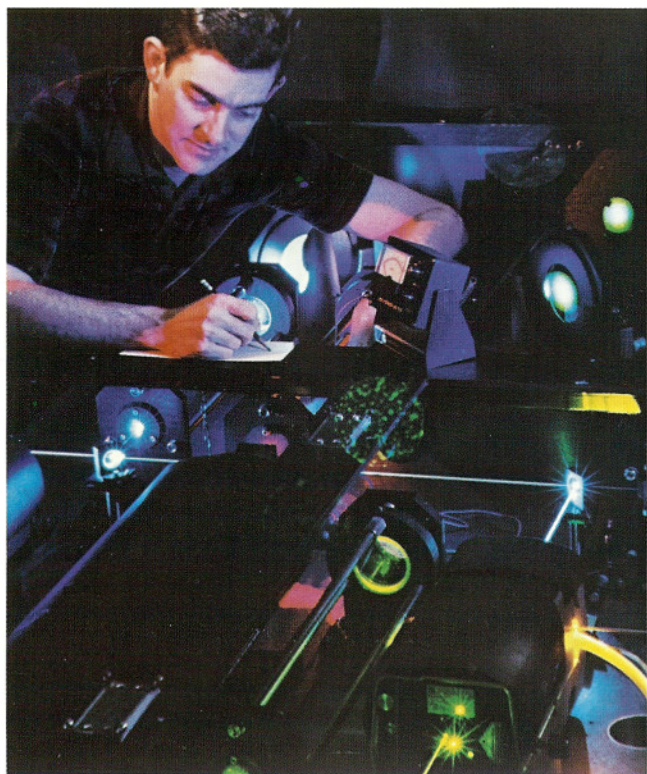
Shipboard instrumentation built by Librascope is being loaded aboard a submarine.



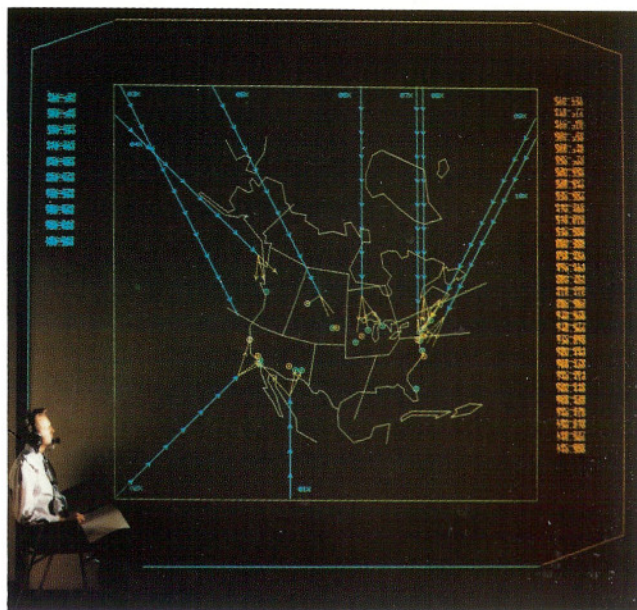
Both the Tactical Computer System (TCS) and Tactical Computer Terminal (TCT) are being produced for the U.S. Army. The TCS is a militarized, compact, mobile, general purpose data processing, display, and communication system for the field Army. It is used for the collection, generation, review, analysis, and distribution of tactical information. The TCT functions similarly at outlying echelons, in communication with TCS's and other TCT's.



At the near left, command personnel use the TCT in a simulated field deployment. The TCT may be self-standing, or it may be installed in a military vehicle or helicopter as in the other two photos.

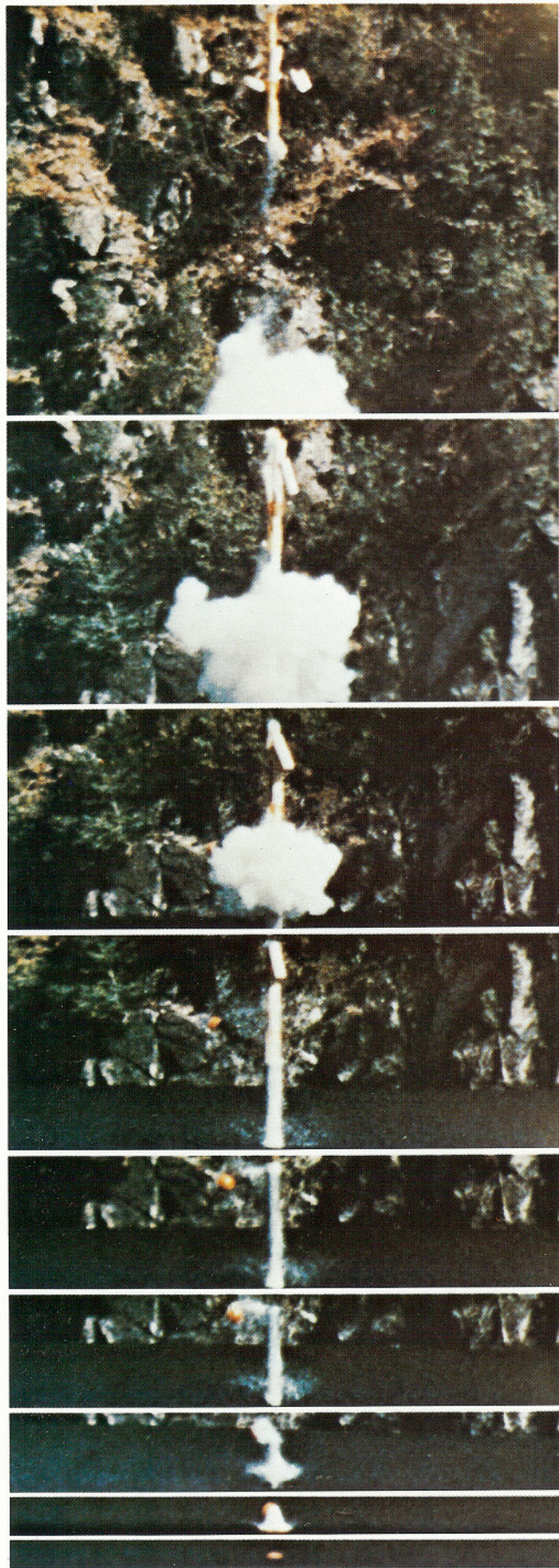


Multiple laser systems are used in Company products to generate visual field simulation.



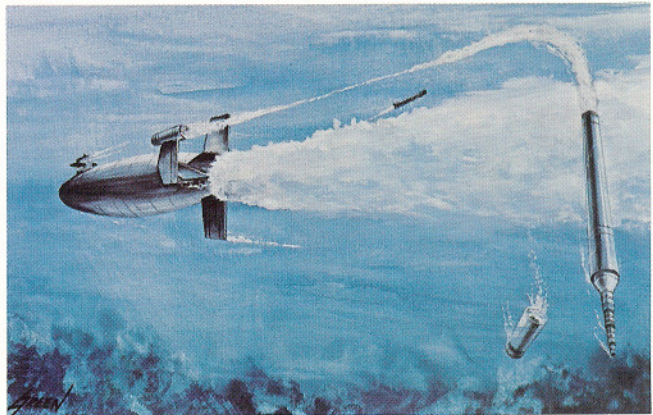
Librascope has pioneered the use of lasers for various types of tactical displays.





## Acoustic Countermeasure Systems

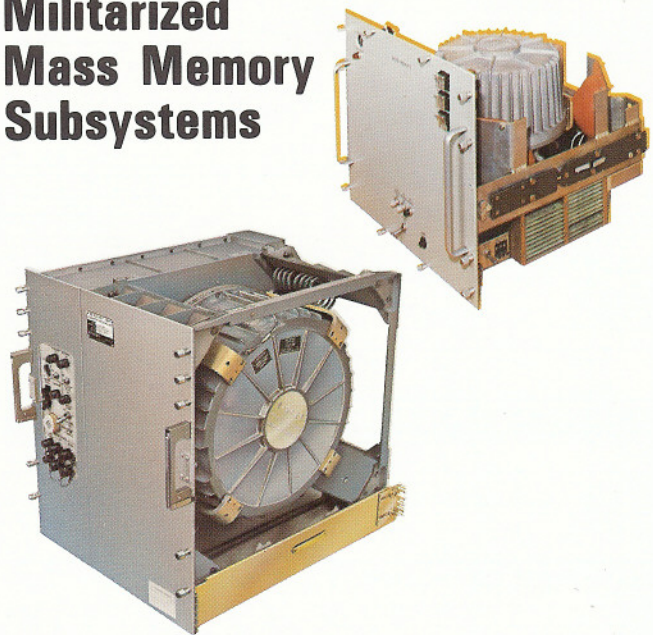
Librascope has a leading position in the development of acoustic countermeasure devices for undersea warfare. The Company is involved in several related study, engineering development, and production programs.



## Launching Systems

The photo sequence at left shows a test demonstration of a Librascope-designed underwater delivery vehicle to provide an anti-aircraft defense capability for submarines.

## Militarized Mass Memory Subsystems



Militarized mass-memories are designed and produced to withstand severe environments and are Approved for Service Use.



# LIBRASCOPE: A HISTORY OF INNOVATION

Librascope, founded in 1937, produced one of the first computers with commercial applications. This was an analog computer, the size of an attache case, used to calculate proper weight distribution on cargo aircraft. Called a "Librascope" (Balance Indicator), it won immediate acceptance and contributed the company name.

Technology developed in production of the balance indicator and similar computers led to a contract with the U.S. Navy for Attack Director Mk 5, an analog computer to determine exact drop point for depth charges. This marked the entry of Librascope into the field of antisub-

marine warfare weapons control, a field it dominates to the present day.

Involvement in advanced computer technology has led to many firsts for Librascope. Among these:

- First digital computer to be deployed aboard submarines for ASW weapons control (the Mk 130).
- First digital weapons control system for use by submarines in antisubmarine warfare (the Mk 113).
- First all digital, totally-integrated ASW submarine combat control system (the Mk 1).

## LIBRASCOPE TODAY

Librascope is a Division of the Singer Company's Product and Services for Government Group. Other divisions in this Group are Link, Kearfott, HRB-Singer and Education. This segment of the Singer Company develops and sells a broad line of navigation and guidance systems; training simulators; shipboard electronic systems; telecommunication terminals; and related systems and products. These systems are characterized by their high technology base and broad application of advanced electronic techniques.

Librascope's current activities are directed toward Tactical Information and Weapon Control for the U.S. and Allied Governments. The major business areas are:

- Naval Undersea Weapon Control and Countermeasures.
- Battlefield data processing/message handling communications equipment.
- Militarized computer products and displays.

## LIBRASCOPE OFFERS CHALLENGING OPPORTUNITIES TO WORK IN THE NEW TECHNOLOGIES

Career-broadening employment opportunities occur periodically in the following areas.

### Engineering

Engineers: electronic, systems, and mechanical; drafters and designers; engineering and scientific programmers; all personnel are employed in the design and development of computers and digital processing systems.

### Logistics

Maintenance engineers, installation engineers, field service technicians, provisioning specialists, training specialists, writers, editors, and artists.

### Manufacturing

All levels from clerical through a variety of professional positions in such functions as assembly, machining, industrial engineering, production, material control, and quality control.

### Administration

All types and levels of openings for office, clerical, and professional employees in accounting, contracts administration, purchasing, and personnel administration.

## METHOD OF TRAINING

After a brief personal orientation, individualized training is done on the job. Planned on-the-job assignments, coupled with formal training as required, is considered the best means of developing skills and abilities. Company-supported supplemental education in nearby colleges and universities is encouraged.

## BENEFITS

Librascope has a wide range of company benefits including: tuition reimbursement for educational expenses, paid vacations and holidays, sick pay, group insurance, and stock purchase plan.

## EQUAL OPPORTUNITIES

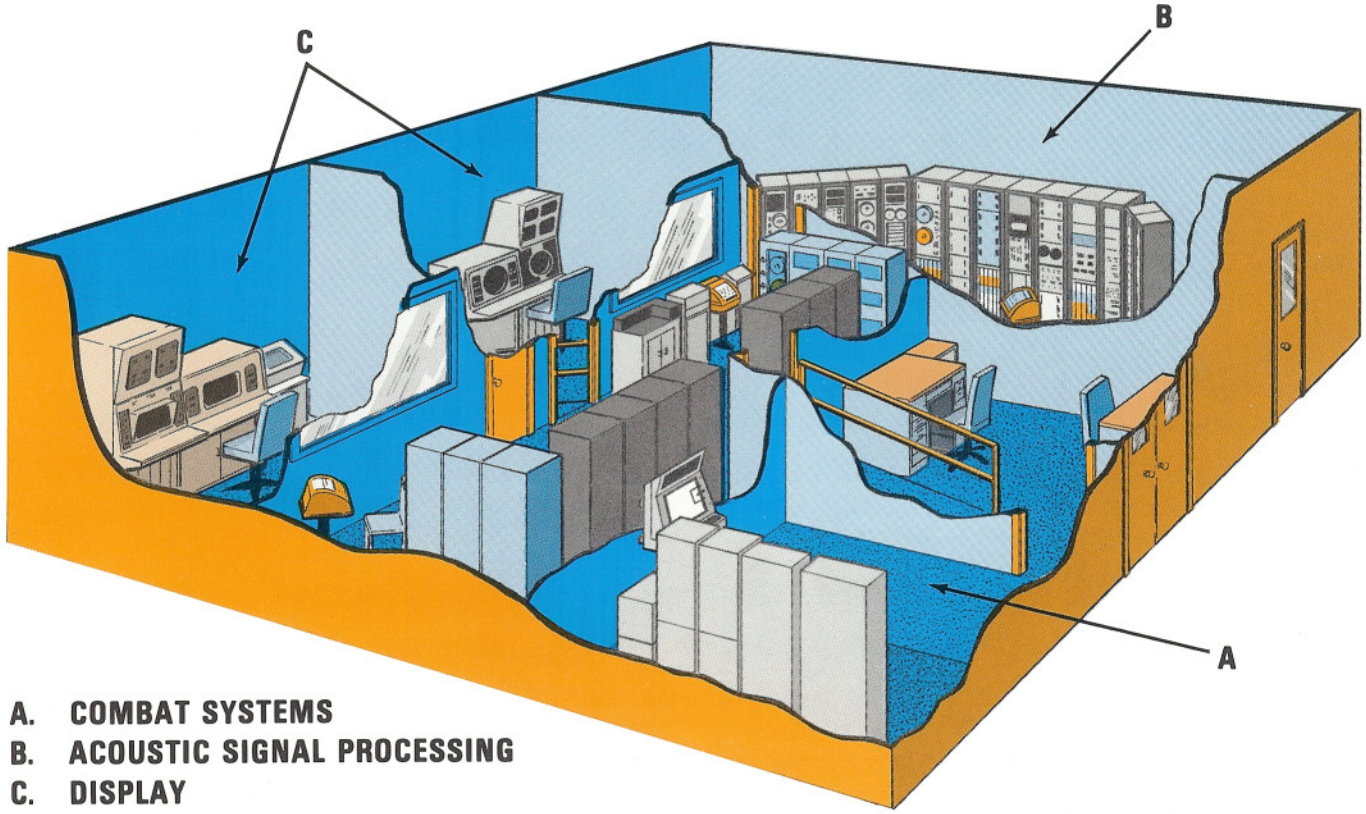
Librascope is an equal opportunity employer and considers all qualified applicants without regard to age, sex, race, creed, color, or national origin.



# THE ADVANCEMENT OF SCIENCE AND TECHNOLOGY AT LIBRASCOPE

To meet demanding military requirements, Librascope maintains competence in a broad spectrum of sciences and technologies, including those of magnetics, acoustics, metrology, lasers, displays, computers, electronics, optics, systems

analysis, and precision mechanics. Advancements in these sciences and technologies take place through the use of modern laboratories by personnel who are highly trained within their specialties.

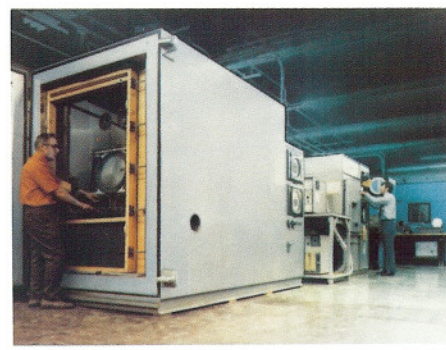


- A. COMBAT SYSTEMS
- B. ACOUSTIC SIGNAL PROCESSING
- C. DISPLAY

## LABORATORIES



**ELECTRO-OPTICS**



**ENVIRONMENTAL**



**THIN-FILM DEPOSITION**

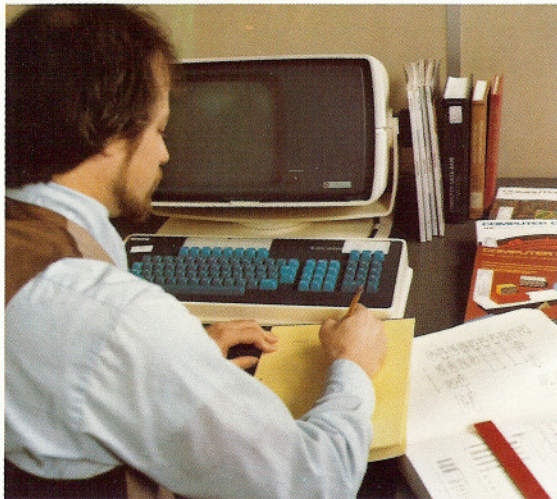
Librascope's laboratories are among the finest of their type in American industry. The Combat Systems, Acoustic Signal Processing, and Display Laboratories are coupled with the Librascope Computer Center to permit advanced studies of underwater acoustic phenomena. The Electro-Optics and

Thin Film Laboratories have helped the Company make major breakthroughs in the science of image projection. Prototype and production hardware are subjected to design validation through full-scale environmental testing in the Environmental Lab.



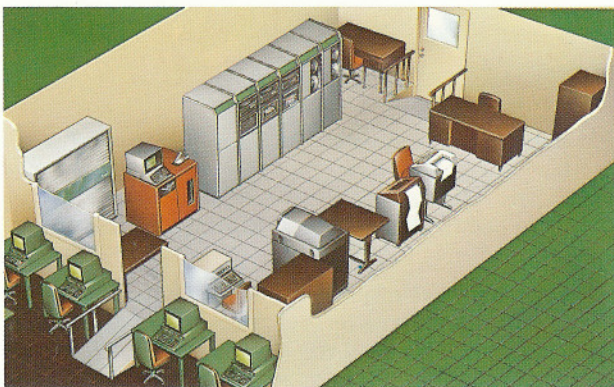
# **AUTOMATION: A KEY TO JOB SATISFACTION AND PROFESSIONAL GROWTH**

A high degree of automation exists throughout the company to minimize daily routine and permit personnel to work freely and creatively within their technical specialties. As new automation techniques have become practicable, the Company traditionally has been among the first to benefit from them. For example:



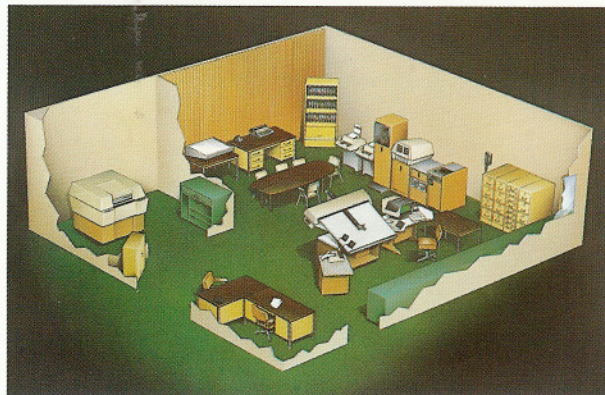
## **LIBRASCOPE DESIGN AUTOMATION SYSTEM (LDAS)**

The LDAS captures equipment descriptive information early in the logic and circuit design process, and produces automatically: complete checkout documentation (logic equations, point-to-point wiring, and component descriptions); complete manufacturing documentation (including numeric control tapes for the machine shop); and customer-deliverable design documentation. This system is the central interface to all other automated systems.



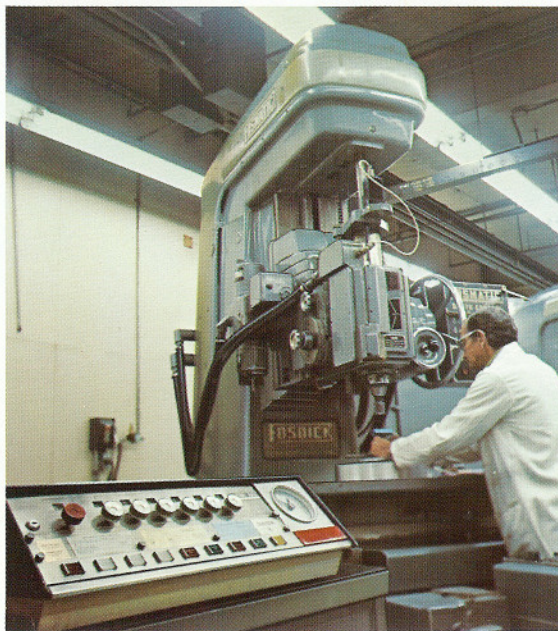
## **AUTOMATED TEXT PROCESSING SYSTEM**

A computer-aided Text Processing System automates the preparation of all company literature - manuals, specifications, etc. Documents are stored on disc or tape, called up on editorial terminals for change as necessary, and printed out automatically in any desired format or typeface.



## **COMPUTER AIDED DESIGN/DRAFTING SYSTEM**

This System is used to prepare engineering and manufacturing drawings, including those for high-precision multi-layer circuit boards. The system also provides for three-dimensional interactive CRT projections, permitting a user to rotate an assembly visually on any axis, and to view the entire interior/exterior of the assembly in perspective - for original mechanical design and use in illustrating handbooks.



## **AUTOMATED PRODUCTION CONTROL SYSTEM**

Manufacturing employs automated, tape-controlled machine shop equipment, coupled with automated test equipment, a computerized parts-purchase and inventory system, computer-aided scheduling routines, and a computer-based cost collection system employing transactors and terminals located throughout the plant.



# LOGISTICS: WORLDWIDE, WE SUPPORT WHAT WE BUILD

## INTEGRATED LOGISTICS SUPPORT



LOGISTICS SUPPORT ANALYSIS



MAINTENANCE ENGINEERING



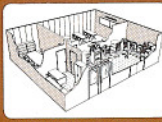
PLANNED MAINTENANCE SYSTEMS



TECHNICAL MANUALS



SPARES PROVISIONING DOCUMENTATION



INSTRUCTIONAL SYSTEMS DESIGN AND TRAINING



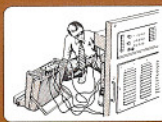
AUTOMATED SUPPORT DOCUMENTATION



INSTALLATION DESIGN



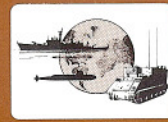
TRANSPORTATION AND PACKAGING ENGINEERING



INSTALLATION ENGINEERING AND CHECKOUT



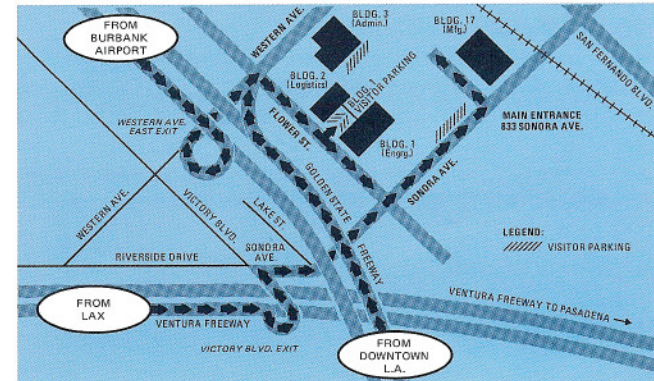
DEPOT SPARES AND REPAIR SUPPORT



FIELD SERVICE

Librascope supports its products for their life-time with a complete range of Integrated Logistics Support Services — some of which are pictured at the left. They range from planning a complete logistics support program, to the rush delivery of a single spare part to a Field Service Engineer stationed at an out-post halfway around the world. A separate department exists to carry out these vital services. As a matter of policy, Logistics engineers participate in the engineering design process to assure an easily maintained product.

## HOW TO GET TO LIBRASCOPE



Librascope is located in Glendale, California, central to the Los Angeles Freeway System. Public transportation from both the Los Angeles International and Burbank Airports is available to comfortable lodgings near the Company.

For additional information, write or telephone:  
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