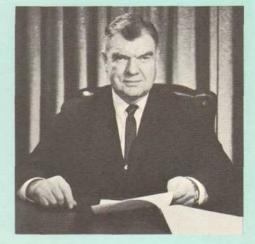
# LIBRASCOPE

## ... climate for ingenuity



### a message from the president...

Before writing this introduction, I asked several of our engineers for basic advantages they had found in their association with Librascope. Here are some of the answers: • an atmosphere planned for individual achievement • a policy and capability for quality performance = a wide range of opportunities within a related field a pioneer company in a dynamic industry . One summed it up as "a climate for ingenuity". For more than two decades, Librascope has recognized the importance of creative talent, imagination, and a freedom to exercise both. If such advantages would be important to you, we welcome your appraisal, and hope it will lead to a rewarding career.



FOUNDER AND PRESIDENT

The original Librascope Balance Computer, developed in 1937 by Company founderpresident Lewis W. Imm, pioneered the use of linkage mechanisms as computing elements.

climate for ingenuity / direction

a pioneer computer and control company in a dynamic industry



LIBRASCOPE HISTORY dates from 1937 when Lewis W. Imm, a young aeronautical engineer, founded the Company to produce a unique computing device he had invented for use during aircraft loading operations.

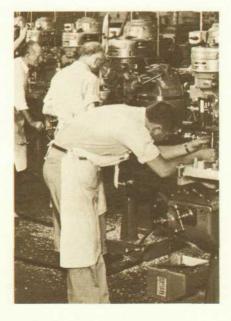
Imm's original balance computer, called a "Librascope," reduced time-consuming aircraft loading calculations to simple knob-turning and dial-reading. More important, it pioneered the use of linkage mechanisms in computing.

Several computers subsequently developed by Librascope featured the same linkage principle, greatly refined and expanded, and brought sizeable production orders from the U.S. Navy. Because Company manufacturing facilities were limited, Librascope joined General Precision Equipment Corporation of New York in 1941 to obtain capital needed for expansion.

World War II introduced Librascope to the study of weapon control problems unique to antisubmarine warfare. This experience enabled Librascope to develop a series of electromechanical analog fire control systems for U.S. Navy destroyers.

Shortly after World War II, Librascope activated plans for a longrange expansion of its facilities and over-all capabilities.

In 1948, the Company acquired key personnel and equipment of an optical research firm. Purchase of another company in 1954 strengthened Librascope in magnetics as related to digital computers. Acquisition of Precision Technology, Incorporated of Livermore, California, in 1957, further broadened Librascope's foundation for the future.





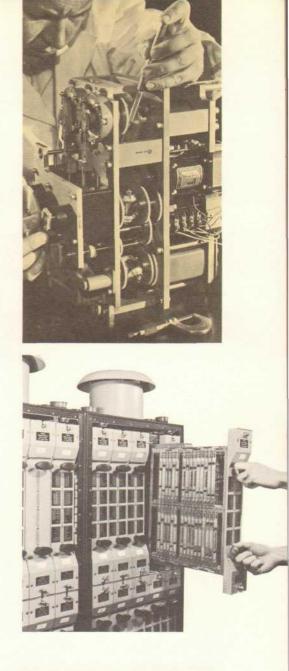


Through PTI, now called Librascope-Sunnyvale Branch, the Company has achieved notable success in the development of missile ordnance systems.

Post -World War II programs of research and development in analog and, later, digital computers and associated equipment rapidly accelerated Librascope growth. Current Company employment and square feet of working area are at record highs.

Librascope history records many notable "firsts" including development of the **I** first airborne digital navigation and bombing control computer **I** first desk-size, general purpose, digital computer for scientific and engineering use **I** first digital weapon control system for shipboard use **I** first digital weapon control system for submarine use **I** first integrated digital computing and data processing system for air traffic control **I** first miniature airborne digital navigation and guidance computer.

Today Librascope is busily engaged in the fields of electronics, electromechanics, magnetics, and optics. As the Company augments its experience and increases its already competent staff of engineers, scientists, physicists, and mathematicians, it confidently expects to garner still other "firsts" in diversified technical fields.





NAVY: Direct contracts with Navy Bureau of Weapons. Major subcontracts with Goodyear, General Electric, Minneapolis-Honeywell, and Electric Boat Company.



Lockheed.

AIR FORCE: Direct contracts with Wright Air Development Center. Major subcontracts with Douglas, Boeing, Hughes, United Aircraft, and



ARMY: Direct contracts with Quartermaster Corps, Corps of Engineers, and Signal Corps.



FEDERAL AVIATION AGENCY: Major subcontract with GPL Division, GPI for Air Traffic Control Systems.



COMMERCIAL: Complete custom computer control systems for industry. Computer components for such major firms as IBM, General Electric, Western Electric, and Bell Laboratory.

As Librascope has grown, so has its reputation for translating novel design concepts into highly reliable hardware. Important contracts from both industry and government include:

## **LIBRASCOPE** ... climate for ingenuity

Librascope became a subsidiary of General Precision Equipment Corporation of New York in 1941, then consolidated with three other GPE organizations, in early 1960, to form a new electronics company, General Precision, Inc.

Besides Librascope, this four-division firm includes GPL, Kearfott, and Link, all active in specialized areas of precision electronic technology.

Subsidiary companies of General Precision Equipment Corporation are engaged in the design, development, and production of precision electrical, mechanical, hydraulic, electronic, and optical systems, instruments, and components for many varied military, industrial, and business applications. Each company specializes in specific areas of scientific competence, but GPE products share a broad common base technically.

Productivity of a GPE company is never restricted by the limits of its own specializations. Member companies often exchange plant facilities and technical advice to solve design and production problems. Individual GPE companies frequently use the components of one or more of the affiliated GPE organizations. A policy of Co-ordinated Precision Technology permits engineering and technical personnel of each GPE company to seek the optimum solution to a customer's problem by applying all relevant techniques of the whole GPE group.

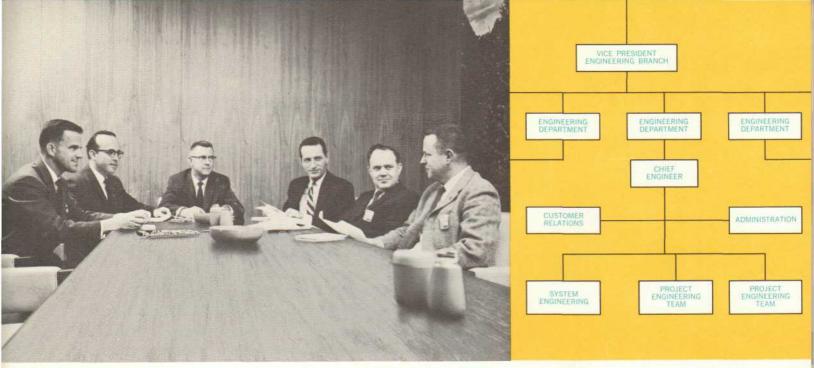
Principal plants of GPE's consolidated subsidiaries cover over 3 million square feet of floor space. Included are substantial laboratory, drafting, model shop, pilot plant, testing, and manufacturing facilities. Employees of GPE member organizations now number approximately 17,000 of whom over 4,000 are scientists, engineers, and technicians.

All GPE companies hold leading positions in their respective fields and each boasts a long-established reputation for management integrity and quality of output.

THE GPE COMPANIES: GPE Controls, Inc. 
General Precision, Inc. (Divisions: GPL, Kearfott, Librascope, Link) 
General Precision Systems Ltd. 
Graflex, Inc. 
National Theatre Supply Co. 
Shand and Jurs Co. 
The Strong Electric Corp. 
Royal Precision Corporation (jointly owned affiliate of GPE and Royal McBee Corporation)

## strong corporate background





#### climate for ingenuity decentralization

Systematic decentralization of engineering operations into distinct departments has expanded and diversified Librascope capabilities and has created rewarding opportunities in varied, technical fields.

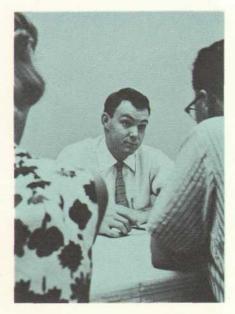
Each engineering department occupies separate quarters at either Glendale, Burbank, or Sunnyvale.

To meet the exacting demands of modern precision technology, Librascope engineering departments are organized basically around the applications of Company-developed computing equipment to certain specialized environments.

## an atmosphere for individual achievement







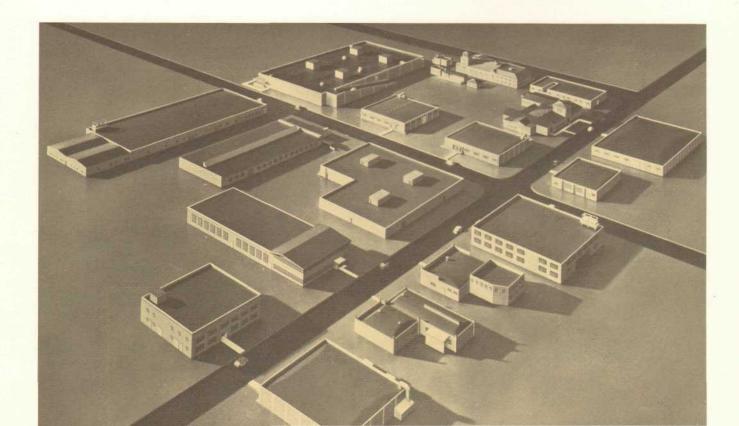




At Librascope-Glendale and Librascope-Burbank, a Company vicepresident directs engineering activities, assuring that over-all operations reflect basic management philosophy.

A chief engineer heads each development department and channels activities of his particular operating entity from customer contact through prototype production. As a further expression of planned decentralization, major phases of programs and contracts are handled within each department by self-contained project teams which are adequately staffed to fulfill project commitments.

The project team organization provides multiple opportunities for employee communications, advancement, and recognition. Personnel at all levels work directly with engineering management in relatively small functional engineering units. Work habits, initiative, general attitude, technical competence—all factors which define an individual's professional capabilities receive early and realistic evaluation. Thus personnel within these small closely-knit groups find it easier to "advance and be recognized" than do those in large engineering organizations.



#### climate for ingenuity diversification

MAJOR FIELDS OF INTEREST at Librascope cover an expanding range as the questioning minds of Company engineers and scientists delve into every important phase of technology. Current Librascope activities afford challenging opportunities beyond the limits of contemporary scientific frontiers. a wide range of opportunities within related fields

#### AIRBORNE EQUIPMENT ENGINEERING DEPARTMENT

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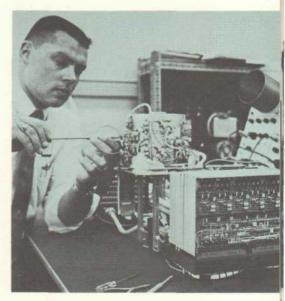
Projects of future space exploration and bold new concepts of instrumentation for the navigation, guidance, and control of missiles, aircraft, and space vehicles command the attention of Librascope's Airborne Equipment Engineering Department.

From one of many areas of earlier investigation came the department's first major success in 1953: development of the Navy's first digital bombing and navigation computer to go into production.

More recently, department engineers developed the first truly small digital computer tailored for applications where parameters of weight, volume, reliability, and environment are prime considerations.

Airborne Engineering's activity includes the development of a guidance computer for Project Centaur, the nation's first space vehicle of the "high energy" class. In this large-scale venture, the department is cooperating with the Weapons Guidance Laboratory at the Central Development Command (formerly Wright Air Development Center).



















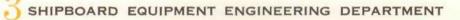
#### COMMERCIAL EQUIPMENT ENGINEERING DEPARTMENT

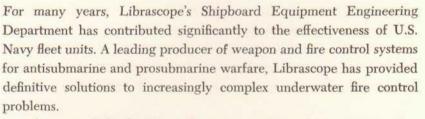
The Commercial Equipment Engineering Department, at Librascope-Burbank, develops electronic computers, data processing systems, instruments, and components for commercial markets. Department-developed equipment is used in such varied applications as industrial process control, automatic data logging, scientific data processing, and business accounting.

Typical of the department's major successes is the LGP-30\*, the first general purpose, desk-size, low-cost, digital computer for scientific and engineering applications. Several hundred LGP-30's have been marketed to date by Royal McBee Corporation which sells and services the versatile computer.

The LIBRATROL<sup>\*</sup> 500 and 1000, computerized process control systems developed by Company commercial engineers, are adaptable for applications in petroleum and chemical industries, gas and electric utility plants, steel mills, the aircraft industry, and atomic energy plants.

Today most of the electronic computing systems and data processing equipment marketed through Royal McBee originated in the minds of Librascope commercial engineers, making the Company a significant factor in the field. • TRADEMARK, GENERAL PRECISION. INC.





Librascope helped pioneer the system concept for underwater fire control, producing most antisubmarine fire control systems now installed in fleet surface vessels. Purpose of these integrated electromechanical analog systems is to direct hedgehog, depth charge, and torpedo attacks.

Department engineers have effectively refined and adapted the latest methods of target location, data processing, computation, and instrumentation for application in the first digital fire control systems to be installed in U.S. Navy surface ships and submarines.

Currently, department scientists, engineers, and mathematicians are working toward integration of all control functions on naval ships and submarines. These efforts promise radically new concepts for optimizing man-machine relationships in the nuclear age.









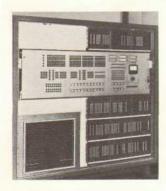
#### 4 SPECIAL DEVICES ENGINEERING DEPARTMENT

Librascope's Special Devices Engineering Department is organized primarily to develop ground-based systems for military and governmental agencies. Important secondary interests of the department are optical instrumentation, infrared detection, and photogrammetry.

Special Devices engineers have developed precision optical devices and cameras for applications in viewfinding, bombing, aircraft navigation, and aerial reconnaissance. Data revealed in high altitude studies, using department-developed planetary tracking devices, helps chart the heavens for man's exploration of outer space.

As participants with two other General Precision, Inc. divisions, Librascope Special Devices engineers developed the heart of the Air Traffic Control System for the Federal Aviation Agency. The Librascope equipment, a large-scale, general purpose, high-speed Computer and Data Processor which uses digital computing techniques, is housed in modular consoles 6 feet high and 3 feet deep.

The FAA Air Traffic Control System is designed for installation at all major U.S. air terminals. Purpose of the over-all program: to increase safety and improve efficiency along the nation's crowded airways of jet travel.















#### LIBRASCOPE-SUNNYVALE

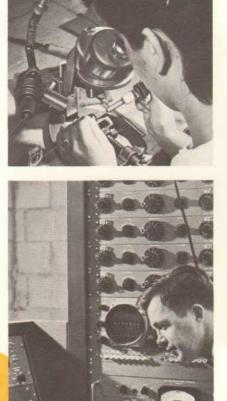
Librascope-Sunnyvale engineers are meeting the challenge posed by Company activities in missile ordnance systems, missile fuzing components, special atomic energy projects, and related areas.

Recently the Sunnyvale engineers have developed a missile ordnance "first"—the exploding bridgewire (EBW) technique. Use of exploding bridgewire represents a departure from conventional methods of initiation in missile ordnance. Exploding bridgewire can replace squibs and usual detonating mechanisms in all present and planned ordnance systems. The new technique introduces greater safety into missile and space vehicle programs.

Other notable engineering achievements at Librascope-Sunnyvale include the development of an electrostatic scoring system for missiletarget measurement, an ultrahigh-speed electronic camera, and a new line of insensitive explosive materials called TECHNITES\*.

Typical of every engineering activity at Librascope, technical personnel at Sunnyvale are rapidly widening their fields of interest while they steadily advance toward their own individual career goals.

# TRADEMARK, GENERAL PRECISION, INC.





#### APPLIED RESEARCH DEPARTMENT

The Applied Research Department at Librascope is investigating the relatively new electronic field of solid state physics, popularly called molecular engineering. Broadly categorized, the department's fields of interest include narrow-band interference filters, infrared detectors, magnetic thin films, electroluminescence, and thermoelectricity.

A specific example of Applied Research activity is the development of new techniques of digital computer storage. Use of ferromagnetic film for this application has led to microminiaturization of digital storage elements, improved computer performance, and reduced power requirements.

Applied Research projects enable other departments to maintain leadership in their respective fields. Applied Research's continuing investigations into basic but relatively unknown physical principles enable the Company to develop hardware 2 to 3 years or more ahead of actual need. The department is also evolving computer memory techniques for possible applications 5 to 10 years into the future.



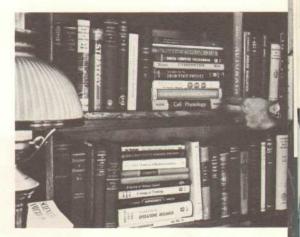
## 7 ADVANCED RESEARCH DEPARTMENT

Librascope's Advanced Research Department is, in reality, a small community of scientists of diverse specialties undertaking fundamental theoretical and physical research on automata. The department strongly emphasizes independent research by the individual and encourages intellectual trade with eminent scientists of other institutions.

Through research grants and other aid, the department materially assists important studies in academic laboratories ranging broadly over the biological, physical, psychological, and mathematical sciences.

Long-range objectives of these efforts are twofold: (1) to evolve theory and tools (intellectual and physical) leading to a better understanding of intelligent mechanisms and (2) to further the evolution of intelligent machines as useful and powerful extensions of Man's mind.

Serious researchers and scientists who want more specific information about Advanced Research activities at Librascope should correspond directly with the department director, indicating briefly their special interest and qualifications.



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engineering support groups

Several specialized activities provide supporting services for the Company's engineering departments.

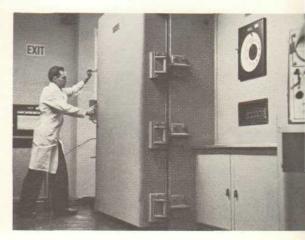
PRODUCTION ENGINEERING: Coordinates design, development, and production activities; monitors product's design, during development phase of contracts, to assure optimum producibility and economy of manufacture.

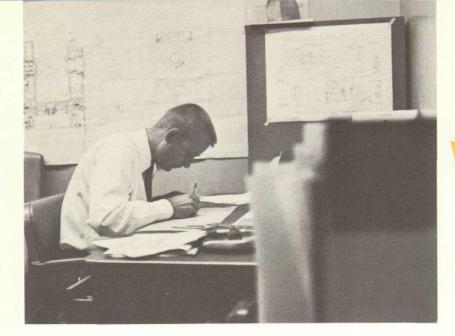
LABORATORY SERVICES: Supervise operation of extensive Electronics, Mechanical, Process, and Engineering Test Group Labs. Impressive physical assets of its labs enable Librascope to handle important research and development projects. Close cooperation between lab personnel and development engineers heightens efficiency of Librascope's varied operations.

PUBLICATIONS SERVICES: Prepare technical documentation which accompanies Librascope-developed equipment. Growing staff of writers, editors, and illustrators produces handbooks, technical reports, parts catalogs, factory acceptance tests, military specifications, and engineering reports and proposals.







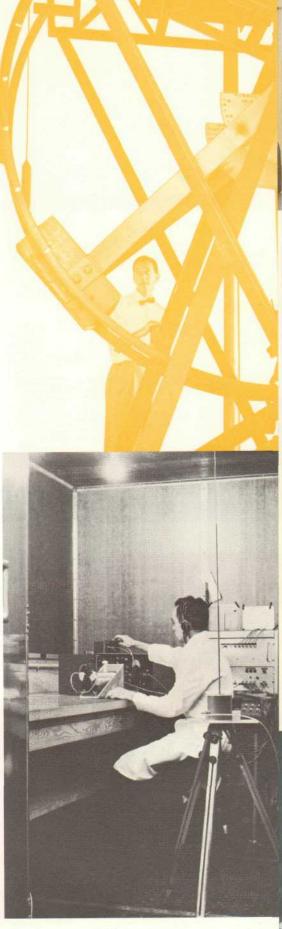


RELIABILITY ENGINEERING: Evaluates and selects component parts with regard to reliability; performs environmental tests on assemblies; analyzes systems and makes specific reliability improvement recommendations.

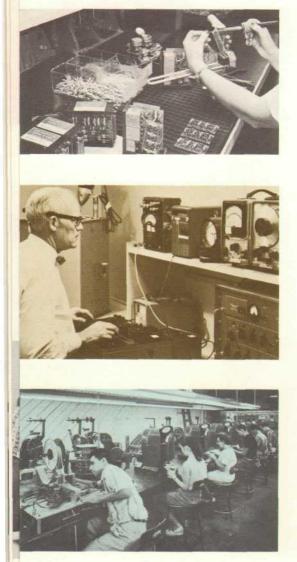
SERVICE OPERATIONS: Encompass an area which helps Librascope effectively coordinate its operations with the needs of customers. Responsibilities of the Service Operations groups are as follows:

- SPARES ANALYSIS GROUP: Analyzes equipment and recommends spare parts requirements. Coordinates provisioning of spare parts based on customer needs.
- CUSTOMER SERVICE GROUP: Supervises delivery of the right spare part to the right customer. Maintains and analyzes customer service requirement records.
- FIELD SERVICE GROUP: Supervises installation and maintenance of Company-developed instruments and systems.
- TRAINING SERVICES GROUP: Instructs Librascope field engineers and customer representatives in the operation and maintenance of Librascope equipment.





## complete production facilities



Librascope is well equipped to handle the important production contracts resulting from Company research and development.

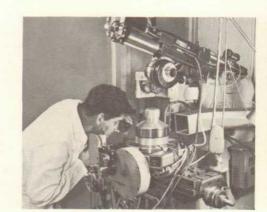
To meet rigid governmental and commercial standards, Librascope uses high quality production and testing devices and machines of both American and European manufacture, supplemented by equipment designed and built by skilled Company technicians.

Over 180,000 square feet of air-conditioned space are devoted to the assembly of precision parts and components into finished production units. Assembly activities utilize many electronic, electromechanical, mechanical, optical, and magnetic techniques and tools. Semiautomatic eyeletters, punches, and drills, for example, prepare etched circuit boards for miniature electronic components which are then inserted, dip-soldered, and tested by automatic equipment. When completely processed and assembled, the boards are integrated into computing equipment built by Librascope for many varied applications.

Nearly every phase of shop production is duplicated in the Prototype Shop. Facilities include a complete sheet metal shop, machine shop, assembly area, and wiring and soldering equipment.

Projects of the Process Lab include work on special plating and etching processes, etched circuit development, and commutator and digital code discs. Certain techniques, revealed in advance in the Process Lab, often prove applicable for use in heavy production runs.

Librascope's extensive production facilities afford Company engineers the distinct satisfaction of seeing their individual design and development contributions transformed into practical, useful hardware.







Through the years, Librascope has maintained one of the most comprehensive programs of employee benefits available in the industry.

SALARY INCREASES: Handled under an established policy of merit increases for proper recognition of individual effort. Moreover, Librascope is a fast-growing company in a fast-growing industry. New levels of challenging opportunities are constantly being created for staff members with demonstrated professional competence and creative aptitude.

SICK LEAVE: A liberal policy provides a graduated scale of sick leave payments.

PAID VACATIONS: Two weeks paid vacation is allowed upon completion of each year of service, up to 10 years. Beginning in the tenth year of service, an employee is eligible for a 3-week paid vacation annually.

RETIREMENT: A funded retirement plan, established and financed by General Precision Equipment Corporation, provides an annual retirement allowance for all salaried employees with at least 5 years of service upon reaching age 65. Retirement pay varies with years of service and average earnings.

GROUP INSURANCE: Librascope's group insurance plan compares favorably with others offered throughout the industry today. This voluntary coverage includes life, accident, and disability protection for the employee, plus a complete schedule of medical and hospitalization payments for the employee, his wife, and family. Because the Company contributes substantially to the premium, the group plan provides coverage at a fraction of regular individual rates. personnel policy at Librascope

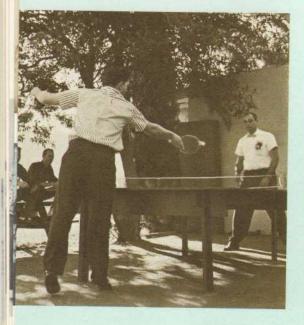




ADVANCED EDUCATIONAL SUPPORT: Librascope encourages advancement of professional status through its educational refund plan. It applies toward academic studies undertaken by an employee to extend his capabilities for (1) his present assignment, (2) potential advancement, or (3) a post-graduate degree. Under the plan, the Company refunds tuition costs, up to \$200 per year, for courses taken at schools approved by an educational committee.

CREDIT UNION: Owned and managed by Librascope employees. Provides a convenient savings program as well as low interest loans.

MOVING ALLOWANCES: When an employee is relocated, the Company, in certain approved situations, provides an allowance for transporting household effects plus a per diem arrangement.







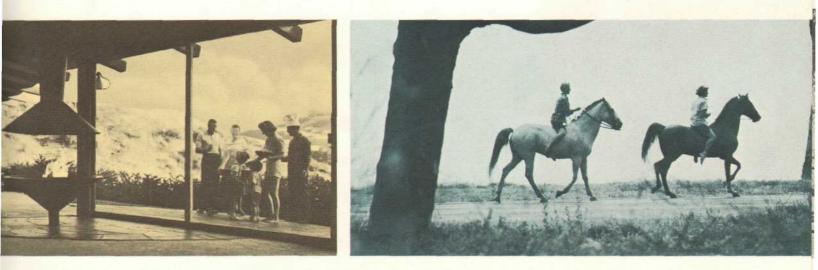
Librascope headquarters are in Glendale, California, a suburban residential city of 105,000 situated in the heart of Los Angeles County.

An unlimited choice of living quarters, either apartment or residential, exists within a 30-minute drive of Librascope. Desirable residential areas with good schools and shopping facilities are found in Glendale, Burbank, Pasadena or adjacent districts of Los Angeles, including Los Feliz, Hollywood, and the San Fernando Valley.

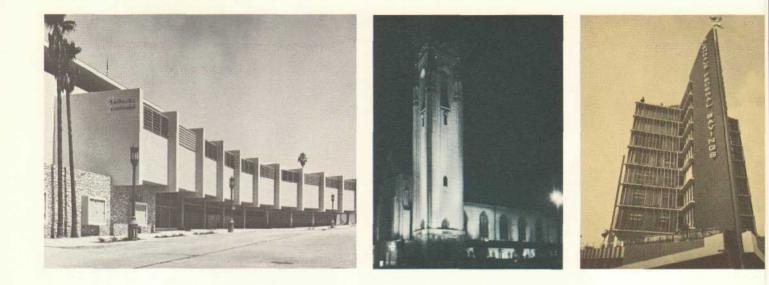
EDUCATION: Three of the country's leading universities, California Institute of Technology, University of California at Los Angeles (UCLA), and the University of Southern California (USC), are all minutes away from Librascope.

The Los Angeles area also boasts many fine private colleges and public junior colleges.

RECREATION: A vast network of modern freeways affords easy access to beach, mountain, and desert resort areas. Some of the more popular family sports include trout and deep-sea fishing, swimming, surfing, skin diving, boating, skiing, and golfing. Just a mile from Librascope is famous Griffith Park, a 4000-acre public recreation area with three golf courses, a zoo, amusement areas, and facilities for horseback riding, picnics, and hiking. living in Southern California



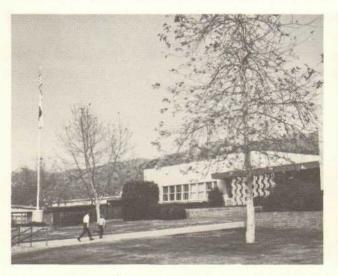




ENTERTAINMENT: Los Angeles, the entertainment and sports capital of the world, features a full calendar of outstanding events. The Hollywood Bowl, Greek Theatre, Philharmonic Auditorium, Coliseum, Pan Pacific Auditorium and the new Sports Arena are all located within the area. And world-famous Disneyland is less than an hour's drive away.

CLIMATE: Southern California boasts a semitropical climate with an average daily temperature range from 54 to 74 degrees, and nearly 300 days of sunshine per year.









## a look into the future..

"Dynamic growth in over-all capabilities" describes Librascope's past. "Greater achievement in still broader fields" keynotes its future.

With a reputation established in military agencies, business and industry, the Company is planning for tomorrow and acquiring the additional physical facilities needed for further expansion.

Prospects of any organization depend on the need for its products and services. There is little doubt that the development and production of electronic computing devices and systems will increase greatly in years to come.

Librascope, by virtue of its solid reputation, its financial backing, and its present stature in a thriving industry, faces a promising future.

Professionally trained engineers, scientists, physicists, and mathematicians are invited to make further investigation as to career opportunities at Librascope by writing to: *Employment Manager* LIBRASCOPE DIVISION 
General Precision, Inc. 
808 Western Avenue, Glendale 1, California

Prepared by the Public Relations Department



LIBRASCOPE Division GENERAL PRECISION, INC. 808 WESTERN AVENUE • GLENDALE, CALIFORNIA