THE LIBRAZETTE

FOR EMPLOYEES OF LIBRASCOPE GROUP . GENERAL PRECISION, INC.

Vol. 10, No. 9

Librascope Boasts \$6M Sales Bookings

Receipt of over \$6 million in contracts for the months of June and July was announced by Librascope President R. W. Lee. This significant rise in sales bookings is attributed to an increase in engineering proposal efforts and stepped-up marketing activities.

The new line of large-scale magnetic disc memory systems has accounted for more than \$1 million of this total. Sales to the Atomic Energy Commission's Lawrence Radiation Laboratory and General Electric, Phoenix, represent a significant breakthrough beyond the initial installation for the USAF for the 473L program.

The Lawrence Lab has awarded Librascope a \$492,216 contract for the delivery of two L-4800 Librafiles and one controller unit.

The L-4800 is a large-capacity, high-speed, random-access information storage system, consisting of two principal elements; (1) a mass memory unit to provide data storage, and (2) a controller unit that provides necessary interface, control and read/write electronics.

Each file is made up of six 48 inch discs that can store up to 400 million bits of information, depending on the number of heads used and the specific data organization. Information retrieval is either fixed-address search or search by recordcontent.

This equipment is to be used at LRL in a time sharing application and will provide 800 million bits of rapid access data for a complex of computers that include the CDC3600, IBM Stretch, two IBM 7094's and a LARC, all communicating with the file through a PDP-6 computer which is used as a buffer processor.

Another magnetic disc memory contract has been received from G. E. Phoenix. This contract, in the amount of \$615,000, calls for the delivery of two L-1238 memory systems.

The L-1238, like the L-4800, consists of two principal elements: (1) a mass memory unit to provide date storage, and (2) a controller unit that provides necessary interface, control and read/write electronics.

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One unit will be employed by MIT in a time sharing application for Project "MAC." The other unit is to be used by GE for program development and debugging associated with the "MAC" project and also for display with their own equipment.

Other contracts of consequence were awarded the Systems Division by the Naval Ordnance Laboratories. NOL granted \$190,320 for further studies on the SUBROC program.

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Librascope supports Navy Laboratory

The Bureau of Naval Weapons, in conjunction with the U.S. Naval Underwater Ordnance Station, Newport, Rhode Island, has started the implementation of a complete, sophisticated fire control system laboratory to support the Mk 48 Torpedo Weapon System Program.

It is the Bureau's intention, according to R. D. Bartlome, Mk 48 Program Manager, to have Librascope support the U.S. Naval Underwater Ordnance Station during all phases of the laboratory test program. The need for this extensive program, which is unique in itself with regard to previous ASW Fire Control development programs, serves to illustrate the importance of the Mk 48 Weapon System to our national defense.

This technical support effort, with G. H. Klein as project manager, represents a significant opportunity for Librascope. The Systems Division will be called upon to work directly with the Navy over a substantial period of time. This work could lead to many other development and engineering programs.

The laboratory is being established to provide for fire control systems testing, fire control equipment testing, shipboard environmental simulation testing, evaluation team training, technical manual verification and operational use of the equipment. The laboratory will be equipped with an elaborate temperature control system, variable power sources,

simulated torpedo tubes, facilities to sim-(Continued on Page 7)



INSPECTING MODEL — are from left to right: F. Lenzen, J. L. Deitz, F. C. McAndrews, M. Center, R. W. Lee, G. H. Klein, R. D. Bartlome, E. T. Pool and J. Mielkus. The model shown is an accurately scaled mockup of the proposed fire control laboratory. According to G. H. Klein, Project Manager, this model is designed with moveable walls, partitions and equipment and will be utilized as a design aid in optimizing the laboratory layout.



LOADING UP — The coaches for an East Coast tour are Aaron Mendoza, Jr., and Marty Rudolph on the left. Mendoza, a former Librascope employee, headed up the sales team while Rudolph conducted the demonstrations. Also on the tour was Larry Rishovd, who handled the technical programming for the unit.

L-2010 Trailer Innovation in Marketing Techniques

A new dimension has been added to military marketing as a complete electronic computer system, produced here, visited prospects at a dozen East Coast facilities. These included the Army, Navy, NASA, and industry. This unique idea involved a mobile demonstration tour which covered the New York, Philadelphia, New Jersey, and Washington, D. C. areas.

Librascope fitted an operating L-2010 Computer System into a camper-type coach. A sales team drove the unit literally up to the front door of each facility for appointments with key personnel. The requests to see the system in operation created a tight schedule but all facilities on the planned tour were visited.

The response has been gratifying, according to A. J. Pankratz, L-2010 Project Manager. Requests for Proposals have been received from potential customers such as the Applied Physics Laboratory at the John Hopkins University and the U.S. Naval Marine Engineering Lab.

This tour also served to introduce the Librascope militarized Mobile Disc Files.

Road tours are, of course, not new among computer manufacturers. A conventional demonstration is usually handled by shipping the system to a display site and setting it up for operation. In the case of the L-2010, the computer was continuously operative, and ready for demonstration in the coach.

The L-2010 is designed for field use in a varity of military applications, on land or sea. Being highly resistant to shock or vibration, it will operate normally while under the stresses of tactical employment as a navigational or fire control computer and withstand the abuses of military transport on land, sea, or in the air. The unit contains waterproof fittings, making it impervious to most environments including salt water spray, mud, or rain.

Among its other capabilities, the L-2010 can accept information from navigational instruments, pinpointing a ship's position or plotting its course. Other applications of the computer include: location of mines and underwater hazards, coastal and geodetic survey work, and field artillery fire control.



Librascope in Space

Librascope Group, in company with General Precision Incorporated's Link and Aerospace Groups, are actively involved in the Nations space effort. They are participating in both the un-manned Surveyor program, and the Apollo manned Moon shot.

A Status Display Board developed here, with A. J. Pankratz as Project Manager, has been installed and is successfully operating at the Jet Propulsion Laboratories in Pasadena. The Display Board will be used in the Spacecraft Television Ground Data Handling System. Librascope is working with Link. Palo Alto on the system, which will be a part of the Surveyor Spacecraft Program. the first soft-landing on the Moon. According to Don Christensen, Project Engineer, the board will display information received from the spacecraft pertaining to the television camera on board, such as camera elevation, focal lengths, iris and shutter speeds, etc.

Librascope's Washington Engineering Branch is developing a telescope and sextant simulator subsystem for the Apollo Mission Simulator (AMS), which will be used to train astronauts for the actual moon shot. The complete AMS system is being developed and built by the Link Group. The telescope and sextant simulator is an ingenious device to train astronauts to plot and travel the correct course to the Moon.

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SPACECRAFT DISPLAY BOARD—is being looked over by Don Christenson, Project Engineer, and A. J. Pankratz, Program Manager, before delivery to Jet Propulsion Laboratories in Pasadena. Display Board, developed by Librascope, will be installed at JPL for use in the Surveyor Spacecraft Television Ground Data Handling System.



TV WATCHERS — The kickoff of the Zero Defects Program was a special telecast viewed by Librascope employees on more than 80 television sets placed throughout the facilities. This telecast preceded the initial briefing of the groups by their supervisors.

Z-D—97% Sign-up and Still Rising

The response to the Zero Defects program at Librascope has been all but unanimous, with over 90% participation the first week. With this printing of the LIBRAZETTE, the endorsement has risen to over 97%, and Pledge Card stubs are still coming in.

The Zero Defects committee is anticipating the same type of enthusiastic cooperation in the second phase of the program, that of goal setting. Setting goals and attaining them, is essential to the success of the Z-D program, and this phase can only be accomplished by the co-operative efforts of the employees.

The supervisors will have the responsibility for defining objectives, and assisting their groups in the planning of goals.

All groups are being asked by their supervisors to submit ideas and suggestitions concerning performance goals. It is plup to the individuals to volunteer observations on how their group can best contribute to the total Zero Defects program.

Individual and group performance with respect to attainment of established goals, will be recognized and rewarded.

To be able to acknowledge individual participation in the program, the goals set will have to be measurable.

When a supervisor feels his group has set meaningful and practical goals, he then forwards them to the Measurement Sub-committee. This committee, headed by D. J. Beushausen, will review the proposed goals as to their measurability and feasibility.

The goals will then be returned to the various groups for placement on the goal charts. Periodically, the performance levels of the groups will be plotted on the overlay graphs for the charts. This will be accomplished as frequently as possible in order to allow the individual groups to see how they are measuring up to the standards they set.

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General Precisions Inc.'s Aerospace and Link groups contributed significantly in the recent picture-taking mission to Mars by the Mariner 4 spacecraft. Aerospace's Kearfott Division supplied the gyros and actuators for the midcourse maneuver last December, and Link's Video Film Converter converted a series of impulses sent 180 million miles through space, into the first close-up photos of the red planet.

The Video Film Converter was originally developed at the Link Palo Alto laboratory to reconstruct pictures of the lunar surface during the Ranger missions.

New Names, Broader Objectives

The names of Librascope's three major operating elements have been revamped in recent weeks in order to more clearly identify them with their areas of responsibility and capability.

The changes began when the Commercial Computer Division was redesignated "Components Division." This change was made following the decision to discontinue the design, manufacture and sale of commercial computers, resulting in the sale of part of the commercial computer operation to Control Data Corp. The division hereafter will concentrate on the development, manufacture and sale of components including disc and other memory devices, for use as original equipment in computers made by other manufacturers.

The name change of the Surface Equipment Division to "Systems Division" more clearly defines the broadened objectives of the Division.

In addition to ASW Fire Control Systems for surface and subsurface applications, the Division designs and produces data processing systems for mobile and fixed land-based installation.

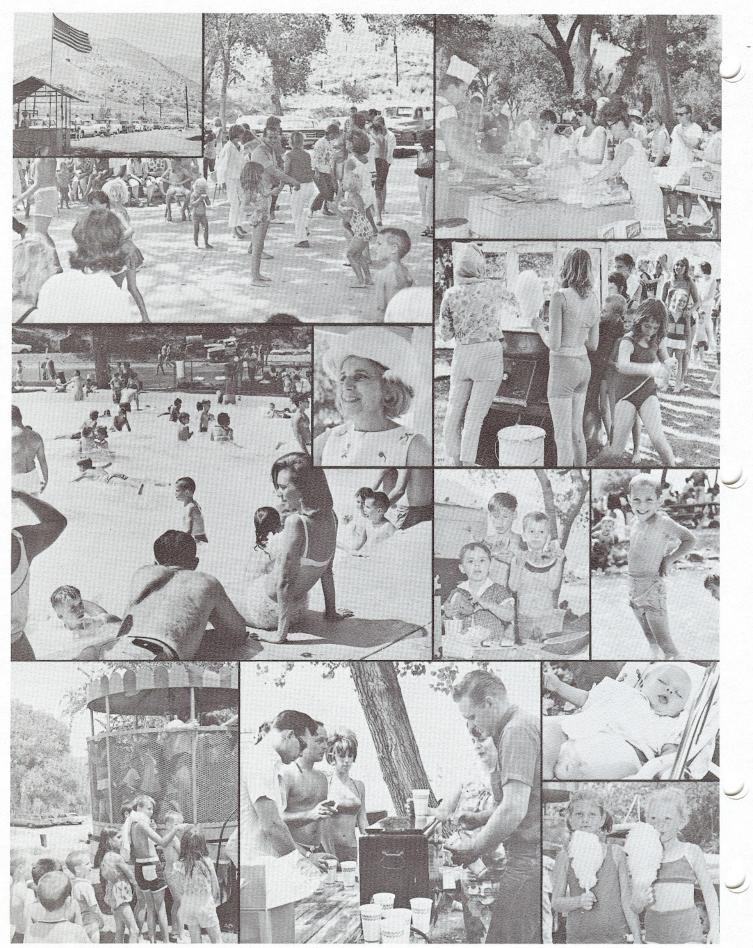
In keeping with these recent changes, the Research and Systems Center will be known as the "Advanced Technology Center." The Center will be concentrating its efforts on advancing the state-of-the-art in such areas as display techniques, infra-red detectors, and computer memory systems.

Because of its success in these missions, it was selected for ground-data-handling in support of the Mariner 4 flight.

Used also on the Ranger IX project was an electronic scan converter. The Link Scan Converter accepted the incoming slow-scan video signals and converted them to the fast-scan signal used in commercial television. The result was that the TV viewers were, in effect, able to "make the flight" down in the moon crater Alphonsus along with the Ranger vehicle. This same scan converter will be used on the Surveyor project to receive the photos of the "soft-landing" on the Moon.

The Kearfott Division supplied the sensitive instruments (gyroscopes and actuators) used in the vital midcourse maneuvers for the Mariner 4 as well as the Mariner 2, on its flight to Venus more than two years ago. During these maneuvers, extremely precise launch attitude control and midcourse corrections were performed to assure the success of the mission.

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ACCENT ON SECURITY - D. W. Smith, President of General Precision Equipment Corporation (seated center) joins Company industrial security specialists after welcoming them to three-day seminar at the Company's headquarters in Tarrytown, N.Y.

Standing (left to right) — Joseph E. Loughran, Aerospace Group; H. Lee Baker, Link Group; Alfred M. Gordon, Pleasantville Instrument Corporation; Robert D. Higgons, Link Computation Center; John J. Felago, Kearfott Division; Ernest E. Felago, General Precision Equipment Corporation; Herbert W. Roseler, GPL Division; Nicholas Bahorich, GPL Division; James D. Moran, Aerospace Systems Division; Virgil H. Herald, Librascope

Seated with Mr. Smith are (I) Elsie Wilcox, Link Group; and (r) Shirley S. Brandt, General Precision Inc.

Award Winning Speech Makers

Joe Freiberg was recently presented with the "Outstanding Toastmaster" award by Casey Innocenti, President of the Librascope Toastmasters Club #1978. This award, given semi-annually to the member who has contributed the most through active participation, interest, attendance, and enthusiasm for toastmastering, brought this comment for Freiberg, "If you put the effort into it, you get the awards and recognition."

Freiberg, a charter member of the club, cited Toastmasters speeches as being both informative and entertaining. "There is no better way to build personal and social confidence than through pub-

lic speaking," he added.

Dr. Ted Lewis presented a "Certificate of Merit" for completion of Basic Speech Training to Harry Pace, who won the "Best Speech" award numerous times while making the required 12 speeches. Pace has also represented the club most effectively in "Speak-Offs" with other clubs.

The Librascope Toastmasters Club meets on the 1st and 3rd Wednesdays of the month at the Old Town Inn, Burbank. Those interested may contact club officers: Casey Innocenti, President; Dr. E. R. Lewis, Educational Vice President: H. Meyer, Administrative Vice President; Bill Jordan, Treasurer; Dr. Herman Graff, Secretary; Ed Alderman, Sergeantat-Arms.



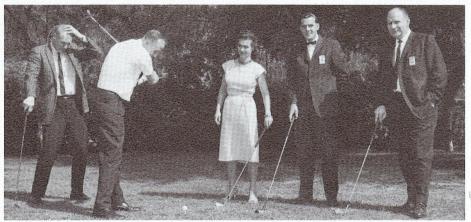
Security officers representing all General Precision companies assembled for a three-day seminar at Tarrytown, New York on June 8-10 to review and discuss recent significant changes in DoD regulations and procedures. V. H. Hearld, Security Director, was the Librascope representative.

Representatives of the Department of Defense also attended the seminar and actively participated in the discussions which were held at GPE headquarters.

Although the accent of the meeting was on the review of the revised DoD industrial security program, the seminar also included sessions on NATO clearances, indoctrination of new employees, classified visits, inspections, application of closed circuit television, civil defense obligations and other company security matters.

The conference was convened and conducted by E. E. Felago, Director of Security for the Corporation. The attendees were welcomed by D. W. Smith, GPE President, who addressed the group at the opening session.

This was the fifth consecutive year that General Precision security managers have assembled to assure that an effective and coordinated security program is conducted at all of the Corporation's opera-



SOUTHPAW SWINGER — Bill Kerr, outgoing Golf Club President, registers disbelief as Mark Ferry, newly elected President, takes his left-handed cut at the ball. Looking on at right are the other 1965 officers: Elizabeth Sutton, Secretary; Ted Embree, Vice President; and Hal Dodson, Treasurer. Winners of the recent Librascope vs. Kearfott Golf Tournament are as follows: 1st place team, Librascope, tie between F. Copple-H. Smith (net 58) and G. Thomson-T. Embree (net 58); 2nd place team, Kearfott, Lowrey-Frisque (net 62); 3rd place team, Librascope, tie between C. Culver-S. Brinkley (net 64) and F. Webb-D. Nixon (net 64).

Individual low net were: 1st place Kearfott, B. Maxwell (net 70) and 2nd place Librascope H. Dodson (net 71).

Full-House Listen To Pinczower on Hybrid Computation

Hybrid Computation is the subject of a course, conducted by H. J. Pinczower, Staff Engineer, being held as part of Librascope's in-plant training program.

A capacity enrollment of Engineering and Research personnel are attending 7 one-hour lectures on a survey of methods of combining analog and digital techniques for the study of engineering problems.

According to Pinczower, the purpose of the course is to provide a perspective on the combined use of analog and digital techniques. The potential advantages and limitations of various approaches are being reviewed in the light of past successes and failures and from an evaluation of developments now in progress.

This course is part of Librascope's renewed effort to provide technical personnel with the opportunity to broaden their knowledge in areas peculiar to their field of endeavor.



PREPARING BLACKBOARD — before a lecture, is H. J. Pinczower, course instructor. The course, on Hybrid Computation, is being attended by a full house of ambitious Librascope technical personnel.

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ulate shipboard wiring and a simulation and data acquisition center. Capability will be provided for the independent exercising of several fire control systems and test programs simultaneously.

The laboratory program will be conducted in five phases. Phase I, which involves study and planning, has already been completed. The contract award to Librascope for this phase was \$60,000. Partial funding amounting to \$44,600 has been granted to Librascope to allow the commencement of Phase II, encompassing the detail laboratory design and the preparation of equipment specifications of simulation data recording and system switching.

Phase III will include the design and fabrication of the simulation, recording and switching equipment. Phase IV will include the installation and checkout of all equipment scheduled for use in the laboratory. Phase V will consist of the utilization of the laboratory for the various test programs.

Recruiting Efforts at a New High

With the increasingly heavy workload in Librascope's Engineering and Marketing areas, the search for key technical personnel has been an all-out effort in the past few months. This high-pitched recruiting effort has resulted in the acquisition of a sizable number of such personnel. The following is a list of new personnel for the Systems Division:

ALLEN, Gerald F. — Senior Engineer — University of Colorado, B.S., Engineering Physics — Reports to H. C. Applegate for Mathematical analysis in sonar data processing.

CHAPIN, Larry H. — Staff Engineer — Missouri School of Mines, M.S., Physics — Reports to J. L. Deitz to perform systems analysis for Mk 48 program.

COX, David — Staff Engineer — Southern Methodist University, M.S., Electronic Engineering — Reports to R. L. McIntyre for systems design and hardware development. EGASHIRA, Kiichi — Engineer — University of Southern California, B.S., Mechanical Engineering — Reports to W. Emery to perform on reliability, also translating documents of the Tokyo memory plane, and works on NOL fuel failure and analysis requirements.

GABRIELSON, Ralph — Mathematician — Oregon State University, M.S., Mathematics — Reports to H. C. Applegate to perform mathematical analysis for ASW systems problems.

GARNER, William — Staff Engineer — U.S. Naval Post Graduate School, M.S., Electronic Engineering — Reports to H. A. Keit to establish advanced system design concepts.

GERMANO, Alfred T. — Marketing Manager — Pratt Institute, B.S., Electrical Engineering — Reports to R. O. Vaughn for marketing to the Navy with emphasis on the Mk 48 program.

HACHEY, Leon E. — Product Assurance Manager, Mk 48 — Northeastern University, B.S., E. E. — Reports to W. J. Picker to administer product assurance on Mk 48 program.

HARDWEGG, Wesley H. — Packaging Engineer — Reports to R. Mothersbaugh for Package design for environmental product protection.

KENNY, Ronald P. — Engineer — Lehigh University, B.S., Electronic Engineering — Reports to R. P. Schleicher for design of logic circuits to implement Mk 48.

KRAMER, Judd C. — Marketing Representative III — New York University, B.S., Electrical Engineering — Reports to H. Keit for studies of advanced applications for information processing systems.

KURN, Henry C. – Engineering Writer – Reports to K. Luther for Publications Documentation on Mk 48 program.

LARSON, STANLEY D. — Engineering Writer — Reports to K. Luther as group leader on Publications Documentation on Mk 48 program.

LONG, John W. — Customer Training Instructor — San Diego City College, A.A., Science — Reports to L. Crawford for customer training on Mk 48 program.

MUNDY, Jerome J. — Installation Engineer — Purdue University, B.S., Electrical Engineering — Reports to C. J. Cardea for analysis of installation requirements on Mk 48 program.

PAKENHAM, John A. — Installation Engineer — Reports to C. J. Cardea for analysis of fire control systems to determine maintenance and installation requirements.

PESCHKE, Walter — Associate Engineer — University of California, B.S., Electronic Engineering — Reports to R. L. McIntyre for circuit design and to develop digital systems.

RICE, Lauren A. — Associate Mathematician — Stanford University, B.S., Statistics — Reports to H. C. Applegate for Mathematical analysis.

RICH, Jack V. — Engineer — Aeronautical University, B.S., Aeronautical Engineering — Reports to M. McDermott for engineer requirements for environmental test.

SAKURAI, Takashi — Engineer — University of California, B.S., Engineering — Reports to R. L. McIntyre for circuit design and development.

SIMON, Ralph — Engineer — Ohio State University, B.S., Electrical Engineering — Reports to A. Leto to provide technical electronic support to Manufacturing.

STETTEN, Keneth J. — Technical Director — Boston University, M.A., Physics — Reports to H. A. Timken, responsible for over-all operations of Washington Engineering Branch, Engineering Dept.

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Operational experience with Mk 51 Analyzer and Mk 130 Computer in the Fire Control System has indicated a need for expanded capability to assist operators in the decision-making processes. Systems Division will perform studies to determine display and control modifications of Analyzer Mk 51 in Fire Control System Mk 113, Mods 2 and 5, as well as Digital Computer Mk 130 memory expansion. They will then report their recommendations as to the optimum approach.

NOL has also released a contract for Ordnance Alterations on the SUBROC program. The \$263,203 of OrdAlts are being procured as a result of fleet recommendations to improve the operational capability of Fire Control System Mk 113, Mods 2 and 5. Systems Division is to design and fabricate eight sets.

A major contract of \$1,270,000 was awarded the Systems Division by the Air Force Systems Command, Electronic Systems Division.

This contract calls for diagnostic maintenance programs and routines for the 473L system in the Pentagon. These routines will permit rapid and efficient trouble-shooting and maintenance of the data processing subsystem by Air Force technicians.

Delivery consists solely of software packages and will be principally an engineering effort. Final demonstration will take place in the Pentagon installation.

An \$850,000 contract was granted the Systems Division by BuWeps, as a supplement to the Mk 48 program. This contract covers the basic publications effort in relation to Operation and Maintenance Pamphlets and other documentation associated with Mk 48 program.

A follow-on contract for an additional 126 Drum Subassemblies has been received by the Systems Division. This is an inter-group order from Kearfott, San Marcos for the drum subassemblies, which are incorporated in the ASN/24 Navigational Computer for use in the Lockheed C-141 Starlifter cargoship.

Librascope's Components Division also received an inter-group order from Kearfott, San Marcos. This contract, amounting to \$1,400,330, is for approximately 3,000 encoders. These encoders will receive navigational data inputs for the ASN/24 Navigational Computer in the Lockheed C-141.

Another contract for the Components Division was for an additional \$70,000 from Westinghouse, Surface Division, Baltimore. The contract calls for delivery of one Model L-424 Memory System, used in the computer system of the Navy Tactical Data System (NTDS). This work could lead to substantial follow-on contracts for up to several hundred of these units.

STOLTZ, John A. — Technical Programmer — Valley College, Mathematics Major — Reports to H. Ford to aid programming requirements for Diagnostic Maintenance Program.

TASCONA, Edward J. — Senior Technical Writer — Reports to K. Luther for publications documentation of fire control projects.

The Systems Division has welcomed back several well respected former employees. Their new assignments are as follows:

CAIRNS, John L. — Senior Engineer — University of California, B.S., Engineering — Reports to W. Jordan, directs activities of Micro-Electronics Packaging Laboratory. **CIMO, Gaetano** — Installation Engineer — Reports to C. J. Cardea for analysis of fire control systems to determine maintenance and installation requirements.

CLONNINGER, William L. — Staff Engineer — University of Southern California, B.S., Mechanical Engineering — Transfer from San Marcos. Reports to L. H. Bentley to perform studies for advanced programs and weapon systems.

ETZLER, Gary — Engineering Writer — El Camino College, A.A., Electronics — Reports to K. Luther as group leader for publications documentation on Mk 48 program. **FLESHER, Thomas J.** — Engineer — Reports to H. Ford for logic analysis on 473-L Maintenance Diagnostics program.

FORD, Harrison — Manager, Programming Section — Bradley, M.S., Mathematics — Reports to J. Deitz to supervise and administrate activities of Engineering Programming.

FURTNEY, Ralph — Senior Engineer — Michigan State University, B.S., Mechanical Engineering — Reports to T. A. Miller to perform error analysis for Mk 48 program. GUY, NORRIS — Senior Engineer — Washington State University, B.S., Electronic Engineering — Reports to R. L. McIntyre for logic fragmentation for diagnostics program and system design for data acquisition systems.

MILLER, Carl A. — Design Specialist — Reports to T. Miller for design of complex electro-mechanical equipment for mass memory files.

OHLSON, Gerald — Senior Engineer — University of Utah, B.S., Electrical Engineering — Transfer from San Marcos. Reports to R. A. Potter for studies on Mk 113 Fire Control System as well as sonar systems and data converters.

REBANE, George — Engineer — Reports to E. T. Pool for system analysis of Mk 48 program.

SAWYER, Robert D. — Engineering Writer — California State College, B.S., Electrical Engineering — Reports to K. Luther for publications documentation on Mk 48 program. **UNO, Michio** — Staff Engineer — University of Southern California, B.A., Mathematics — Reports to H. C. Applegate for Mathematical analysis of Fire Control Systems for Mk 113 program.

The Advanced Technology Center is proud to announce the hiring and assignment of the following personnel:

KOLK, Anthony J. — Staff Engineer — Case Institute of Technology, M.S., Physical Chemistry — Reports to Dr. R. H. Fuller to perform magnetic material studies and development of magnetic memory elements. Is currently task leader for magnetic discs in rotating memory I R + D program.

POSCH, Theodore — Associate Engineer — Reports to Dr. E. R. Lewis to aid in research for simulation studies.

Also active in the stepped-up recruiting area is the Components Division, announcing the placement of the following personnel to their staff:

D'ALESSANDRO, Victor — Engineer — Stevens Institute of Technology — Reports to T. Conant for logic and circuit design for memory systems.

HORWITZ, Victor — Manager, Chemical Lab and Plating — Reports to S. H. Sandlin.

The Air Force Systems Command, Rome Air Development Center let a contract for \$75,293 to Librascope's Advanced Technology Center. This contract calls for a study program to investigate further areas of application for the Associative Parallel Processor and the Associative File Processor.

Application studies for the Associative Parallel Processor will include investigation of reducing complex data into a meaningful form and evaluation of proces-

sor design in the light of other studies.

Associative File Processor application studies will include examination of file processing problems and current information retrieval languages that are user oriented. Investigations will be made into the applications of the Associative File Processor for data base organizations, translation/compiling techniques, and output problems, together with re-evaluation of machine design as the studies progress.