

NEW BLDG. 90 COMPUTER TRIMS RED TAPE

A new General Electric 415 computer began full operation in the Accounting Department's Administrative Data Processing Center in Building 90 last month.

The new computer, formally inaugurated during a coffee-break party hosted by Accounting on October 29, will handle administrative data-processing chores ranging from figuring out paycheck deductions to keeping track of the mileage of Laboratory vehicles.

Purchase of the GE 415 machine is the latest in a series of moves, made over the past few years, aimed at automating and streamlining the thousands of paperwork tasks involved in the smooth running of the Laboratory. Beginning with the formation of the Administrative Data Processing Center about three years ago, these moves have included the planning and design of new record-keeping systems in many departments, the writing of hundreds of programs, and the retraining of personnel to familiarize them with automated systems and techniques. In many cases, the result of these efforts has been the achievement of significant savings in costs and labor.

Staff

Operation of the new computer is under Accounting Department head Jack Long; operations are under Howard Hanamura, administrative data processing supervisor for the department. The computer's support staff consists of seven full-time programmers (under Paul Lynch), ten computer operators, and ten key-punch operators (under Frank

Cory), divided between the regular daytime shift and the 4:30 to 12:30 swing shift.

In terms of memory size, speed, and versatility, the new computer represents a considerable advance over the department's former computer, an IBM 1401 (now retired). The GE 415 has an 8000-word memory, a 6.7-microsecond access time, a 1000-line-a-minute printer, a card reader, and other associated input and output equipment. The machine is particularly well suited to administrative applications, which—in contrast to scientific problems—tend to involve large amounts of input and output and comparatively lesser amounts of straight computational work.

Computer's Chores

About two-thirds of the computer's time will be spent on basic accounting chores for Berkeley and Livermore, including accounts payable, payroll, effort-distribution, stores inventory, and general ledger accounting. The remaining third will be distributed over an astonishing range of administrative and service functions (most of which were done by laborious pencil-and-paper methods until the past year or so). Among the unusual assignments currently on the computer's work sheet:

- For the *Construction and Maintenance Shops*, the computer schedules jobs-in-progress . . . apportions personnel time in terms of deadlines, priorities, and efficient distribution of the work force.
- For the *Director's Office*, it main-

tains similar control over major LRL projects (like Bevatron modifications or the Astron development program) by means of critical-path scheduling (see *MAGNET*, September 1962).

- For the *Personnel Department*, the computer cranks out a variety of useful and up-to-date employee rosters and reports; among them: report # 185, which lists all employees by payroll account number, and report #186, which lists all employees alphabetically.

- For the *Plant Services Department*, the computer maintains a record of the mileage and usage patterns of all Laboratory vehicles, calls attention to vehicles due for servicing. For this department the 415 also maintains, updates, and prints the Laboratory telephone directory.

- For the *Purchasing Department*, it prepares statistical reports on the performance of products of vendors, helps to keep price lists and other purchasing information accurate and up-to-date.

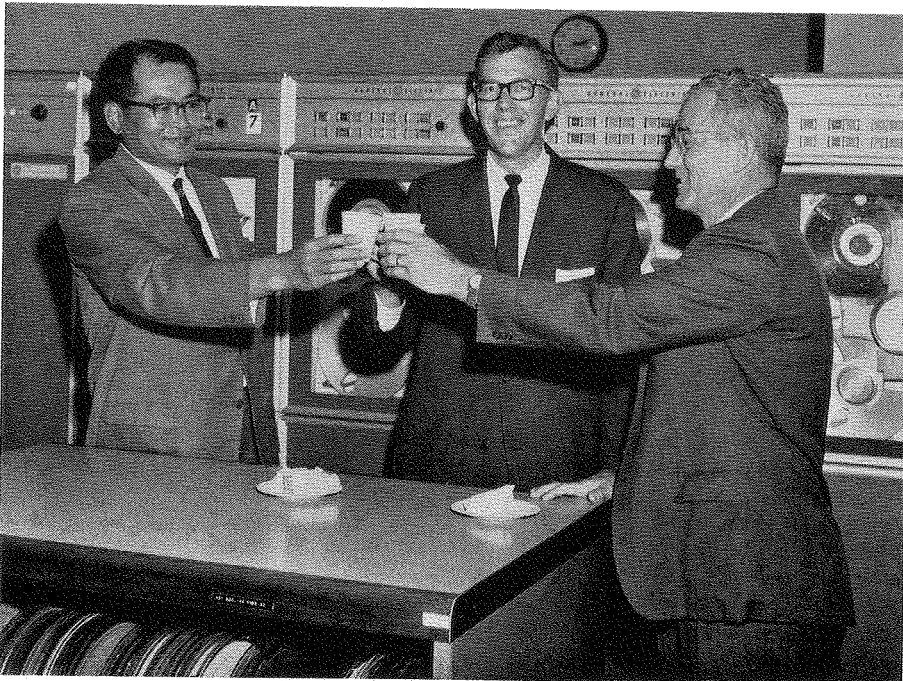
- For the *Salary and Wage Department*, the computer keeps track of data on salary range, increases, and other adjustments for each employee . . . permits easy retrieval of data for the periodic salary surveys made by the Laboratory in cooperation with other government agencies.

- For the *Stores Department*, it maintains and prints the general Stores Catalog, listing and describing each of the thousands of individual items available through that department.

- For the *Technical Information Department*, the computer is being used in an experimental program designed to improve information-retrieval from technical reports and journals by means of descriptive "key words" in the title or text.

- For the *Plant Engineering Department* (in cooperation with the *Budget Office*), the computer is currently running a "space survey" of the entire Berkeley site, analyzing each building and room in terms of available floor-space-per-employee and simulating space-usage patterns of proposed new buildings.

With the conversion to the new computer, each of the programs described above (plus many others, to a total of about 275) have had to be redesigned and rewritten in the MAP (Macro-Assembly Program) language, the programming language used by the GE 415. This systems-redesign effort has been under way for more than a year, and is now nearing completion. In the meanwhile, programs still unconverted are being run on the 415 by means of a "1401 simulation" mode of operation.



COFFEE-BREAK PARTY, held in Accounting Department offices, officially welcomed Berkeley's new administrative data-processing computer. Raising their punch glasses in a salute, above, are (l. to r.) Howard Hanamura, Jack Long, and Dick Connell.