

## Tough math problems made easier by analog computer

Forget about those slide-rules—log tables are definitely passé—an analog computer, which solves some complex mathematical problems fifty times faster than you can with paper and pencil, has been acquired by the Armour Research Foundation.

The machine, housed in a metal cabinet about six feet high, is covered with dials, switches, blinking lights, and is a whiz at equations. It will be used to turn out quick answers to mathematical problems whose solutions via the paper and pencil method have always been time consuming or even impossible.

The analog computer solves, electronically, "equations expressing the dynamics of a system, and any linear equation with constant coefficients."

Its ability to save time and cut out some of the "drudgery" in mathematics are the two chief advantages of the computer, according to Charles D. Morrill, who briefed ARF people on its use. Moral, and electrical engineer with Goodyear Aircraft corporation, which makes the apparatus, is in charge of the company's program of developing computing devices.

Compared to manual computations, the machine is five times as fast when it is digesting only one solution; it is 25 or more times as fast when a number of solutions are wanted.

The ARF computer is one of eight such products in existence and is known as "Model L-2." It was developed by Goodyear Aircraft under contract with the Air Material Command of the Air Force, and up to now has been used principally in aerodynamics problems.

The computer can tell the effect on an aircraft of factors such as sudden gusts of wind, movement of its control surfaces, and change in pitch of the propeller. However, the computer can be used in many other problems, such as those arising in vibration analysis, industrial automatic control systems, analysis of electrical circuits, turbines and internal combustion engines, mechanical structures, and in other dynamic systems.

Problems are "fed" to the computer when the operator interconnects resistors, condensers amplifiers, limiters, potentiometers, switches, and source voltages, according to the equations being

studied. Solutions are given in the form of voltages which describe the magnitude of variables as functions of time. The answers are given by the computer as lines drawn on a moving graph paper.

Morrill's answer to an inevitable question, "Does the computer think?" Is a flat "no." However, he admits that it is an extremely complex apparatus.

## Research grant awarded Durelli

A \$2,500 extension on a previous research grant was made to Dr. August J. Durelli for a study of brittle material in stress analysis by the Research corporation, New York.

Dr. Durelli, lecturer at Illinois Tech and research engineer in applied mechanics at Armour Research Foundation, will continue his study of stress analysis by use of brittle material.

In this method an exact replica is made, usually in plaster, and pressure is applied to determine the degree of stress the structure is able to withstand, and to locate its weakest points. It is based on the characteristic of the material to crack visibly upon reaching pre-determined strain values.

## FPE's to hear talk on CO.

H. V. Williamson, director of research of the Cardox corporation, will speak to the Fire Protection Engineering society on "The Use and Storage of Low Pressure Carbon Dioxide." A film and slides will accompany this discussion, latest in a current FPES series of lectures and films.

The talk will be given Monday at 1 p.m. in 115CB. A discussion dealing with the FPE exhibit for Junior Week will follow.

## Alumni day to mark dedication of new chimes

Gunsaulus hall, apartment building for Tech personnel, and the recently installed carillon in the North Union will be dedicated in two separate ceremonies on campus Friday. A dedication luncheon for the carillon at 12:30 will be followed by a chime concert from 1:30 until 2 p.m. Speakers at the luncheon will be C. Donald Dallas, chairman of the board, Revere Copper and Brass, and trustee of Illinois Tech; Henry T. Heald, president of Illinois Tech; and Harold Munday, trustee and president of the Alumni association. The chimes were the gift of Dallas in memory of his former classmate and fellow alumnus, Conrad Seipp.

With the ceremonies to be held on the front steps of the building, Gunsaulus hall will be dedicated at 3 p.m. A reception will follow talks by President Heald, Leonard Dale, a resident of the hall, and, if he is able to be there, Mayor Kennelly. Open house with guided tours will be held until 5:30.

In the plans for the reclamation of the near south side, Gunsaulus hall is the first privately-financed large-size project to be completed. The public is invited to attend the Gunsaulus dedication ceremonies and reception. Attendance at the luncheon is by invitation only.

## Minatures featured at art exhibit

The last in Illinois Tech's six art exhibits will feature the \$200,000 miniature collection recently presented to the college by Miss Magda Heuermann, 91-year-old Chicago artist. The exhibit will be held in the library starting today and lasting through May 13.

Included in the 80 works is a famous painting of Martin Luther by an unknown artist and one of Mary Magdalene believed to be by Leonardo Da Vinci. Fifty of the paintings were done by Miss Heuermann.

Miss Heuermann came to Chicago as a child in the party with Carl Schurz.

## ARE YOU A 'LOST GREEK'?

A "Lost Greek" is a social fraternity brother whose fraternity is not active on this campus. See the story on page 1.

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