[Los Angeles Times, August 18, 1950]

New Robot Brain Unveiled at UCLA

Mechanical Genius Promises to Be Valuable Secret Weapon

BY WILLLAM S. BARTON

A new mechanical brain which promises to be as valuable as any secret weapon in war was unveiled yesterday at the National Bureau of Standards Institute for Numerical Analysis on the UCLA campus.

The robot genius, SWAC, is an electronic calculator-capable of solving l50 simultaneous algebraic equations, involving 4,000,-000 arithmetic operations, in four hours of computing time, It also can be used to do literal translations from one language into another.

Needed in Last War

If SWAC (National Bureau of Standards Western Automatic Computer) had been perfected during World War II, artillery rockets could have been used with even greater effect. It took hundreds of girls a year and a half to compile rocket firing tables. SWAC could have done the job in a month. Even the U.S. Navy would have been more efficiently serviced had the calculator been in existence in 1941-1945. More than two years was required to calculate fuel requirements of ships so that the right amount of fuel could be rushed to each type of ship,

Innumerable Uses

The machine could have made these calculations in less than a quarter of the time. It is designed to solve innumerable mathematical problems involved in the design of new airplanes, ships and their predicted performances.

No Einstein can compete with SWAC in solving equations relating to the explosion of atomic bombs and computing trajectories of guided missiles. Dr. Harry D. Huskey, Bureau of Standards mathematician, is

[missing lines]

Dr. Condon There

Nationally known military and civilian authorities attended SWAC's formal christening exercises. They included: Dr. E. U. Condon, director of the Bureau of Standards; Col. F. J. Seiler, chief of the Office of Air Research of the Air Force, and Dr. J. H. Curtiss, chief of the -bureau's mathematics laboratories.

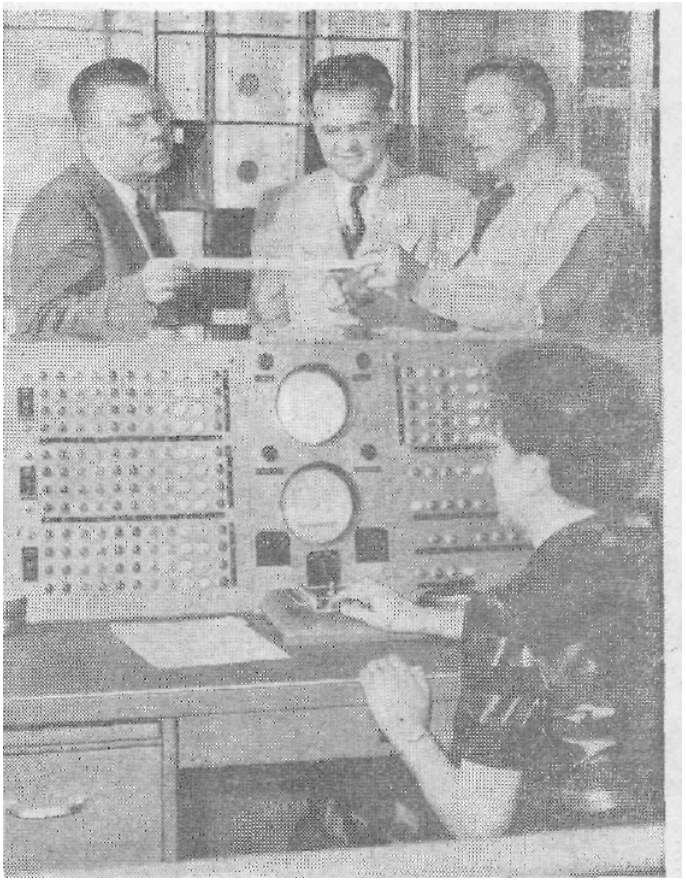
Also present was Dr. Roy V. Peel, director of the Bureau of The Census. He said such devices will be of major importance in compiling the great mass of statistics needed by American businessmen in planning their operations.

The new calculator is the fastest of its type in the world. In the time it takes to say the word, "multiplication," it. can perform 2604 multiplications or 15,625 additions. This means that many heretofore unsolvable (because of the impossible amounts of work involved) problems of science are now subject to solution.

How It Operates

A bank of 37 cathode ray tubes (the same tube used in television sets) make up the machine's

Turn to Page 2, Column 4



DOES IT THINK? — Examining new mechanical brain, which solves 150 simultaneous algebraic equations involving 4,000,000 arithmetic operations in four hours of com puting time, are from left. Dr. E. U. Condon, Dr. H. D. Huskey, Col, F. J. Seiler and Mrs. Roselyn S. Lipkis.

Continued from First Page
memory. Each tube stores up 256 digits on its face, in a pattern of dots and dashes. The dots represent "0" while the dashes represent "1." All decimal numbers and instructions to the machine are fed into it in a code which utilizes only the digits "0" and "1."

SWAC can perform many logical substitution activities. For example, the robot can be used to translate a foreign language into English and vice versa. To what extent, the machine can be spared for such work is undecided.

Not Very Elegant

The translations, it is admitted, would not be very elegant for the present. They would be rough and not much better than a boy could do in a language examination with the aid of a "pony."

Does SWAC really think? The answer depends upon your idea of what thinking consists of. Robots like SWAC are really slaves in that they carry out instructions to the letter. They do no more and no less. Take for instance a predication theory in which one is trying to predict for an antiaircraft gun the position of a plane at a certain instant in the future.

SWAC Does Think

This activity involves noting where the airplane is now, seeing where it was a moment ago and looking into the future in order to predict that the plane will be at a certain point at a stated future time. As a result of these calculations, an antiaircraft shell is fired at that particular point in the sky.

You might compare this to the process of thinking about something and coming out with a new thought on what will be the situation at a certain time in the future.

To this extent, at least, SWAC does think!