PHYSICS

"Brain" Plays Music

Electronic computer at National Bureau of Standards, as result of spare-time contest by two mathematicians, can now be forced to play music as a novelty on occasion.

➤ ELECTRONIC STRAINS of music—"Dixie," "America" and "K-K-K-Katy"—can be heard issuing from the National Bureau of Standards' electronic "brain" computer in Washington.

This unusual concert can occur during early morning warming-up, before the big brain starts its complicated mathematical operations. The musical sounds are produced on occasion as a novel way to give the machine its morning exercise while the tubes get set to do their work.

The musical sounds are caught by audio detectors and amplifiers when artificial delays in the computation process are introduced into the performance of the machine. Usually the machine works so fast that the electrical tone of the tubes is too high to be heard unless detected and amplified.

The speed of the machine, which is known as SEAC, has to be changed to make it musical.

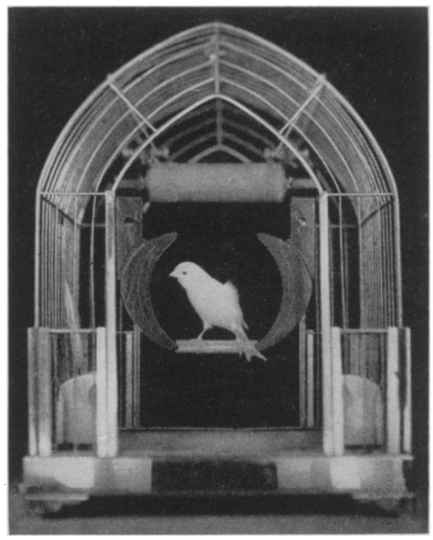
A spare-time contest between two of the machine's masters resulted in the perfection of the musical performances. Frank Stockmal won first musical honors by performing "Dixie," even though he comes from New Haven, Conn. Then he programmed "K-K-K-Katy" and, later, "America."

The composition and first performance of "America" resulted from a check by SCIENCE SERVICE on a rumor that the computer was warmed up every morning by playing the "Star Spangled Banner." Some notes of this patriotic song would be rather difficult to produce on the computer, Mr. Stockmal said.

Since the machine has a range of only about two octaves, its possible repertoire is quite limited. Other songs known to have been programmed on other computers are "God Save the King" in England and "Auld Lang Syne" in Philadelphia.

By giving the machine instructions that force it to delay a certain time, say a five-hundredth of a second, between each of its computations on a problem, a note that corresponds to 500 cycles per second, or about C above middle C on a piano keyboard, can be forced from the computer. Different notes can be played by varying the time delay introduced in working out the problem.

Science News Letter, December 5, 1953



MAGNETISM TEST — To determine whether canaries and other songbirds were sensitive to magnetic forces, they have been placed in cages with powerful magnets. No reaction was noticeable.

INVENTION

Jet Plane Launcher

➤ A BRITISH inventor has created a ground-based launching device for hurling jet airplanes into the air.

Barnes Neville Wallis of Weybridge, Eng., states his launcher eliminates the need for heavy assisted take-off equipment on the plane. Furthermore, should the plane's engine be defective "in any way" upon take-off, the craft can land within the limits of the airport.

The new device also promises to permit airports to devote one runway exclusively to taking-off planes, keeping one strip always open to landing planes. This, Mr. Wallis believes, will double the traffic capacity of many existing airports.

The launcher is a four-wheeled frame powered on rails by four jets. The airplane is mounted on a lever apparatus which holds the plane parallel to the earth and faces it into the wind.

As the plane's wings begin biting the air, the lifting force is transmitted to the lever. When the force is sustained for a given length of time, to assure that the plane will remain airborne, the plane is unlocked from the carriage and it roars into the sky under its own power.

Mr. Wallis' invention was granted patent No. 2,659,553 by the U. S. Patent Office. The inventor assigned his patent to Vickers-Armstrongs Lt., of London.

Science News Letter, December 5, 1953

ELECTRONICS

Electronic "Brain" For Missile Control

➤ TWO NEW electronic "brains," lightweight enough for air-borne control of guided missiles, were revealed by the Jacobs Instrument Company, Bethesda, Md.

The small but high speed computers, one of which has been built, the other being in design stage, are low cost and comparatively easy to produce. They can be used not only for computation but also as robot controllers.

Nine devices feed information concerning the apparatus to be controlled into the computer, and after complicated mathematical computation, the computer controls three external pieces of equipment. The actual use to which this computer, known as JAINCOMP-C, will be put is a "military secret."

Science News Letter, December 5, 1953

ORNITHOLOGY

Canaries Scorn Magnets Testing "Sixth" Sense

➤ CANARIES, DOVES and parakeets sing and caper, scorning powerful magnets placed in their cages to test a "sixth" sense, the Rev. John P. Delaney, S.J., professor of physics, Loyola College, Baltimore, Md., has reported.

Scientists at one time thought birds navigated during their migrations by using a magnetic sense. The homing instinct of pigeons was also believed to be connected with magnetism.

Evidence for this theory after long research is neither consistent nor conclusive, Father Delaney said. His tests with song birds were made by placing magnets in bird cages. The birds continued their play without any reaction traceable to the magnets.

Science News Letter, December 5, 1953

MEDICINE

Antihistamine Helps Penicillin in Heart Case

➤ A 49-YEAR-OLD woman with the heart disease, subacute bacterial endocarditis, was able to take enough penicillin to be "discharged as cured" when her doctor used the new trick of giving an antihistamine with the penicillin.

The case is reported by Dr. C. A. Beck of Michael Reese Hospital, Chicago, in the *Journal of the American Medical Association* (Nov. 28).

Science News Letter, December 5, 1953