'Electronic Brain' Aids Office Operations

New IBM 650 Computer Is Installed In Data Processing Dept.

As a major step forward in providing data for more effective management of the Company and improving office procedures and paper work handling to keep pace with other advancements, a new electronic computer has been installed at the Fieldcrest Mills general office on Stadium Drive, Spray.

The IBM 650 Magnetic Drum Data Processing Machine calculates and makes decisions at very high speed in accordance with instructions stored in its "memory."

The new 650 unit, popularly called an "electronic brain," is among the most modern and efficient computing machines. Added to the existing processing equipment which has been kept up to date through the years, the "650" computer provides even greater speed in processing data.

It is used for payrolls, sales accounting, analysis of orders and shipments, production and inventory reports, personnel data and other information needed to operate the Company. Additional applications will be placed on the system as programs are developed.

1800 Individual Instructions

Before its installation, personnel of the Data Processing Department spent several months preparing programs for the 650 Computer. These consisted of sets of instructions which "tell" the machine how to handle a particular job. One program may contain as many as 1800 individual instructions.

For ease of installation and maintenance the system is housed in three units: (1) the Read-Punch unit, (2) the Power Unit, and (3) the Console Unit. The Read-Punch unit accepts problems and delivers answers in the form of punched cards. Reports are printed by feeding the output cards to an accounting machine which writes up to 9,000 lines per hour.

The Power Unit supplies power to the other units and translates punched cards into computer language.

The heart of the 650 computer is the Console Unit with the Control panel and display lights. Inside this unit is the magnetic drum, about 4 inches in diameter and 16 inches long, which stores up to 20,000 digits of information on its surface.

The drum rotates at 12,500 revolutions per minute, enabling access to any stored data in 2.4 milliseconds. The calculating circuit can perform as many as 78,000 additions and subtractions in a minute, and when so instructed, it will make logical decisions at the rate of 2,300 each second or 138,000 per minute.

The computer system weighs over 3 tons and contains 5,000 vacuum tubes, 2,000 relays, and several miles of wire. This equipment puts out enough heat for a five room house.

Only a little more than half of the 650's capacity will be needed for work now performed in the Data Processing Department. Efficient use of the remaining capacity will require many hours of study and numerous decisions as to the types of information needed to improve the Company's operations and the most economical means of feeding data into the "650" to produce that information.

In the words of comptroller E. L. Brown, "This opportunity is the Comptroller's Department's greatest challenge for 1958 and the future."

C. F. Kelly, head of Data Processing, puts "650" through its paces for E. L. Brown, comptroller, R. R. Roberts, treasurer; Dennis Cooke, IBM field representative; and R. H. Hair, manager, office methods and procedures.

Close-up view of the console is shown as Russell Cherry, programmer in the Data Processing Department, starts test operations on the new computer.