[From: *The Financial Times* (London), 1 March 1954]

THE ELECTRONIC TRANSLATOR

By Our Scientific Correspondent

Few British or American scientists would be able to make much of "VYELYICHYINA UGLA OPRYEDYELYAYETSA OTNOSHYENYIYEM DLYINI DUGI K RADYIUSU." Yet the other day these Russian words were fed into a computor developed by the International Business Machine Corporation which six seconds later printed put the answer—" Magnitude of angle is determined by length of arc to radius."

This machine, the IBM 701, is the first electronic translator. Although it is an experimental unit with a vocabulary of only 250 words, it functions remarkably efficiently and it is hoped that by 1958 the multilingual automatic translator for business men and scientists will really have arrived.

One great advantage of IBM 701 is the fact that the operator of the machine need be no linguist. She only has to type out the letters on to a machine like a typewriter which translates them into holes on the punch cards which are fed into the machine.

* * *

THE really remarkable feature of the translator is the simplicity of its rules of syntax and grammar. In translating some 60 sentences of Russian it operated with only six working rules.

These roles were tagged on to each one of the 250 words stored in the magnetic drum " memory" of the brain. They govern such factors as the choice of meanings and the insertion or omission of words in the translation where this is required in order to make it more grammatical. The transposition of words which is frequently required in translating one language into another is also controlled by the combination of tags attached to each word in the vocabulary.

The actual instructions for undertaking the operations involved in translation are stored as dots of light on a series of cathode tubes.

* * *

The fundamental basis of the brain depends on the fact that single words can be used to give crude translations even when tenses and other grammatical refinements are ignored, and a new analysis of language has been made which is derived from this starting point

The original work on the concept of an electronic translator (reported in THE FINANCIAL TIMES test July) was undertaken by Dr. James W.Perry, of the Massachusetts Institute of Technology.

The later development work was done by Leon Dostert, a language scholar of Georgetown, in collaboration with the International Business Machine Corporation.