WE Magazine
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C A

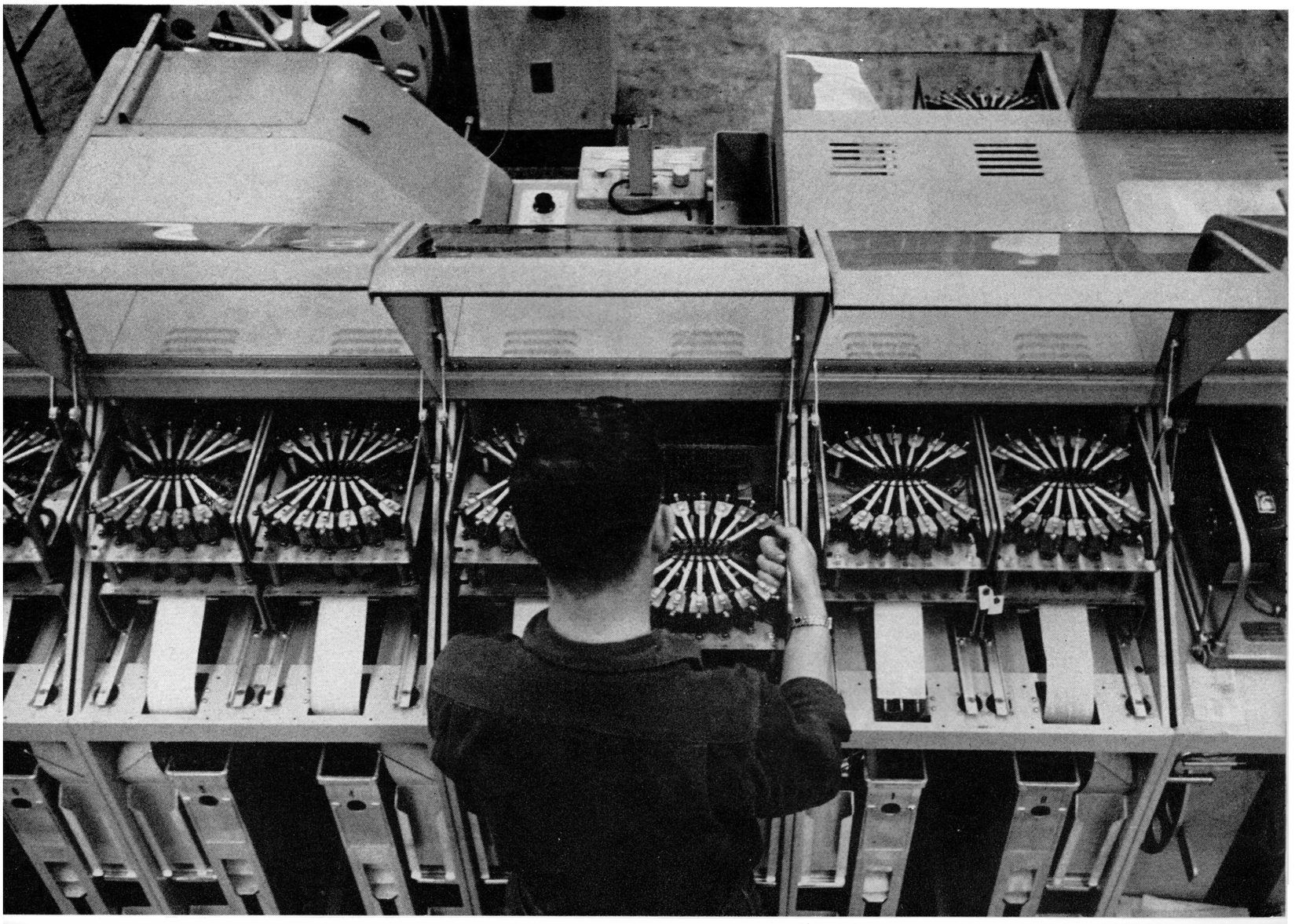
It means Centralized Automatic Message Accounting—a new

INSTALLERS in the Washington, D. C. area have completed a major assignment. They have put in the first installation of a new system for keeping track of subscribers' calls. This system—known as centralized automatic message accounting (CAMA)—makes possible wider range dialing by centralizing the accounting of several offices. CAMA along with No. 4A toll crossbar will thus eventually make practical nationwide toll dialing for subscribers.

One major problem in toll dialing has always been how to keep track of the calls made. The old system required operators to make the necessary notations on toll tickets. In 1941, automatic charging of a sort was installed in No. 1 step-by-step offices by means of toll slips printed automatically.

The printers in this installation were permanently connected to the associated trunk circuits and were thus tied up for the duration of each call they were tabulating, so that a great deal of equipment was required to handle a relatively small number of calls. And both the manual and this early ticket tabulator required lots of processing at the accounting center.

In the same year, 1941, Bell Laboratories introduced a new method of recording subscribers' toll calls known as Automatic Message Accounting. A trial installation in a No. 1 crossbar office was success-



M A

way of keeping a centralized record of calls

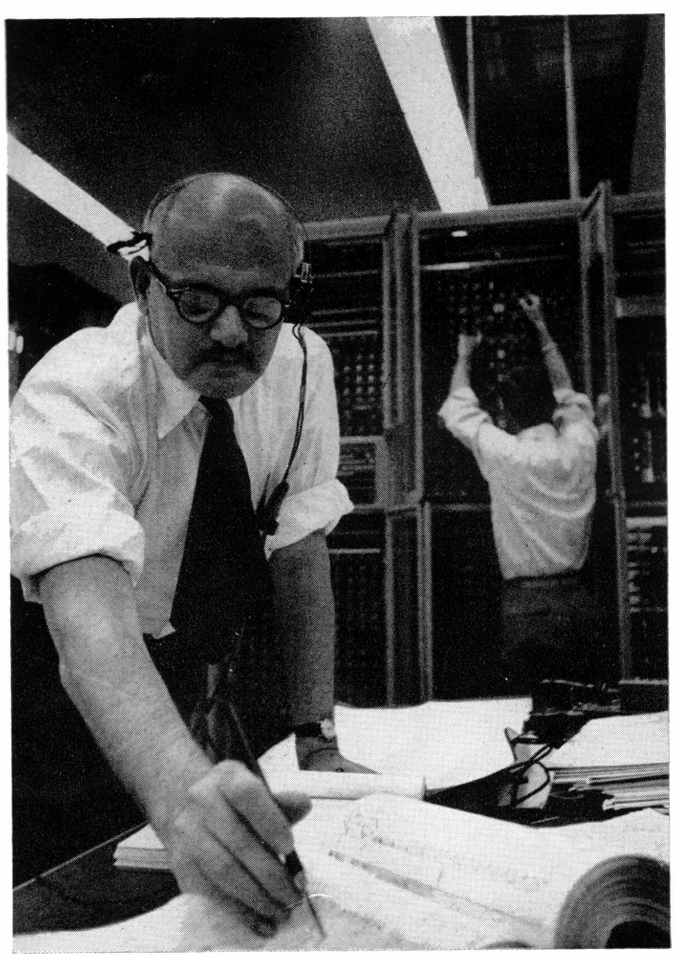
ful, but the war intervened and the first installation of AMA was made afterward at Media, Pa. At that time it was called "the greatest advance in telephony since the introduction of the dial." It is installed in many sections of the country at the present time.

AMA has many talents. It can keep track of thousands of dial calls—record who made them, what numbers were called, how long the conversations were, and then add up and print this information — all automatically.

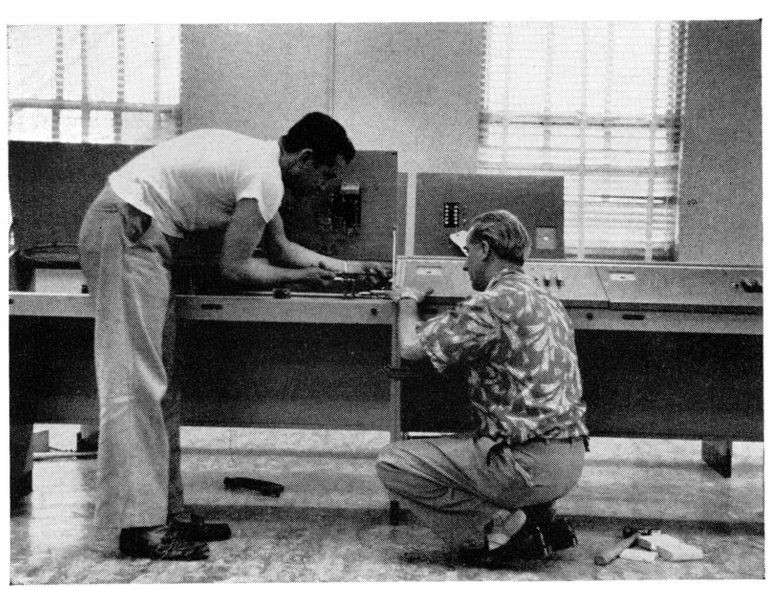
Briefly, the electrical brain of the central office switching system recognizes, on each call, whether the subscriber making it has flat-rate or message-rate service, or, whether the call is to be billed as a toll call. Thus, it knows whether any record need be made and, if so, in what detail.

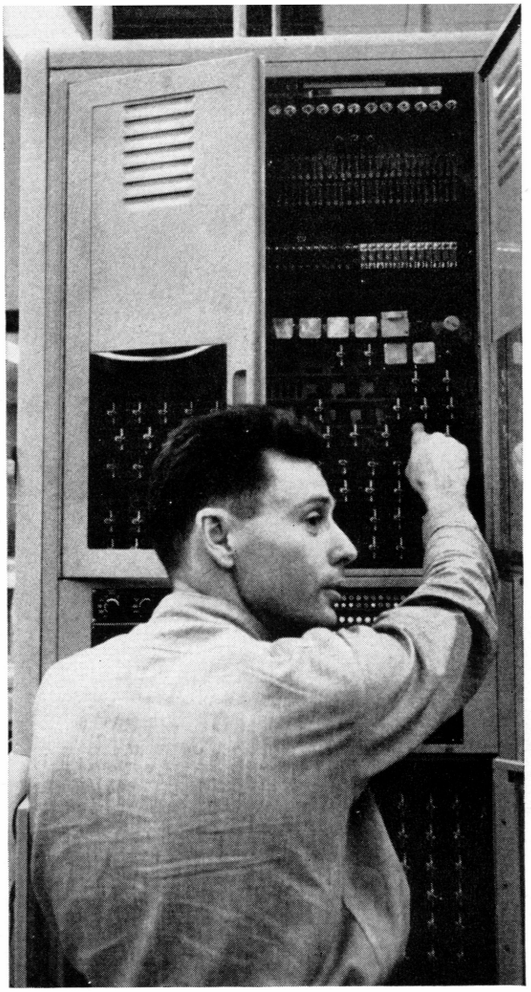
All information is first translated into numerals, which are in turn represented by tiny holes punched by the central office recorder in varying patterns on a three-inch-wide paper tape. In this way a record is kept of the calling and the called numbers, and the month, day and exact time at which the conversation begins and ends.

The tapes are cut daily and then taken to the AMA accounting center, where they are fed into five successive machines. The "assembler" locates and



Pictures taken last summer illustrate installation of accounting center where tape of CAMA, the nation's first centralized automatic message accounting system, is processed. Wider range dialing and faster service that CAMA permits have been in effect since early November in Washington, D. C. On page opposite, W.E.'s W. H. Kilmer works on AMA computer unit. At left, Eric Parsons refers to circuit drawings as D. M. Zembower and John Behr (below) assemble CAMA positions.





Above W.E installer L. R. Bayse tests circuits associated with the AMA computer in new Washington installation of centralized automatic message accounting. Installers have long since left. Their handiwork remains as shown in overall view (below) of the equipment room containing the new CAMA equipment.

groups together the various items of information on any single call. The "computer" rapidly goes through the mathematical process of subtraction of elapsed time and converts the elapsed time to chargeable units. The "sorter" sorts out all the thousands of calls according to the directory number of the subscribers who made them. And the "summarizer" totals the number of message units for each subscriber. Finally, the "printer" prints the detailed tickets of the message unit calls for use in making out the bills.

All No. 1 and all No. 5 crossbar offices have been engineered for easy conversion to AMA since 1947. Panel, step-by-step and No. 1 crossbar offices, established before 1947, however, are not easily converted to AMA, and this is where CAMA comes in. CAMA, by centralizing the AMA or automatic message accounting of several offices, makes it practical to introduce short-haul toll dialing, and thus broaden the area in which calls may be dialed.

That's the way it is in the nation's capital right now. "Wider range dialing" has been in effect in Washington since November 8th, permitting direct dialing through most of the city's metropolitan area and to such outlying centers as Annapolis and Baltimore. Installers finished the Washington job early this fall. Now they're at work in Detroit, pointing toward completion of the nation's second centralized automatic message accounting installation.