# Space Age Typesetting

Observer Newspapers' new method of setting type involves use of a computer and special phototypesetting machines. It is sometimes called "cold type," to indicate that the type is set by a photographic process and to distinguish it from "hot type" composition, in which type is produced by a linotype machine pouring hot molten type metal over molds to form a line of type.

Cold type production of an advertisement, for example, starts with processing (Illustration 1) the insertion orders. This step determines the date of production, assigns priorities for setting type in the shop, and notes if any special items such as pictures or finished drawings are needed for the ad.

The ad and its insertion order are then sent to a mark-up station (Illustration 2), where the layout and copy for the ad are carefully examined. Type faces are selected to best accomplish the objective of the advertisement, and the proper codes are marked on the layout showing the kind and size of type to be used, the space to run between the lines, and the placement of blocks of type within the ad.

THE MARKED UP ad next goes to a puncher (Illustrations 3 and 4), where a keyboard much like a typewriter is used to type the advertisement, along with a series of instruction codes indicating type size and style and line length. The product of this keyboard is a perforated (punched) paper tape, with the perforations indicating the words and instruction codes of the ad.

This tape is then fed into a "reader" that translates the perforations into electrical impulses that are transmitted to the computer.

In the computer (Illustration 5) are stored programmed instructions for typesetting. These instructions, together with the words and instruction codes transmitted by the paper tape, enable the computer to count width of letters, space words within a line, compute the proper line length, and hyphenate words at the end of a line to make the line come out with even margins on the left and right.

These operations are completed within the computer in fractions of a second, producing a new paper tape through a tape punch that contains the original copy of the ad together with all the necessary instructions for the phototypesetting machines to set the advertisement properly.
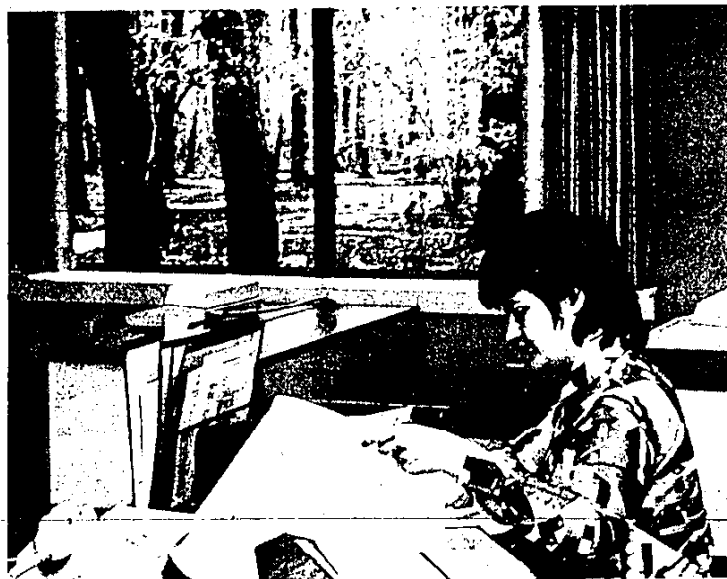


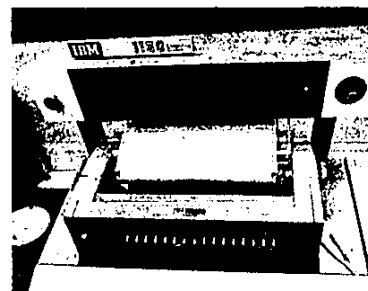1    Carol Wilson processes advertisement insertion orders.
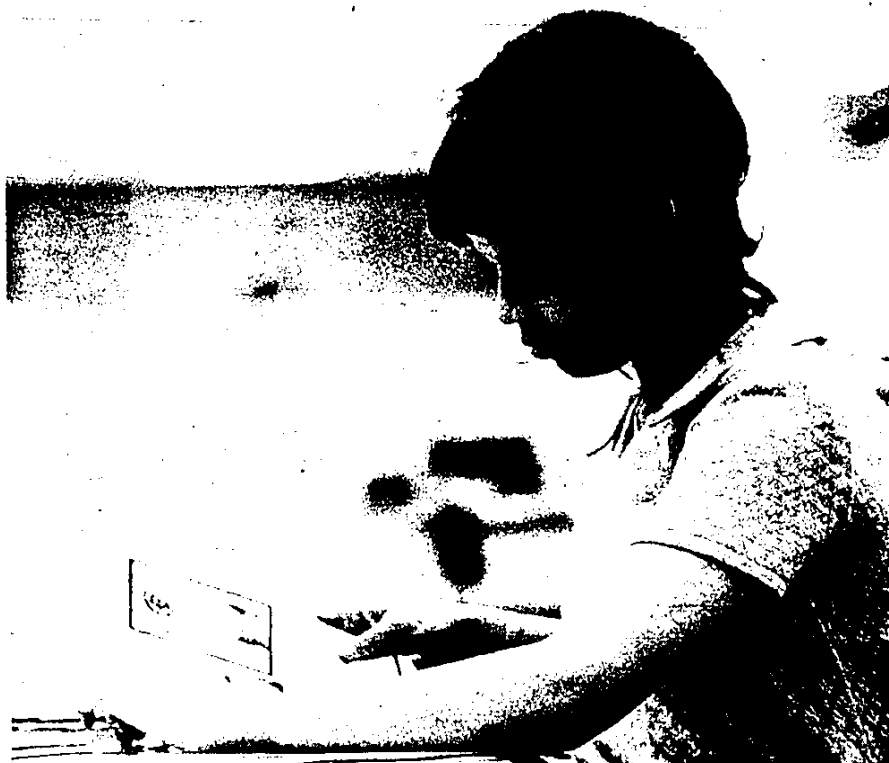


2   Mark up is crucial to a successful ad. Here Lynne Mason applies her skill.



3   Keyboards, much like typewriters, are used to punch paper tape with copy and instruction codes.



4   Mrs. Nellie Fillmore, a highly skilled puncher, can set type at around five times faster than the old hot type method.



5   The IBM 1130 computer takes input from punched tape, applies it against its typesetting program stored in memory disks, and generates a new punched tape.