Automated Logic Diagrams (ALD)

Automation of design was initiated because of the large volume of paper work required in the design and manufacturing of new data processing equipment. This program uses an IBM 704 or 705 to provide a fast and accurate method of preparing and up-dating the information necessary for customer engineering, manufacturing, and engineering. Automation of design eliminates the slow and costly manual drafting procedures previously used.

Figure 9 traces the flow of information from the logic designer to the 704 or 705. The logic designer follows definite rules and procedures in laying out the raw logic on special sketch sheets. From these forms, information is coded and punched into IBM cards and then fed into the computer. Design aids, manufacturing data, reference material, and the printed logic pages are the most important outputs of the computer.

ALD Diagram Format

The automated logic diagrams printed out by the 704 or 705 aid in the understanding of the various logic operations, simplify logic tracing and locate the circuit components. Standard blocks and symbols are used to represent specific circuit configurations. Use of the automated logic diagrams allows for standardized logic diagrams between all personnel and all plant locations.

Page Layout

An automated logic diagram consists of page identification, edge information, logic blocks, their connecting lines, and an area for comments at the bottom of the page. Figure 10 shows a typical logic page from the 7070 system.

The original logic page from the computer is 17 inches wide and 22 inches long, having a possible logic block format of five blocks wide and nine blocks long. Logic blocks may occupy any of the 45 possible positions. The actual machine systems diagrams are reduced to a more convenient size, 11 by 17 inches.

Page Identification

As shown in Figure 10, the following information is found at the top of the systems page:

1. *Page Part Number.* Used for ordering a specific page.
2. *Title.* A description of the logic contained on the systems page.
3. *Machine Number.* The number assigned a given frame or machine (e.g., 7601).
4. *Logic Page Number.* A seven-digit number (xx. xx. xx. x) assigned the logic page. For explanation purposes, letters are used to designate each position in the number: AB. CD. EF. G.

Position A: Primary breakdown according to the machine number (e.g., input-output 7603).

Position B: Secondary breakdown according to a feature group such as the arithmetic circuits.

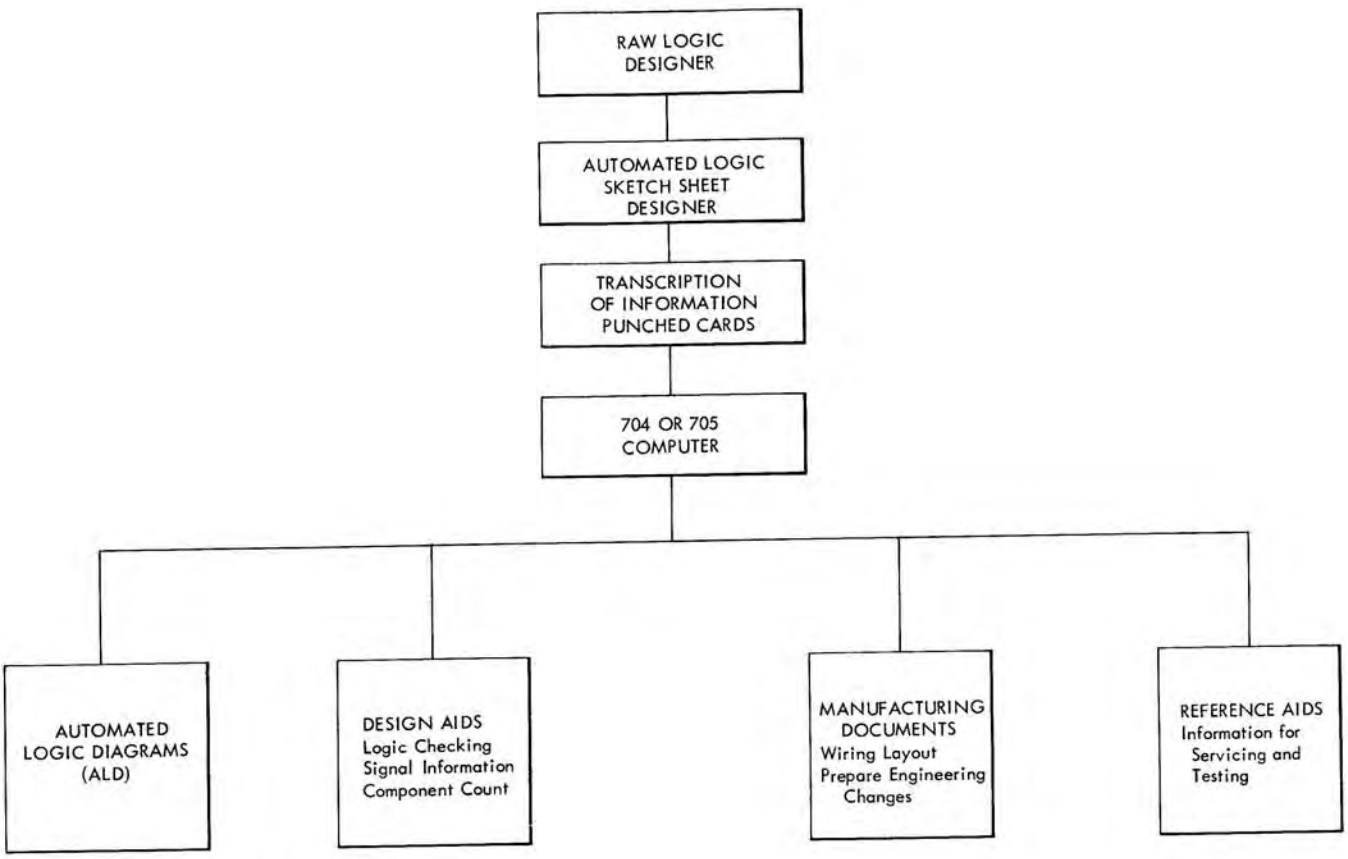

Figure 9. Automation of Design