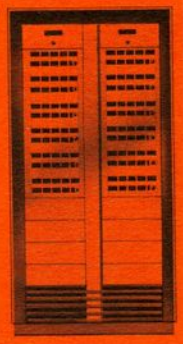
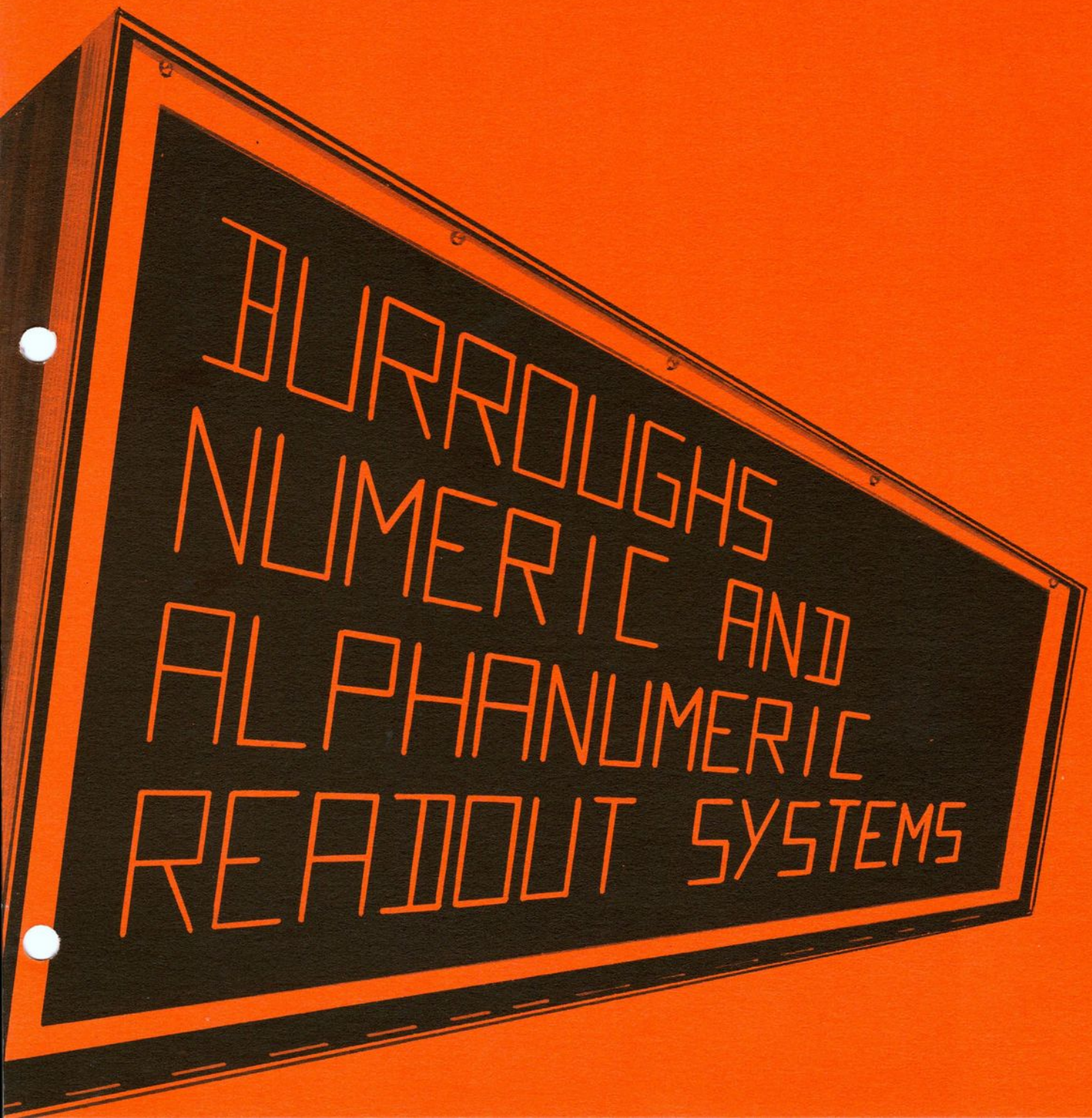
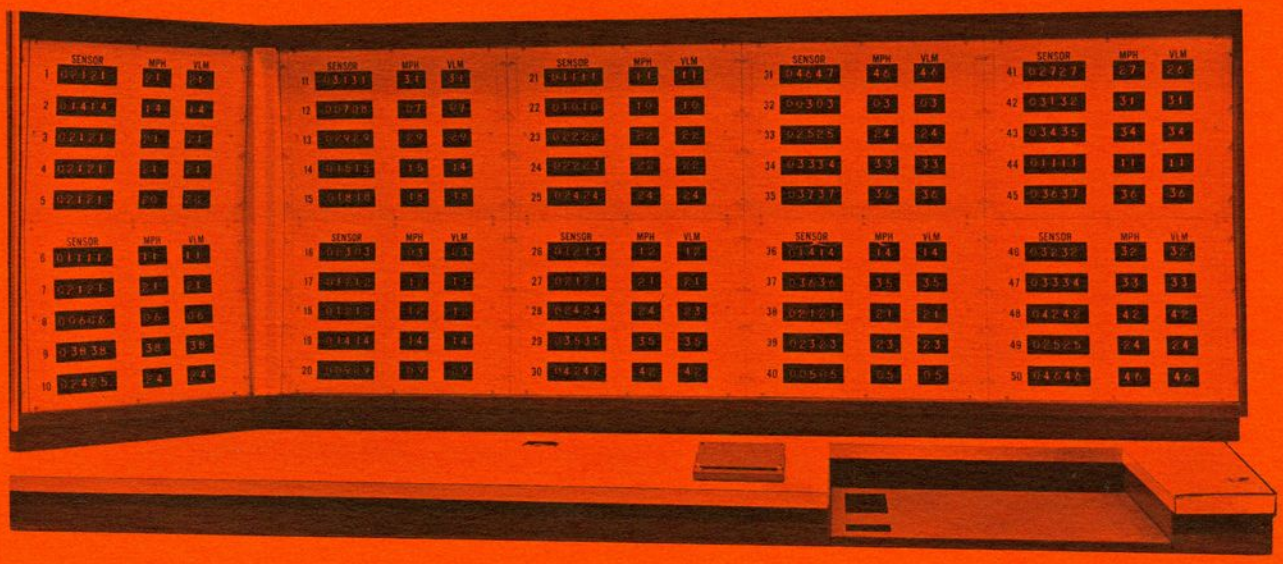
DIGITAL DISPLAY SYSTEMS







Real-time numeric display system for traffic control monitoring.

- **NIXIE® Tube Readout**
- **High Reliability**
- **Building Block Construction**
- **Optimum Aspect Ratio**
- **Standard Modules**
- **Low Cost Per Digit**
- **Best Readability**
- **Front Access**

TYPICAL APPLICATIONS

Burroughs numeric and alphanumeric display systems designed around the NIXIE® tube have the highest reliability and best viewing characteristics of any other type of display system for presentation to large audiences. These systems are adaptable to many kinds of electronic information display requirements such as • Computer Readouts • Schedule Boards • Real Time Displays • Traffic Display Panels • Stock Quotation Systems and • News and Information Displays.

STANDARD MODULES

System economy is enhanced by the use of standard high reliability semiconductor modules. Standard packages include • encoders • decoders • drivers with memory • buffers • timing circuits and • erase/write generators. Interface modules are designed for each application.

SYSTEM FLEXIBILITY

Burroughs display systems have the flexibility to accommodate a wide range of viewing distances (see Table I), total character count and optimum aspect ratio. Both displays for short range viewing in consoles as well as for situation displays for viewing distances up to 100 feet and at wide angles are available. Each character is displayed on a separate tube, thus the optimum character count can easily and economically be achieved. The building block construction feature of the systems allows the selection of the optimum aspect ratio (number of columns to rows). Display systems are available in sizes ranging from a single row of a few characters to several rows of 50 characters or more.

INPUT SPECIFICATIONS

Each system has an internal semiconductor memory having a capacity sufficient to display a full array of characters (letters/numbers 0-9/symbols). The character information can be accepted in the ASCCII or any other code and can accommodate either parallel information, information through a dataphone or 5 or 8 level teletype. The character addressing may be two dimensional random access (Figure - 1 block diagram) or sequentially on a per character basis, or the information can be stored without displaying it until a full line of characters has been entered and then display the full line. Figure 2 depicts a combination of sequentially entering each character in the bottom row and then shifting all rows up to clear the bottom row for the new information. One or more messages can be stored in a secondary memory and these messages selectively accessed and displayed in any part of the display. If necessary, a high speed buffer memory may be included to minimize access time.

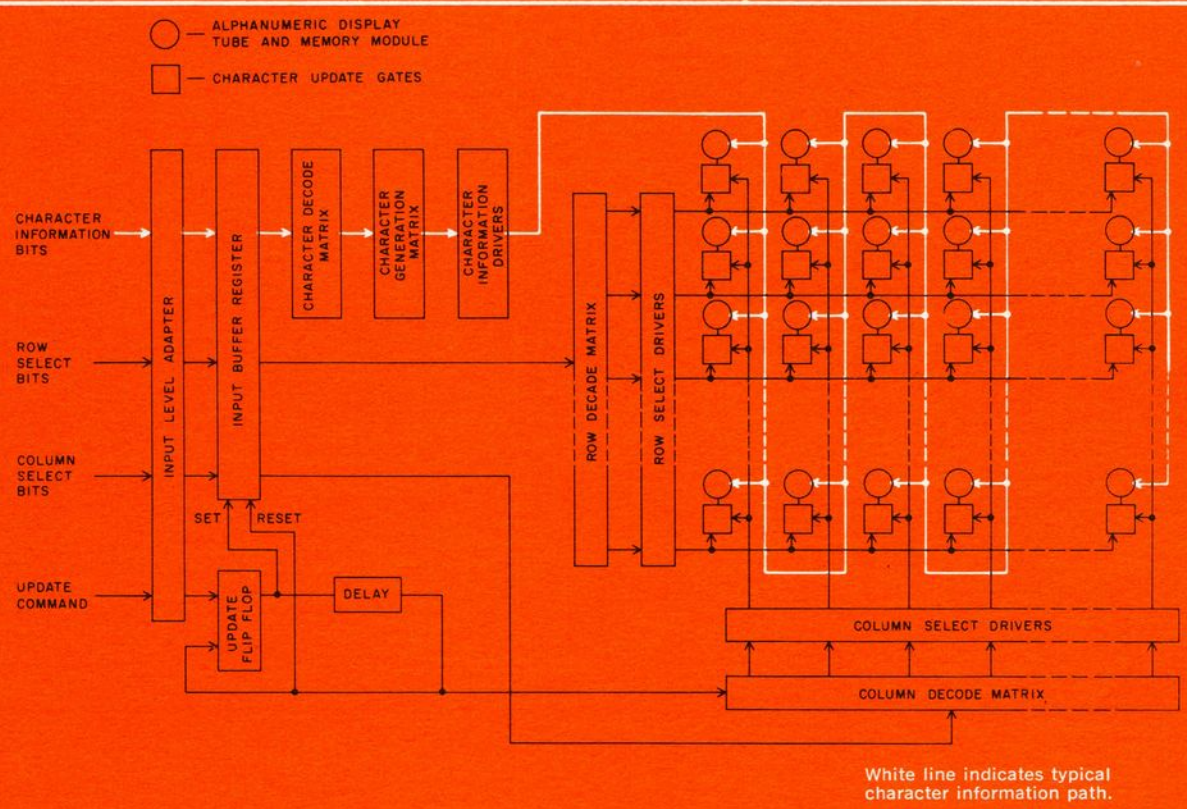
TYPICAL DATA INSERTION FORMATS

1. Random access; X-Y select — Format control is external to the display system.
2. Sequential input modes —
   a. Sequential insertion of characters into a blank display proceeding into the top row from left to right and continuing in the next lower row. When the complete display board is filled or in response to an external command, the information is cleared and the board is ready to accept new information.
   b. The information is entered as in 2a above, but when the board is full, the displayed information in the top row is sequentially cleared and the new information inserted in the cleared tubes; a few blank positions or a complete row may be maintained between the old and new information.
   c. The information is inserted sequentially in the bottom row and when filled, all rows shift up one row.

HUMAN ENGINEERED VIEWING FEATURES

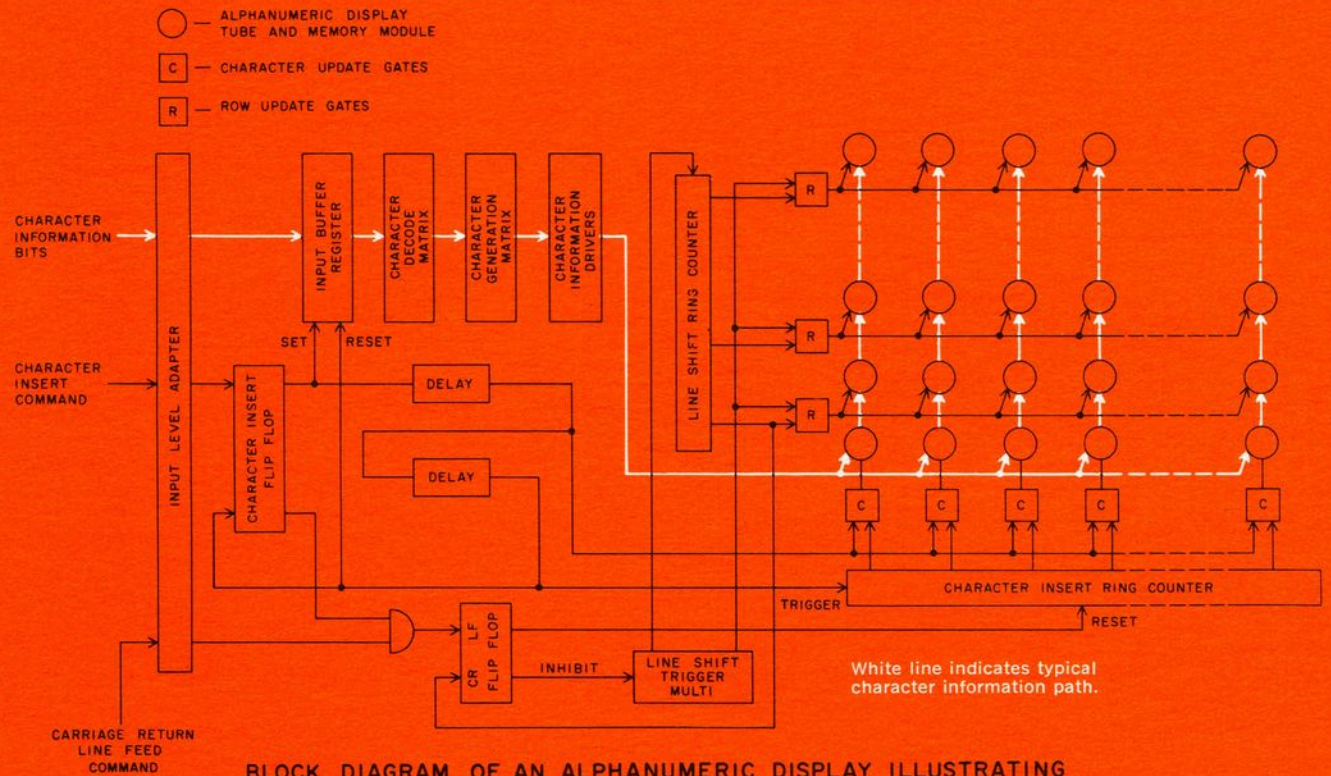
1. The displays can include such features as Polaroid filters which improve the contrast and readability.
2. The light intensity of the readout can be adjusted manually or electronically over a very wide range.
3. Special effects such as selectively fading-in and fading-out in the intensity of sections of the display can be achieved.

Cover photo: Real-time alphanumeric display system from teletype inputs.



BLOCK DIAGRAM OF A TYPICAL RANDOM ACCESS ALPHANUMERIC DISPLAY

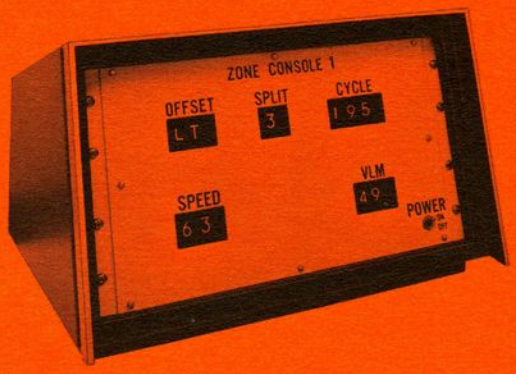
Figure 1



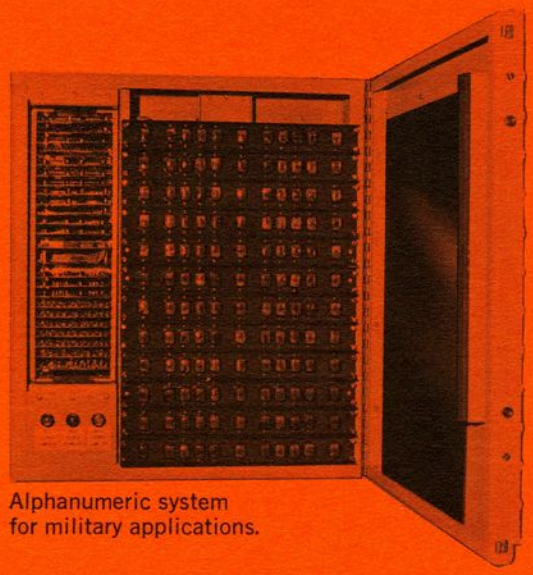
BLOCK DIAGRAM OF AN ALPHANUMERIC DISPLAY ILLUSTRATING THE SEQUENTIAL INSERTION OF CHARACTERS IN BOTTOM ROW AND THE SHIFTING-UP OF ROWS

Figure 2

TYPICAL DISPLAY SYSTEMS



Remote monitoring console
for traffic-control system.



Alphanumeric system
for military applications.

Real-time alphanumeric display system
from typewriter input.

The alphanumeric NIXIE tube has the capability to display all the letters of the alphabet, numerals 0-9 and special characters in a single tube. The numeric NIXIE tube has the capability to display 10 specific digits: numerals 0-9, and letter/number/symbol combinations. From the standpoint of both readability and electrical characteristics, the alpha and numeric NIXIE tubes provide many benefits including:
• all DC operation • Uniform, continuous line characters of equal height • readability in high ambient light — 200 ft. lamberts brightness • long life with no loss of brightness.

Table 1

ALPHANUMERIC NIXIE® TUBE CHARACTERISTICS

TYPE No.	MAX. VIEWING DISTANCE	CHARACTER HEIGHT	MAX. TUBE HEIGHT	MAX. TUBE WIDTH	MAX. TUBE DEPTH
Standard (B-5971)	30′	0.6″	1.02″	0.79″	0.96″
Medium (B-8971)	65′	1.4″	3.37″	1.15″	1.15″
Large (B-7971)	100′	2.5″	4.85″	2.07″	2.07″

NUMERIC TYPE NIXIE® TUBE CHARACTERISTICS

Miniature Rectangular	14′	0.3″	0.63″	0.47″	1.00″
Round			0.65″	0.65″	1.20″
Standard Rectangular	30′	0.6″	1.02″	0.79″	1.12″
Round			1.08″	1.08″	1.38″
Side-view			2.05″	0.75″	0.75″
Super Round	38′	0.8″	1.35″	1.35″	1.52″
Large Round	65′	1.4″	2.07″	2.07″	2.28″
Jumbo Round	100′	2.0″	3.10″	3.10″	2.65″
Side-view			3.93″	2.07″	2.07″

Burroughs Corporation / ELECTRONIC COMPONENTS DIVISION
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