

J E L

PROJECT STRETCH
DELTA COMPUTER MEMO No. 12 REVISED

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Subject: Delta Computer Internal Decimal Code

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The decimal code for internal use in the Delta Computer was derived to provide a straightforward and consistent format which would contribute to the computers versatility.

The decimal code listed in Figure 1 provides a distinct advantage in that the code is ranked according to the accepted IBM collating sequence. The code column representing numeric decimal digits is the highest ranked code when the bits are considered as being pure binary. Only the ten numeric characters representing decimal digits can be assigned to the bit configurations of this column. The individual codes shown have their numeric portions directly identifying the associated digit, but should an excess-three code prove more advantageous when hardware, circuitry and machine logic is considered in detail, the digit code could be modified without affecting the over-all structure of the system.

Two columns of code configuration are suggested to represent the alphabet and one column for all special characters. The character representations associated with the particular code configuration are only suggested and can be assigned any meaning by a programmer. The important fact to remember is that the code itself has meaning to the computer, the assignment of alphabetic and special characters to the code has meaning only to the programmer.

The programmer or computer installation can devise its own standard internal code system, thereby permitting unique collating sequences or the introduction of special characters unique to the machine user.

The code for blank "b" should remain unmodified, because certain machine functions are controlled by recognizing the least significant of all possible characters.

Inconsistent codes initially entering the computer should be converted or transformed to take advantage of the ranked internal code system before processing begins. Conversion to a compatible printer code will be necessary only when printed output is required and the conversion will be dependent upon the code configuration required by the printer to recognize any specific character.

Data once converted to conform to the internal computer code can remain in that form for all processing applications. Special provision can be made to provide an odd count parity bit should the data in the internal computer code be required to be transmitted to input output units such as the 727 tape unit. The odd count parity bit is suggested to insure against attempts to record characters (such as blanks) whose basic internal code consists of all zero bits.

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DELTA COMPUTER
INTERNAL DECIMAL-ALPHANUMERIC CODE

C B A 8 4 2 1	CHAR.	C B A 8 4 2 1	CHAR.	C B A 8 4 2 1	CHAR.	C B A 8 4 2 1	CHAR.
UNASSIGNED		UNASSIGNED		UNASSIGNED		UNASSIGNED	
		1 0 1 1 0 0	Z	0 1 1 1 0 0	M		
		1 0 1 0 1 1	Y	0 1 1 0 1 1	L	0 0 1 0 1 1	@
		↓ ↓ 1 0 1 0	X	↓ ↓ 1 0 1 0	K	0 0 1 0 1 0	#
1 1 1 0 0 1	9	1 0 0 1	W	1 0 0 1	J	↓ ↓ 1 0 0 1	%
1 1 1 0 0 0	8	1 0 0 0	V	1 0 0 0	I	1 0 0 0	,
↓ ↓ 0 1 1 1	7	0 1 1 1	U	0 1 1 1	H	0 1 1 1	/
0 1 1 0	6	0 1 1 0	T	0 1 1 0	G	0 1 1 0	-
0 1 0 1	5	0 1 0 1	S	0 1 0 1	F	0 1 0 1	*
0 1 0 0	4	0 1 0 0	R	0 1 0 0	E	0 1 0 0	\$
0 0 1 1	3	0 0 1 1	Q	0 0 1 1	D	0 0 1 1	&
0 0 1 0	2	0 0 1 0	P	0 0 1 0	C	0 0 1 0	◇
0 0 0 1	1	0 0 0 1	O	0 0 0 1	B	0 0 0 1	.
1 1 0 0 0 0	0	1 0 0 0 0 0	N	0 1 0 0 0 0	A	0 0 0 0 0 0	b ← BLANK
← NUMERIC →		← ALPHABET AND SPECIAL CHARACTERS →					
PROGRAMMER ASSIGNS CHAR. REPRESENTATION TO SPECIFIC CODE PLACE IN COLLATING SEQUENCE							

COLLATING SEQUENCE
(FOR CODE REPRESENTATION SHOWN)
BLANK (b) . † & ---- @ A through M N through Z 0 through 9

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