A Guide to Half-Inch Tape Read Failures under the new Monitor

I have carried out a survey of the exact types of read failure that are caused by reading half-inch tape records in the wrong density and/or parity mode, as applicable to tapes written in B.C.D. mode. The following results may be of interest to others:

Reading a half-inch tape record in a density and/or parity combination other than that in which it was written causes an FZ type fault, normally resulting in termination of the program (unless trapped) with the message 'IBM TAPE ERROR 0.4' on stream 0.

B94 contains the number read from the IBM V-store (*600412) with the significance of a few digits changed (as output on tape operator's tele-printer), the interpretation of the actual digits set being as set out in 'Supervisor Notes from S.H. Michael (Version M6)' by D. Parker, Support Group, 30.12.68.

The digits of interest that are set with the type of read fault described above are as follows:

B94 12 most sig. digits (octal)	Meaning
0202	longitudinal parity
0204	lateral parity
0206	longitudinal and lateral parity

These three possible types of fault are caused by the following combinations of incorrect density and/or parity.

FAULT TYPE B94	CAUSED BY: TAPE RECORD			
	WRITTEN IN BCD		READ	
	DENSITY	PARITY	DENSITY	PARITY
0202	LOW	EVEN	HIGH	EVEN
	LOW	ODD	HIGH	ODD
0204	LOW	EVEN	LOW	ODD
	LOW	ODD	LOW	EVEN
	HIGH	EVEN	LOW	ODD
	HIGH	EVEN	LOW	EVEN
	HIGH	EVEN	HIGH	ODD
	HIGH	ODD	HIGH	EVEN
	HIGH	ODD	LOW	EVEN
	HIGH	ODD	LOW	ODD
0206	LOW	EVEN	HIGH	ODD
	LOW	ODD	HIGH	EVEN

The above does not necessarily apply to tapes written in binary mode.

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