

## MICR Fonts

*Magnetic ink character recognition* (MICR) is a technology that enables financial institutions to process paper cheques and deposit slips quickly. It is based on special MICR fonts that must be printed with magnetic ink or toner (containing iron oxide). It was invented at the Stanford Research Institute (SRI) in projects that began in 1950 with a feasibility study for automation for the Bank of America.

In 1956, the SRI machine *ERMA* (for Electronic Recording Method of Accounting) was demonstrated. It involved a bulky valve computer. The Bank of America decided to commission a production model. They contracted for 32 machines from General Electric. The order for the *ERMA Mark II* was delivered to the Bank of America in 1959. The system consisted of a GE-225 computer, a sorter/reader, magnetic tape units, and a high-speed printer. The check sorter/reader had the capability to read seven hundred fifty checks per minute. The project is a controversial high-point in GE's computer business.

A standard font E-13B was established in 1958 by the American Bankers' Association; this is the font currently used in the UK. The font is an alphabet of 14 characters. There are ten symbols for the numbers 0-9 and four symbols that denote, customer account number, bank branch, transaction amount and separate the numbers, respectively:

0 1 2 3 4 5 6 7 8 9  
" ' , "

Figure. The MIRC fonts set E-13B.

The name E-13B is made up as follows: 13 for the grid, each character is designed on a grid of 0.013 inch squares; E notes the fifth proposal for fonts; B denotes the second version. The magnetic technology is very accurate but technically demanding in printing and costly in ink and machinery; in some applications it is being replaced by optical character reading.

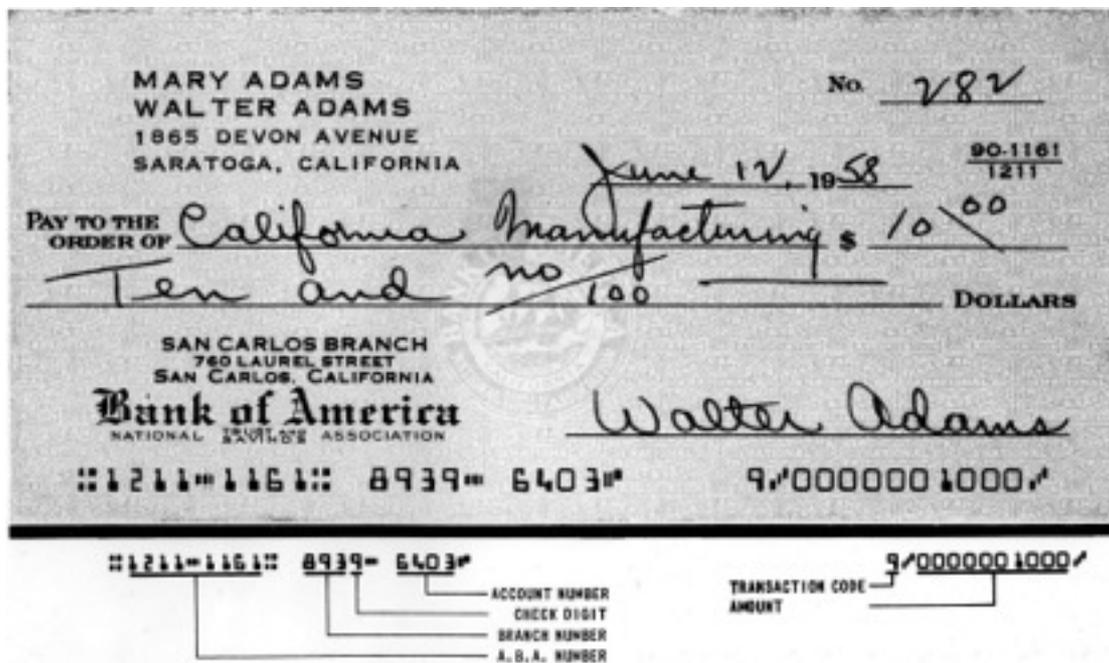


Figure. An example of a cheque with MIRC fonts from 1958.

## Reference

Amy Weaver Fisher and James L. McKenney, *The development of the ERMA banking system: Lessons from history*, IEEE Annuals of History of Computing, 15 (1993), 44-57.

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