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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 961

withdrawn 1978

IMPLEMENTATION OF THE 6 AND 7-BIT CODED CHARACTER SETS
ON 7 TRACK 12.7 mm (1/2 in) MAGNETIC TAPE

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BRIEF HISTORY

The ISO Recommendation R 961, *Implementation of the 6 and 7-bit coded character sets on 7 track 12.7 mm (1/2 in) magnetic tape*, was drawn up by Technical Committee ISO/TC 97, *Computers and information processing*, the Secretariat of which is held by the American National Standards Institute (ANSI).

Work on this question led, in 1967, to the adoption of a Draft ISO Recommendation.

In September 1967 this Draft ISO Recommendation (No. 1320) was circulated to all the ISO Member Bodies for enquiry. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Belgium	Israel	Switzerland
Canada	Italy	Turkey
Czechoslovakia	Korea, Rep. of	U.A.R.
Denmark	Netherlands	United Kingdom
France	Sweden	U.S.S.R.

No Member Body opposed the approval of the Draft.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in February 1969, to accept it as an ISO RECOMMENDATION.

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IMPLEMENTATION OF THE 6 AND 7-BIT CODED CHARACTER SETS ON 7 TRACK 12.7 mm (1/2 in) MAGNETIC TAPE

1. GENERAL

1.1 Scope

This ISO Recommendation is for the implementation of ISO 6 and 7-bit coded character sets for general interchange of information on 7 track 12.7 mm (1/2 in) magnetic tape.

1.2 Definitions (The Figure on page 7 illustrates the following definitions.)

1.2.1 *Magnetic tape*.* Tape which will accept and retain magnetic signals intended for input, output and storage purposes on computers and associated equipment.

1.2.2 *Track*.* A longitudinal area on the tape along which a series of magnetic signals may be recorded.

1.2.3 *Reference edge*.* The edge farthest from an observer, or nearest the top of a page, when a tape is lying flat with the oxide side uppermost and the direction of movement for recording from left to right (see Figure).

1.2.4 *Row*. A transverse area on the tape along which magnetic signals of tracks are recorded.

1.2.5 *Block*. A series of rows, limited by suitable marks, to be recorded and read as a group.

1.2.6 *Gap*. Space left unused between blocks.

1.3 References

1.3.1 This ISO Recommendation refers to the 6 and 7-bit coded character sets which are the subject of ISO Recommendation R 646, *6 and 7-bit coded character sets for information processing interchange*.

1.3.2 The magnetic tape on which these character sets are implemented is specified in ISO Recommendation R . . . **, *7 track 200 RPI (8 RPmm) magnetic tape for information interchange*.

1.3.3 The magnetic labelling is the subject of ISO Recommendation R 1001, *Magnetic tape labelling and file structure for information interchange*.

* The definitions marked with an asterisk are in accordance with ISO Recommendation R . . . , *Unrecorded magnetic tape for information interchange – 200 and 800 RPI (8 and 32 RPmm), NRZI, and 1600 RPI (63 RPmm), phase encoded (at present, Draft ISO Recommendation No. 1864)*.

** At present, Draft ISO Recommendation No. 1861.

2. SPECIFICATIONS

2.1 Track identification*

There shall be 7 tracks on the tape and they shall be numbered consecutively from 1 to 7, with track 1 adjacent to the reference edge (see Figure).

2.2 Data content*

All 64 binary combinations are permissible in tracks 1 to 6 of each row.

2.3 Constitution of data blocks*

All blocks for data interchange shall consist of not less than 18 data rows and not more than 2048 data rows and, in addition, a longitudinal check row.

2.4 Error protection*

2.4.1 *Parity of data rows.* The parity track shall be track 7 and the bit recorded on that track will be chosen so that the number of "ONE" bits recorded on the same row is odd.

2.4.2 *Longitudinal check row.* This row is written at the end of a block and its content is such that the number of "ONE" bits recorded on the same track is even for the whole block with this longitudinal check row.

2.5 Control blocks (Tape Mark)*

For the purpose of separating data, a single row control block, known as Tape Mark, shall be allowed. The exact use of the Tape Mark is described in ISO Recommendation R 1001, *Magnetic tape labelling and file structure for information interchange*. This block shall be accompanied by a longitudinal check row. The Tape Mark shall be represented by the combination 0 011 111 in tracks 7 to 1 respectively.

2.6 Representation of coded characters

2.6.1 *Sequence of coded characters.* Considering the recorded data as being in character form, the sequence of characters from the start towards the finish of a block shall correspond to the normal left to right sequence of a written line.

2.6.2 *Arrangement of 6-bit coded characters.* Data coded in 6-bit characters shall be recorded on tape with one character per row, and the relation between the tracks on the tape and the bits within each character shall be as follows:

Track No. :	6	5	4	3	2	1
Bit No. :	6	5	4	3	2	1

2.6.3 Arrangement of 7-bit coded characters

2.6.3.1 With the exception noted in clause 2.6.3.3 below, if bits b7 and b6 are unlike (01 or 10),** then the character shall be recorded within one row on the tape, omitting bit b6.

The relation between the tracks on the tape and the remaining bits within the character shall be as follows:

Track No. :	6	5	4	3	2	1
Bit No. :	7	5	4	3	2	1

* In accordance with ISO Recommendation R . . . , 7 track 200 RPI (8 RPmm) magnetic tape for information interchange (at present, Draft ISO Recommendation No. 1861).

** This occurs when the character is a member of the so-called "dense" graphic subset.