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# INTERNATIONAL STANDARD



# 1863

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION · МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ · ORGANISATION INTERNATIONALE DE NORMALISATION

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## Information processing — 9-track, 12,7 mm (0.5 in) wide magnetic tape for information interchange recorded at 32 rpmm (800 rpi)

*Traitement de l'information — Bande magnétique à 9 pistes, de 12,7 mm (0,5 in) de large, pour l'échange d'information, enregistrée à 32 rangées par millimètre (800 rpi)*

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Ref. No. ISO 1863-1976 (E)

**Descriptors** : data processing, data recording, data layout, magnetic tapes, half-inch magnetic tape, 9-tracks, recording characteristics.

**FOREWORD**

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up has the right to be represented on that Committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 1863 was drawn up by Technical Committee ISO/TC 97, *Computers and information processing*, and circulated to the Member Bodies in February 1975.

It has been approved by the Member Bodies of the following countries :

|                |                       |                |
|----------------|-----------------------|----------------|
| Australia      | Japan                 | Switzerland    |
| Canada         | Mexico                | Turkey         |
| Czechoslovakia | Netherlands           | United Kingdom |
| France         | New Zealand           | U.S.A.         |
| Germany        | Poland                | Yugoslavia     |
| Hungary        | Romania               |                |
| Italy          | South Africa, Rep. of |                |

The Member Body of the following country expressed disapproval of the document on technical grounds :

Belgium

This International Standard cancels and replaces ISO Recommendation R 1863-1971, of which it constitutes a technical revision.

This International Standard presents the standard technique for recording the ISO 7-bit coded character set for information processing interchange on 9-track magnetic tape at 32 rows per millimetre (rpm) [800 rows per inch (rpi)] using the "non-return to zero mark" (NRZI) recording technique. It is one of a series of International Standards concerning implementation of 6- and 7-bit codes in media.

In the development of this International Standard, careful consideration was given to current practices, existing equipment and supplies, and the broadest possible acceptance while providing a basis for future improvement in the use of the medium.

In previous standards for the interchange of data on magnetic tape, the problems encountered due to packing density of 8 rows per millimetre (rpm) [200 rows per inch (rpi)] have not created any serious difficulty with respect to the definitions or the quantitative values assigned to the various parameters.

Some of the difficulties and technical shortcomings which had to be faced in the preparation of this International Standard are listed below :

- a) the positioning of the data on the tape is very dependent on the particular guidance geometry of the tape transport;
- b) the coating thickness of the tape has an appreciable effect on the position of bits due to the pulse crowding factor on the tape as specified;
- c) the characteristics of the head and in particular the crosstalk factor;
- d) the initial transient conditions as the tape is started from rest;
- e) the problem of defining and utilizing the reference edge;
- f) speed variations at the time of writing and reading which could also include different nominal speeds;
- g) timing constraints due to coding and pattern sensitivity.

It is important to recognize, in the light of these difficulties, that the write-check by the control device is the most practical method of measuring the quality of the written tape. This International Standard therefore includes certain definitions and quantitative values which represent the most meaningful checks that can be provided at the present time.

When magnetic tape is read by the recipient, certain additional factors of tape dynamics will have to be considered.

