BRITISH STANDARD

BS 5769-1:
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ISO 4341:1978

Specification for

Magnetic tape cassette and cartridge labelling and file structure, for information interchange —

Part 1: Label standard version 1

[ISO title: Information processing — Magnetic tape cassette and cartridge labelling and file structure for information interchange]

UDC 681.327.64.05:006.015.3

Cooperating organizations

The Data Processing Standards Committee, under whose direction this British Standard was prepared, consists of representatives from the following Government departments and scientific and industrial organizations:

British Computer Society Limited*
British Paper and Board Industry Federation (PIF)
British Printing Industries Federation
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Association of County Councils
Association of Metropolitan Authorities
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British Insurance Association
Inter-bank Research Organisation
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This British Standard, having been prepared under the direction of Data Processing Standards Committee, was published under the authority of the Executive Board and comes into effect on 28 September 1979

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Contents

National foreword

Part 1 of this British Standard is identical with ISO 4341 "*Information processing — Magnetic tape cassette and cartridge labelling and file structure for information interchange*" published by the International Organization for Standardization (ISO). Further versions of ISO 4341 are likely to be prepared and the intention is that they will be implemented in the UK as further Parts of this standard. Changeover from each label standard version to the next version may be made easier by allowing consecutive Parts of this standard to coexist for a time.

Terminology and conventions. The text of the International Standard has been approved as suitable for publication, without deviation, as a British Standard. Some terminology and certain conventions are not identical with those used in British Standards; attention is especially drawn to the following.

The comma has been used as a decimal marker. In British Standards it is current practice to use a full point on the baseline as the decimal marker.

Wherever the words "International Standard" appear, referring to this standard, they should be read as "British Standard".

Cross-references

International Standard	Corresponding British Standard
ISO 646:1973	BS 4730:1974 *The United Kingdom 7-bit data code (ISO-7-UK)* (Technically equivalent)
ISO 1001:1979	BS 4732 *Magnetic tape labelling and file structure for data interchange* Part 2:1979 *Label standard version 3*
ISO 3407:1976	BS 5079 *3.81 mm magnetic tape in a cassette for data interchange* Part 1:1974 *Tape recorded at 31.5 bits per millimetre, phase encoded* (Related)

NOTE 1 BS 4730 is fully in conformity with ISO 646 which allows for national versions.
NOTE 2 BS 5079-1:1974 and ISO 3407:1976 are very closely related; in particular, they are technically equivalent regarding use of tracks (see clause **3** of this standard).
NOTE 3 Although the reference to ISO 3275:1974 is not essential to the operation of this standard, it may be noted that ISO 3275 is technically equivalent to the relevant content of BS 5079-1:1974.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 12, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

0 Introduction

The aim of this International Standard is to make possible the interchange of information recorded on magnetic tape cassettes and cartridges between different users and different data processing and data capture equipment. This is accomplished by the arrangement of magnetically recorded separators and labels, to structure and identify the files.

To provide for the wide range of equipment and applications using magnetic tape cassettes, three systems of increasing complexity are specified. It is possible to distinguish between the three systems by reading the first block recorded on a particular volume.

In order that a cassette which carries more sophisticated labelling may be copied on unsophisticated equipment, the terminating conditions for end of track and end of data within a cassette are identical in all three of these systems. Thus, support of the basic system is a necessary requirement to ensure data interchangeability from simple data preparation devices to more complex data processing systems.

The third system is provided only for use in the most sophisticated environment, where ISO 1001 for magnetic tape labelling is already employed.

Throughout the whole of this International Standard, the use of the 7-bit coded character set specified in ISO 646 is implied.

NOTE Whenever the word "cassette" is used, the word "cartridge" is also implied. It is felt that the illustrations and examples given for cassettes can readily be interpreted to cover similar situations for multi-track cartridges.

1 Scope and field of application

This International Standard specifies file structures for data interchange on magnetic tape cassettes.

To provide for the range of sophistication in equipment and applications, three systems are specified:

a) the *basic* system, employing only hardware-defined separators to structure the files;

b) the *compact* system, employing special data blocks with information content (labels), which are capable of being recorded using only numeric equipment;

c) the *extended* system, employing the magnetic tape labelling system specified in ISO 1001 together with new labels, to define a more comprehensive labelling system.

This International Standard is not limited to the 3,81 mm magnetic tape cassette described in ISO 3407 but could also be applied to higher capacity cassettes or cartridges.

2 References

ISO 646, *7-bit coded character set for information processing interchange.*

ISO 1001, *Information processing — Magnetic tape labelling and file structure for information interchange.*

ISO 3275, *Information processing — Implementation of the 7-bit coded character set and its 7-bit and 8-bit extensions on* 3,81 mm *magnetic tape cassette for data interchange.*

ISO 3407, *Information processing —* 3,81 mm (0.150 in) *magnetic tape cassette for information interchange,* 32 bpmm (800 bpi)*, phase encoded.*

3 Definitions

For the purposes of this International Standard the following terms have the meanings indicated.

NOTE For a better explanation, the concepts have, where appropriate, been listed separately as logical and physical. The definition of a term that is used in an International Standard related to this subject conforms to its usage in that International Standard; the definition of a term that is in common use in a context related to this International Standard conforms to that common usage.

label

a block, at the beginning or at the end of a volume, of a track or of a file, that identifies, characterizes and/or delimits that volume, track or file. A label is not considered to be part of a file

label identifier

one or more characters recorded in the label to identify the label

characters used in a label

only a subset of the characters of the 7-bit code defined in ISO 646 is used in the label. The allowable characters are described in the following way:

— "n" characters: any numeric character from 0 to 9.

— "a" characters: any numeric, alphabetic or special character of the centre four columns of the code table except position 5/15 and those positions where there is provision for alternative graphic representation.

tape mark

a delimiter used to indicate the boundary between file data and labels, and also between certain labels. In the *basic* system it is used to separate files

NOTE 1 The tape mark configuration is specified in the relevant International Standard for data interchange on magnetic tape cassettes.
NOTE 2 Throughout this International Standard the tape mark is indicated as an asterisk (*).

Logical	Physical
record: Related data treated as a unit of information.	**block:** A group of contiguously recorded characters written or read as a unit, and terminated with an interblock gap.
file: A collection of information consisting of records pertaining to a single subject *Examples:* In the context of business data, a payroll file, an inventory file. — The delineation of a file may be arbitrary. — A file may be recorded on all or part of a track or volume, or on more than one volume.	**volume:** A dismountable physical unit of storage media, for example a complete cassette consisting of either — two tracks used serially and sequentially for data interchange as specified in ISO 3407 or — a single track (number 1, side A) used serially for data interchange with the use of track number 2, side B, defined by agreement between the interchange parties as specified in ISO 3407
file section: That part of a file that is recorded on a single track of a cassette. — The sections of a file in a volume shall not have sections of other files interspersed.	
file set: A collection of one or more related files, recorded consecutively on a volume set.	**volume set:** A collection of one or more volumes on which one and only one file set is recorded.

double tape mark

a delimiter consisting of two consecutive tape marks that is used to indicate the end of a volume or of a file set

NOTE Except in the *basic* system, two consecutive tape marks also occur when an empty file section or an empty file exists on a volume, in which case they are not interpreted as a double mark but rather as two single tape marks framing an empty file section. In this context "empty" means that no blocks are present between the tape mark following the header label and the tape mark preceding the end of volume, end of track or end of file label of that file section or file.

4 Basic system

4.1 Introduction

The *basic* system permits the structuring of one or more files on one volume by means of hardware separators (tape marks) only. Each volume is independent; multi-volume files are not provided. No magnetically recorded labels are used.

The procedures for recording and detecting end of data on a track are defined in the relevant International Standards for media.

4.2 Use of tape marks

Tape marks are used with the following significance to indicate the structure of volumes and files.

— Start of volume . . .*
— File separator . . .*
— Intermediate end of track . . .*
— Intermediate start of track . . .*
— End of data (and end of volume) . . .**

It is not permitted for one file separator to be immediately followed by another since this signifies end of data; thus, there can be no empty file sections as described in the definition of "double tape mark" in clause **3**.

Two tape marks not signifying end of data may occur when an intermediate start of track is immediately followed by a file separator: this condition is explained in **4.4** and **4.5**.

4.3 Structuring the files

Figure 1 illustrates the use of tape marks to establish the file structure according to the definitions of **4.2**. In this figure and Figure 2, the beginning of the tape is at the left and the end of the track is at the right. Each box represents a track.

If the end-of-tape marker is encountered whilst a data block is being written, then, unless the system avoids the situation by, for example, erasing the current block, the system will complete writing the data block, and will then close the track with an intermediate end of track tape mark. The next track is opened with an intermediate start of track tape mark [as illustrated in Figure 1 b) and Figure 1 d)], and the file is continued.

4.4 Coincidence of end of file and intermediate start of track

This situation arises when the end-of-tape marker is recognized whilst the system is writing the last data block of the file. In this case the system will close the track and open the next track as indicated in **4.3**, except that no data blocks of the completed file will be written in the next track, but only a file separator.

There are then two possibilities:

4.4.1 If the file is not the last file of the set, the resulting configuration will be as illustrated in Figure 2 a).

4.4.2 If the file is the last file of the set, the next track will be terminated by a third tape mark as illustrated in Figure 2 b), in this case the last two tape marks are to be interpreted as an end of data indicator.

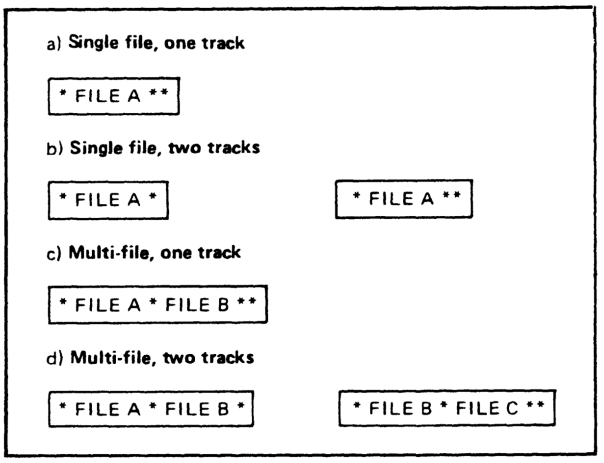

Figure 1 — File structure

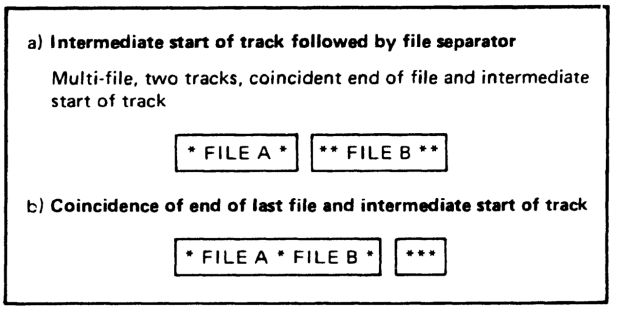

Figure 2 — File structure — Special cases

4.5 Coincidence of end of file and intermediate end of track

This situation arises when the end-of-tape marker is recognized whilst the system is writing the tape mark following a file.

There are then two possibilities:

4.5.1 If the file is not the last file of a set, the track is terminated at that point, so that the tape mark already written is now to be interpreted as an intermediate end of track indicator. The next track starts with an intermediate start of track indicator, followed by a file separator indicator, as illustrated in Figure 2 a).

4.5.2 If the file is the last file of a set, the system will write a second tape mark to complete the track with an end of data indicator as illustrated in Figure 1 a) and Figure 1 c).

4.6 End of available space

If the end-of-tape marker is recognized at the end of the last or only track on the volume which is available for recording, the file must be terminated with an end of data indicator as illustrated in Figure 1.

4.7 Recording density

The blocks recorded on all volumes containing a file set shall be recorded with the same density.

4.8 By-pass or check-point records

Only the relevant data blocks shall be written on a cassette used for interchange. Since by-pass information and check-point records are considered to be extraneous to the interchange, and no standard means of identification is provided, the recording of by-pass and check-point information is not allowed on cassettes for interchange.

5 Compact system

5.1 Introduction

The *compact* system permits the structuring of one or more files on one or more volumes by means of magnetically recorded labels and tape marks. The labels are capable of being recorded by equipment which uses only "n" characters but provision is made for the use of "a" characters in appropriate fields.

The procedures for recording and detecting end of data on a track are defined in the relevant International Standards for media.

5.2 Use of tape marks

The tape mark is used to separate labels from file data and from other labels.

5.3 Formats and contents of labels

A label is a 32-character block, the character positions of which are numbered 1 to 32. They are classified into four types as given in the Table.

Table — Classification of labels

Type	Name	Mnemonic	Identifier
Beginning of file or of file section	File Header Label	HDR	1
End of track	End of Track Label	ETR	3
End of volume	End of Volume Label	EOV	7
End of file or of last file section	End of File Label	EOF	9
NOTE ETR and EOV both imply end of first or intermediate file section.			

5.3.1 *File Header Label* (HDR)

Character position (CP)	Field name	Field length	Content
1	Label Identifier	1	1
2 to 5	Volume Identifier	4	"a" characters. Permanently assigned by the owner to identify the volume
6 to 13	File Identifier	8	"a" characters. Assigned by the originator to identify the file
14 and 15	File Section Number	2	"n" characters. Identifies the section among other sections of the file
16 to 20	Creation Date	5	Two "n" characters for the year followed by three "n" characters for the day (001 to 366) within the year
21 to 23	Retention Period	3	"n" characters. Specifies a number of days
24 to 27	Block Count	4	0000
28	Label Standard Version	1	"a" character. Indicates the version of this International Standard. 1 means this version.
29 to 32	Reserved for future standardization	4	0000

5.3.2 ***End of Track Label*** (ETR)

Character position (CP)	Field name	Field length	Content
1	Label Identifier	1	3
2 to 23	Same as the corresponding fields in HDR	22	Same as the corresponding fields in HDR or 22 ZERO characters
24 to 27	Block Count	4	"n" characters
28 to 32	Same as the corresponding fields in HDR	5	Same as the corresponding fields in HDR or 5 ZERO characters

5.3.3 ***End of Volume Label*** (EOV)

Character position (CP)	Field name	Field length	Content
1	Label Identifier	1	7
2 to 23	Same as the corresponding fields in HDR	22	Same as the corresponding fields in HDR or 22 ZERO characters
24 to 27	Block Count	4	"n" characters
28 to 32	Same as the corresponding fields in HDR	5	Same as the corresponding fields in HDR or 5 ZERO characters

5.3.4 ***End of File Label*** (EOF)

Character position (CP)	Field name	Field length	Content
1	Label Identifier	1	9
2 to 23	Same as the corresponding fields in HDR	22	Same as the corresponding fields in HDR or 22 ZERO characters
24 to 27	Block Count	4	"n" characters
28 to 32	Same as the corresponding fields in HDR	5	Same as the corresponding fields in HDR or 5 ZERO characters

5.4 Processing of label fields

5.4.1 *General*

The Label Identifier must be written with the content as specified. Other fields may have the content as specified or a default value of the appropriate number of ZERO characters.

On reading, the fields may be treated as desired.

5.4.2 *Use of data in label fields*

On input, the system may override data found in labels being processed by that system with new values of those data provided from other sources. The new values may be supplied before the file is processed (for example compiled values) or after the processing has begun (for example system control statement), at the option of the system implementors.

5.4.3 ***File Section Number*** (HDR, CP 14 and 15)

The number of the first section of a file is 01. This number is increased by 1 for each successive track or volume of the file.

5.4.4 ***Retention Period*** (HDR, CP 21 to 23)

The Retention Period is a quantity to be added to the Creation Date to form the expiration date. The retention period may exceed one year.

A file is regarded as "expired" on a day the date of which is equal to or later than the expiration date. When this condition is satisfied, the remainder of the volume set may be overwritten. To be effective on multi-file volumes, therefore, the expiration date of a file must be less than or equal to the expiration dates of all previous files on the volume set.

5.4.5 ***Block Count*** (ETR, EOV, EOF, CP 24 to 27)

The Block Count denotes only the number of data blocks since the preceding HDR label. This count excludes label blocks and tape mark blocks.

If the Block Count has the value zero, it is ignored.

This field is provided in order that when a magnetic tape cassette is read the system may ensure that no blocks have been skipped and no false blocks have been inserted. The particular error of equal numbers of skipped and false blocks may escape detection.

5.4.6 ***Label Standard Version*** (HDR, CP 28)

This will appear in every HDR, and must have the same value in every HDR in a volume set. It specifies successive versions of this International Standard that may be defined, and for that purpose numeric values will be used, as far as possible. It is also useful to distinguish between future standards and parochial practice that may develop in the meantime.

Applications which record a value other than 1 in this field produce non-standard volumes. This may result in a subsequent failure of information interchange.

5.5 Structuring the files

Labels and tape marks are used to establish the file structure according to the following rules and as illustrated in the accompanying Figure 3 to Figure 7. In these figures the beginning of the tape is at the left and the end of the tape is at the right. Labels are represented by their mnemonic identifiers.

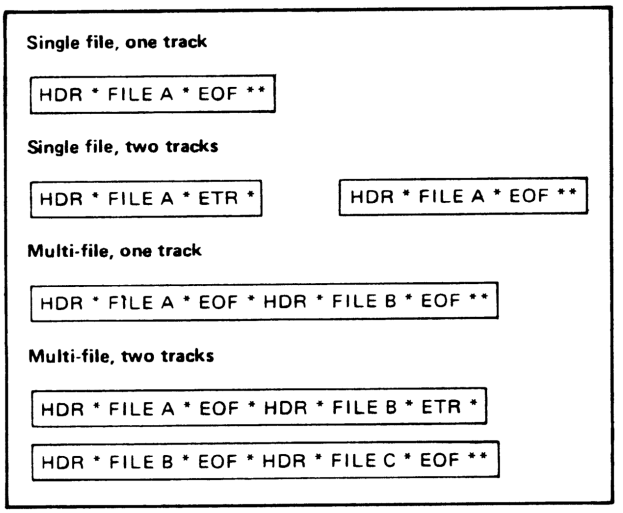

Figure 3 — Single-volume file structure

5.5.1 ***Configurations of files within the tracks of a volume***

The various configurations of files that can be formed according to these rules are illustrated in Figure 3. Each box represents a track.

5.5.2 ***Configurations of files in a multi-volume case***

The two configurations of files that can be formed according to these rules are illustrated in Figure 4. The distinction between tracks within the volumes is not shown, and the configurations within the volumes are as given in Figure 3. Each box represents a volume.

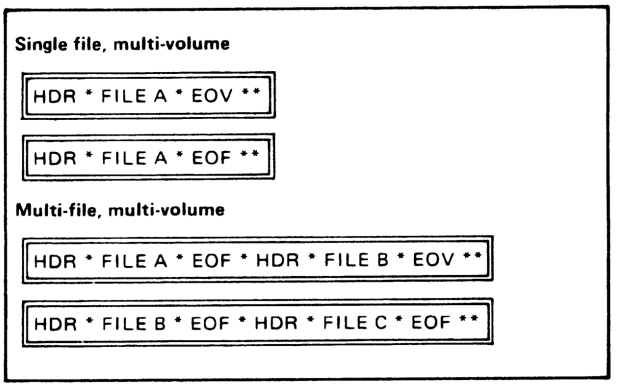

Figure 4 — Multi-volume file structure

5.5.3 ***File Header Label***

Each file shall be preceded by the File Header Label.

5.5.4 ***Data***

File data shall follow the File Header Label and be separated from the label by a tape mark.

5.5.5 ***End of File Label***

The End of File Label shall follow the last data block of the file and be separated from the file by a tape mark.

5.5.6 ***Tape mark after End of File Label***

If the file ends within a volume, a tape mark shall immediately follow the End of File Label.

If the file is the last file of a file set, a double tape mark shall immediately follow the End of File Label.

5.5.7 ***End of Track Label***

If the file extends over the end of a track, the End of Track Label shall follow the last data block on that track and be separated from that data block by a tape mark. The End of Track Label shall always be followed by a single tape mark.

5.5.8 ***End of Volume Label***

If the file extends over the end of a volume, the End of Volume Label shall follow the last data block on that track and be separated from that data block by a tape mark. The End of Volume Label shall always be followed by a double tape mark.

5.5.9 ***Empty file or file section***

When an empty file or file section is present, the rules stated in **5.5.4**, **5.5.5**, **5.5.7** and **5.5.8** will cause two consecutive tape marks to be written between the File Header Label and the End of File, Track or Volume Label.

5.5.10 ***Continuation file section in a multi-track or multi-volume file***

The first data block of a continuation file section shall be preceded by a File Header Label as described in **5.5.3** and **5.5.4**. This includes a copy of the last File Header Label on the previous track or volume, in which the File Section Number is increased by one and the Volume Identifier may be different.

5.5.11 ***Coincidence of end of file and end-of-tape marker***

If the end of a file coincides with an intermediate end of track or the end of a volume, then, unless the system avoids the situation by, for example, erasing the current block, three situations are possible:

5.5.11.1 The end-of-tape marker is detected whilst the system is writing the last data block of the file. In this case the system will complete writing the data block and close the track or volume as described in **5.5.7** or **5.5.8** respectively. The file is continued on the next track or volume by writing a File Header Label (see **5.5.10**), two tape marks and an End of File Label.

Examples are given in Figure 5 and Figure 6.

Figure 5 — Empty file section at intermediate start of track

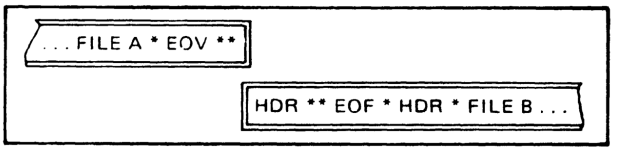

Figure 6 — Empty file section at start of continuation volume

5.5.11.2 The end-of-tape marker is recognized whilst the system is writing the End of File Label or the tape mark which precedes or follows it, and the file is not the last of a set. In this case the system will complete the writing of the End of File Label and the tape mark following it. The File Header Label of the next file will then be written followed by an empty file section, and the track or volume terminated by an End of Track or End of Volume Label respectively. The File Header Label will then be rewritten at the start of the next track or volume.

Examples are given in Figure 7 and Figure 8.

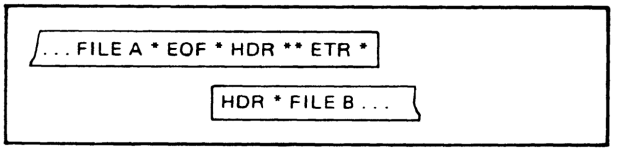

Figure 7 — Empty file section at intermediate end of track

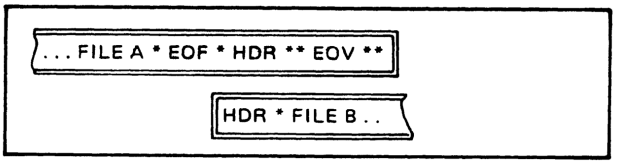

Figure 8 — Empty file section at end of volume

5.5.11.3 The end-of-tape marker is recognized whilst the system is writing the End of File Label or the tape mark which precedes or follows it and the file is the last file of a set. In this case the system will complete the writing of the End of File Label and the tape mark following it and then close the volume with a second tape mark as described in **5.5.6**.

5.5.12 *Coincidence of beginning of file and end-of-tape marker*

If the end-of-tape marker is recognized whilst the system is writing the File Header Label or the tape mark following it, then the File Header Label will be followed by an empty file section and the track or volume terminated by an End of Track or End of Volume Label respectively. The File Header Label will then be rewritten at the start of the next track or volume. The resulting configurations are illustrated in Figure 7 and Figure 8.

5.6 Recording density

The blocks recorded on all volumes containing a file set shall be recorded with the same density.

5.7 By-pass or check-point records

Only the relevant data blocks shall be written on a cassette used for interchange. Since by-pass information and check-point records are considered to be extraneous to the interchange, and no standard means of identification is provided, the recording of by-pass and check-point information is not allowed on cassettes for interchange.

6 Extended system

6.1 Introduction

The *extended* system provides the full range of facilities described in ISO 1001 together with certain additional features to control the transition from track to track within the volume. The remainder of this clause specifies the format of the End of Track (ETR1 and ETR2) and Start of Track (STR1) Labels and the file structure resulting from their use.

The procedures for recording and detecting end of data on a track are defined in the relevant International Standards for media.

6.2 Use of tape marks

The use of tape marks is the same as in ISO 1001 with the addition described in **6.5.3**.

6.3 Formats and contents of labels

6.3.1 *First End of Track Label* (ETR1)

Character position (CP)	Field name	Field length	Content
1 to 3	Label Identifier	3	ETR
4	Label Number	1	1
5 to 54	Same as the corresponding fields in HDR1 as specified in ISO 1001	50	Same as the corresponding fields in HDR1, as specified in ISO 1001
55 to 60	Block Count	6	"n" characters. Denotes the number of data blocks since the preceding beginning of file label group. This count excludes label blocks and tape mark blocks
61 to 80	Same as the corresponding fields in HDR1, as specified in ISO 1001	20	Same as the corresponding fields in HDR1, as specified in ISO 1001

6.3.2 *Second End of Track Label* (ETR2) (optional)

Character position (CP)	Field name	Field length	Content
1 to 3	Label Identifier	3	ETR
4	Label Number	1	2
5 to 80	Same as the corresponding fields in HDR2, as specified in ISO 1001	76	Same as the corresponding fields in HDR2, as specified in ISO 1001

6.3.3 ***Other optional labels*** (ETR3 to 9)

Character position (CP)	Field name	Field length	Content
1 to 3	Label Identifier	3	ETR
4	Label Number	1	3, 4, 5, 6, 7, 8 or 9
5 to 80	Reserved for System Software Use	76	"a" characters

6.3.4 ***Start of Track Label*** (STR1)

Character position (CP)	Field name	Field length	Content
1 to 3	Label Identifier	3	STR
4	Label Number	1	1
5 to 11	Same as the corresponding fields in VOL1, as specified in ISO 1001	7	Same as the corresponding fields in VOL1, as specified in ISO 1001
12	Track Number	1	"n" character
13 to 80	Same as the corresponding fields in VOL1, as specified in ISO 1001	68	Same as the corresponding fields in VOL1, as specified in ISO 1001

6.4 Processing of label fields

This sub-clause contains references only to the fields of ETR1 and STR1 and to those fields of other labels which are affected by the existence of track transitions.

6.4.1 ***File Section Number*** (HDR1, CP 28 to 31, also in ETR1, EOV1, EOF1)

The number of the first section of a file is 0001. This number is increased by 1 for each successive track or volume of the file.

6.4.2 ***Track Number*** (STR1, CP 12)

The numbering of the tracks commences at 1. However, because the first STR1 label appears on the second track of the volume, the value of Track Number in that label is 2. This value is incremented by 1 for each additional track on the volume.

6.5 Structuring the files

Labels and tape marks are used to establish the file structure according to the following rules and as illustrated in the accompanying Figure 9 to Figure 12. In these figures the beginning of the tape is at the left, and the end of the tape is at the right. The figures show only the required labels in each label group.

6.5.1 ***Configurations of files within the tracks of a volume***

The various configurations of files that can be formed according to these rules are illustrated in Figure 9. Each box represents a track.

6.5.2 ***Configurations of files in a multi-volume case***

The two configurations of files that can be formed according to these rules are illustrated in Figure 10. Each box represents a volume. The distinction between tracks is not shown. The configurations within the volume are as in Figure 9.

6.5.3 ***End of Track Labels***

If the file extends over the end of a track, the End of Track Label (ETR1) shall follow the last data block on that track and be separated from that data block by a tape mark.

If other end of track labels (ETR2 to ETR9) are used, they shall immediately follow the ETR1 label.

The last label of an end of track label group shall always be followed by a tape mark.

6.5.4 ***Intermediate Start of Track***

Each track of the volume except the first shall commence with a Start of Track Label. This Label shall be immediately followed by the file header label group of the next file section, as specified in **6.5.5**. This label shall not appear at any other place on the track.

6.5.5 ***Continuation file section in a multi-track or multi-volume file***

The first data block of a continuation file section shall be preceded by a beginning of file label group. This includes an exact copy of the last beginning of file label group on the previous track or volume except that the file section number which is on HDR1 is increased by 1 (see **6.4.1**).

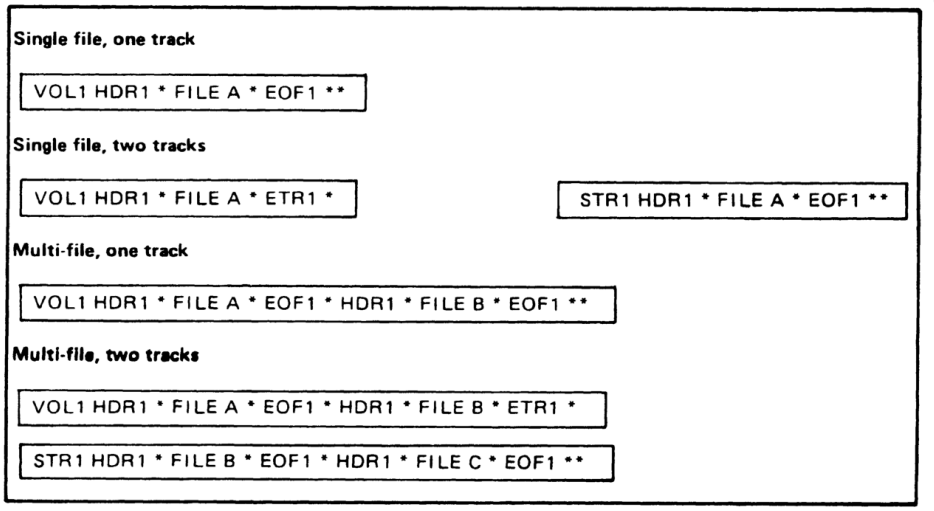

Figure 9 — Single-volume file structures

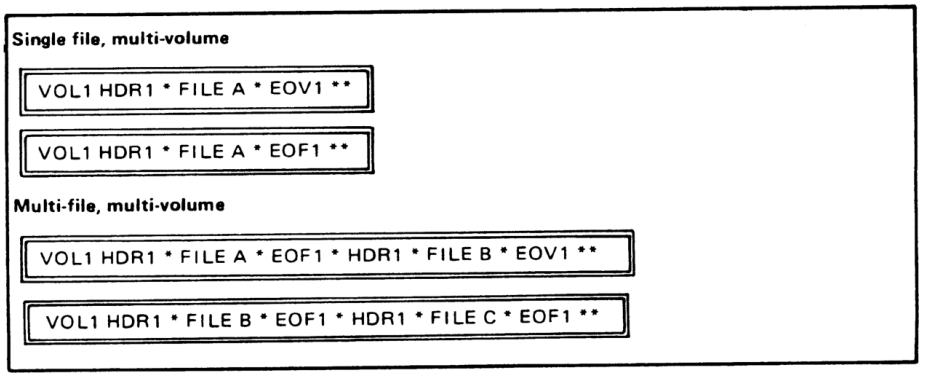

Figure 10 — Multi-volume file structures

6.5.6 *Coincidence of end of file and end of track*

If the end of a file coincides with an end of track, then, unless the system avoids the situation by, for example, erasing the current block, three situations are possible:

6.5.6.1 The end-of-tape marker is recognized whilst the system is writing the last data block of the file. In this case the system will complete writing the data block and close the track as described in **6.5.3**. The file is continued on the next track or volume by writing a Start of Track Label or Volume Header Label, a file header label group (see **6.5.5**), two tape marks and an end of file label group.

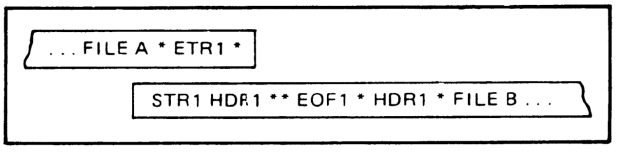

Figure 11 — Empty file section at intermediate start of track

An example of the first case is illustrated in Figure 11.

6.5.6.2 The end-of-tape marker is recognized whilst the system is writing the end of file label group and the file is not the last file of a set. In this case the system will complete the writing of the end of file label group. The beginning of file label group of the next file will then be written followed by an empty file section, and the track will be terminated by an end of track label group. The beginning of file label group will then be rewritten at the start of the next track, following the STR1 label.

This is illustrated in Figure 12.

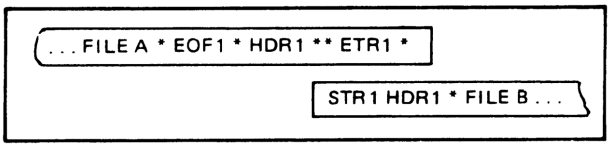

Figure 12 — Empty file section at intermediate end of track

6.5.6.3 The end-of-tape marker is recognized whilst the system is writing the end of file label group and the file is the last file of a set. In this case the system will complete the writing of the end of file label group and the tape mark following it and then close the track with a second tape mark.

6.5.7 ***Coincidence of beginning of file and end-of-tape marker***

If the end-of-tape marker is recognized whilst the system is writing the beginning of file label group, then this group will be followed by an empty file section and the track will be terminated by an end of track label group. The beginning of file label group will then be rewritten at the start of the next track following the STR1 label.

This is illustrated in Figure 12.

6.6 Use of optional labels

The use of any optional label at the end-of-track condition may result in such labels being written past the usable recording area.

6.7 Recording density

The blocks recorded on all volumes containing a file set shall be recorded with the same density.

6.8 By-pass or check-point records

Only the relevant data blocks shall be written on a cassette used for interchange. Since by-pass information and check-point records are considered to be extraneous to the interchange, and no standard means of identification is provided, the recording of by-pass and check-point information is not allowed on cassettes for interchange.

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Publications referred to

See national foreword.

BS 5769-1: 1979
ISO 4341:1978

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