

ECMA  
EUROPEAN COMPUTER MANUFACTURERS ASSOCIATION

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ECMA STANDARD  
for  
PRINTING LINE POSITION  
ON SINGLE LINE DOCUMENTS

November 1968

## BRIEF HISTORY

ECMA TC4 started their standardization work in the field of Optical Character Recognition in June 1961. This work led to the adoption of the standards ECMA-8 (Nominal Character Dimensions of the OCR-A font), ECMA-11 (Alpha-numeric Character Set for OCR-B) and ECMA-15 (Printing Specification for OCR). In order to ensure better information interchange, further work has been undertaken on the arrangement of the information on specific data media. This Standard ECMA-18 is directed to documents bearing a single line of characters recognizable by machine. Further work is in progress on other media.

Adopted on November 29, 1968 by the General Assembly of  
ECMA as Standard ECMA-18.

1. Purpose

The purpose of this Standard is to establish the position of the printing line for documents containing a single line of information to be read by an optical character reader.

2. Scope

2.1 This Standard contains the basic definition and recommendations concerning the position of the printing line. It is applicable for either one size of characters in the printing line or a combination of sizes I, II and III.

2.2 Size IV characters are not included for the following reasons:

2.2.1 Size IV characters have been designed primarily for credit card imprinting applications and existing systems requirements govern the position of the printing line.

2.2.2 It is unlikely that size IV characters will be used with sizes I, II and III in the same printing line. Should this be necessary, consideration must be given to other parameters which are related to specific applications and are not known at the present time.

3. Reference Edge

The reference edge of a document is the bottom edge.

4. Clear Area

The Clear Area (see Note 1) is located at the bottom of the document: it extends over the whole length of the document and has a height of at least 16 mm (5/8"). - (see Fig. 1)

5. Printing Line Position

The different fields which compose the printing line, must all be contained in the Printing Area(s) (see Note 2). The horizontal centerline of the Printing Area(s) is located at 9,6 mm (3/8") from the reference edge; this is independent of the height of the Printing Area(s), (see Fig. 1).

The nominal position of the printing line, (horizontal centerline of the characters), coincides with the horizontal centerline of the Printing Area.

## 6. Printing Area Height

The height of the Printing Area depends upon the font size according to the following table:

Size	Printing Area Height
I	5,8 mm
II	6,2 mm
III	7,2 mm

When the printing line comprises only characters of the same size, the Printing Area height is that for the font size. In some applications it may happen that the character size varies from one field (see Note 3) to another of the Printing Line. In this case the Printing Area of each field will have the height corresponding to the size of its characters. All Printing Areas shall have a common centerline. (See Fig. 2). The values specified for the Printing Area height are obtained taking into account the vertical misalignment and the stroke width tolerances permitted in sections 5.14.2 and 4.5 of the Standard ECMA-15, respectively. A tolerance of 1,6 mm has been added in order to accomodate misalignment among fields resulting from printing and possible guillotining.

## 7. Margins

The right and left hand Margins (see Note 4) must be at least 6 mm (0,25"), measured in the direction parallel to the Reference edge (see Fig. 1).

The Margin from the reference edge, having specified the Printing Area centerline position, depends on the Printing Area height as follows:

Size	Printing Area height	Margin
I	5,8 mm	6,7 mm
II	6,2 mm	6,5 mm
III	7,2 mm	6 mm

(These figures are a consequence of clauses 5 and 6 and not an additional requirement).

NOTES

1. Definition of the Clear Area (Standard ECMA-15, 5.3)

The Clear Area is that region of a document reserved for the OCR characters and the clear space around these characters.

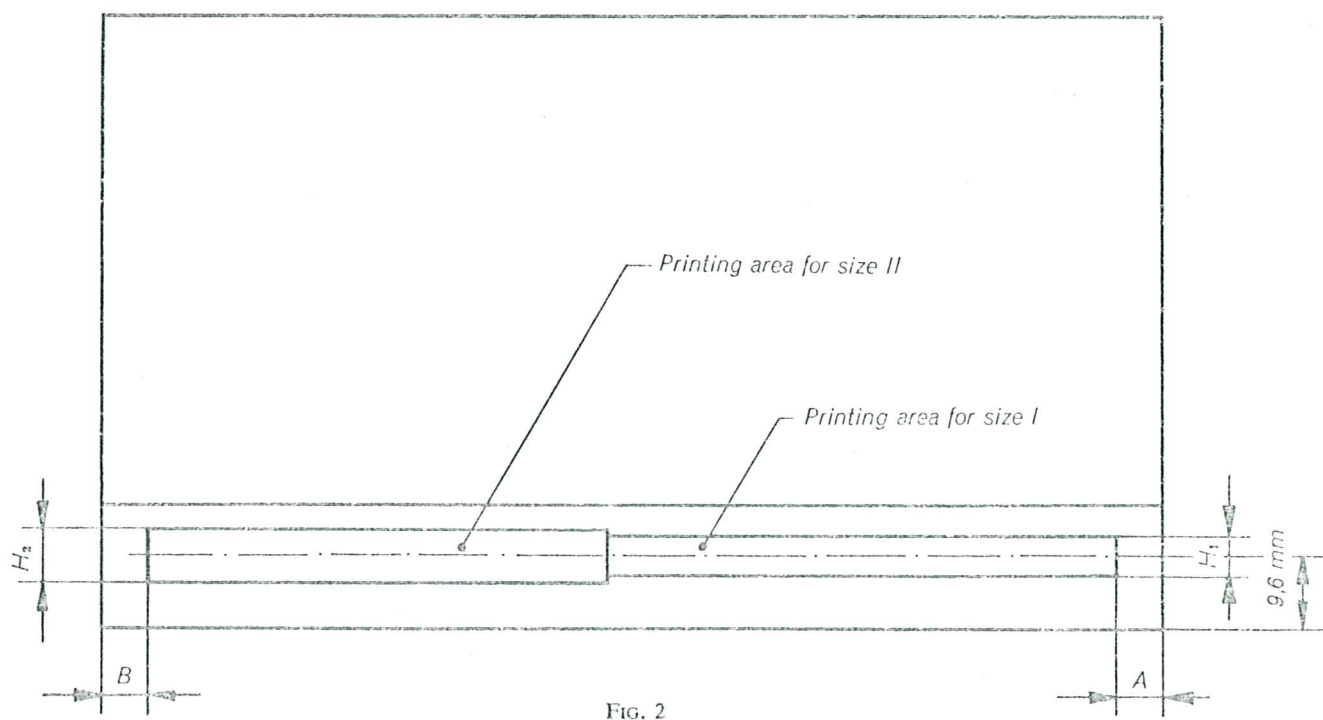
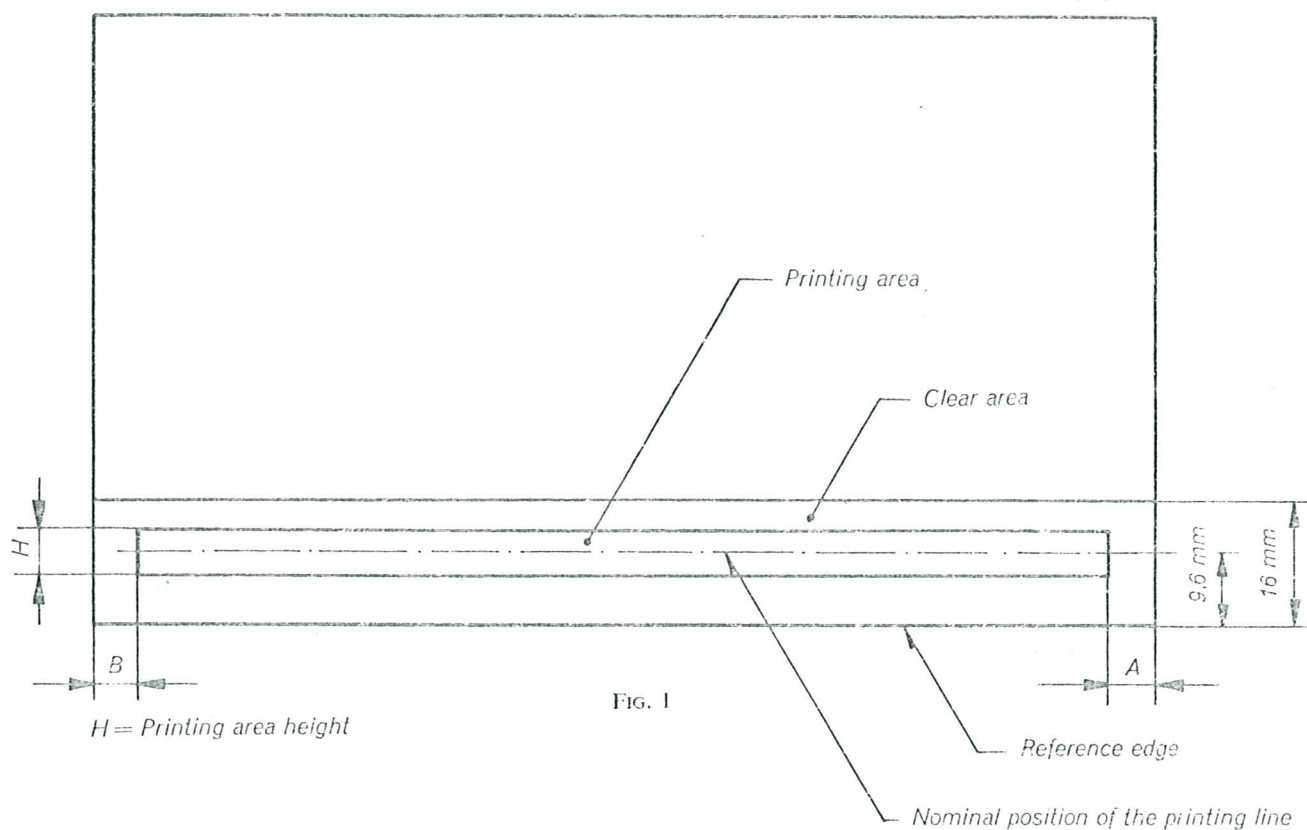
2. Definition of the Printing Area (Standard ECMA-15, 5.4)

The Printing Area is a rectangle inside the clear area, in which only OCR characters are to be printed. The sides of this rectangle must be parallel or perpendicular to a document reference edge. The distance between the corresponding boundaries of the printing area and the clear area should not be less than 2,5 mm (0,1").

3. These specifications do not require a definition of "field" in general terms; the fields which compose the printing line will be specified for each application on an operative basis, the standard gives guidance on how the Printing Area height must be chosen and positioned once the different fields are identified.

4. Definition of the Margin (Standard ECMA-15, 5.5)

The distance between the boundaries of the printing area and any paper edge is called the Margin. A Margin should preferably not be less than 6 mm (0,236"). Where the choice of printing equipment imposes a smaller value, the absolute minimum is 0,36 mm (0,014"). In this case special consideration must be given to the compatibility of the print and the reading equipment.



$A \geq 6 \text{ mm}$

$B \geq 6 \text{ mm}$

$H_1 = \text{Printing area height for size I}$

$H_2 = \text{Printing area height for size II}$