Designation: F 1232 – 98 (Reapproved 2003)

Standard Practice for Generating a Test Pattern for Single-Pass Film Ribbons[1]

This standard is issued under the fixed designation F 1232; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This practice covers the description and method of use of a test pattern for evaluating character yield of a single-pass typewriter or printer ribbon cartridge under continuous printing conditions.

1.2 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*

F 497 Practice for the Use of the Electric and Electronic Typewriter as a Test Instrument[2]

F 909 Terminology Relating to Printers[2]

F 1125 Terminology of Image Quality in Impact Printing Systems[2]

F 1174 Practice for Using a Personal Computer as a Test Instrument[2]

F 1175 Practice for Using the Computer Impact Printout Unit as a Test Instrument for Manifold Comparison[2]

F 1206 Test Method for Evaluating Color Image Output from Color Printers and Copiers[2]

3. Terminology

3.1 See Terminology F 909 for definitions of terms relating to printers.

4. Summary of Practice

4.1 The sample test pattern included in this practice was designed to exercise the primary keyboard functions in approximately the same frequency ratio as they would be used for normal business typing in the English language.

4.2 This practice consists of a test pattern that may be used to determine how many characters a ribbon will produce throughout its life. Testing involves using the intended typewriter or printer and printing through the end of the ribbon.

4.3 With this information the ribbon user can calculate character yield information for competitive comparisons, different cartridge designs, differences between various ribbon ink formulations, and cost per character.

4.4 Character counts are divided into two different test patterns: one for correcting typewriters; one for printers and noncorrecting typewriters.

5. Significance and Use

5.1 The character yield of a ribbon is affected by many factors including the printer/typewriter design and ribbon cartridge design. The end user may wish to evaluate these different machine and ribbon designs to determine the estimated cost of various systems over the anticipated useful life of the equipment. For example, the lowest cost machine may not be the most economical system when the cost per character (cost of supplies) is factored in as part of its total life time cost.

6. Interferences

6.1 The test paper used in testing may impact the general image quality.

6.2 The actual character yield may also be impacted by ribbon length, ribbon advance rate, and character pitch. The ribbon advance rate is controlled by such things as the cartridge ribbon metering design, printer/typewriter design, film base stability, and ribbon slippage.

7. Apparatus

7.1 *Typewriter or Printer*, set to manufacturer's specifications including enough memory, or a robotics device capable of running the test pattern in a repeating sequence until the ribbon is exhausted.

8. Test Pattern

8.1 For correction typewriters, the test pattern has 1951 operations, of these 1299 are printing and 652 are nonprinting. For printers and machines without correcting, there are 1943 operations, of these 1299 are printing and 644 are nonprinting.

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[1] This practice is under the jurisdiction of ASTM Committee F05 on Business Imaging Products and is the direct responsibility of Subcommittee F05.02 on Inked Transfer Imaging Products.

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[2] *Annual Book of ASTM Standards*, Vol 15.09.

The tester will have to determine the appropriate tab settings on their specific equipment which will allow generating the test pattern.

8.1.1 Follow F 497, F 1174, or F 1175 to use typewriter or printer to generate the test pattern in 8.2 through 8.4.

8.2 *Generating the Test Pattern*:

8.2.1 The pattern opens with two carriage returns. Then the first typed line consists of: [space] [space] [tab] [tab] **AHBCHD EHFGHI JHKLHM NHOPHQ RHSTHU VHWXYHZ**

8.2.2 The second typed line consists of: [tab] / [seven spaces] ’ [tab] / [seven backspaces] . [tab] [space] **d** [correction key] **d** [space] **d** [correction key] **d h m** [correction key] **m** [space] **m** [correction key] **m v** [tab] ([carriage return]

8.2.3 The third typed line consists of: [tab] / [eight spaces] ’ [tab] / [six backspaces] . [tab] [space] **d** [correction key] **d** [space] **d** [correction key] **d h m** [correction key] **m** [space] **m** [correction key] **m v** [tab]) [carriage return]

8.2.4 The remaining lines should be entered as illustrated in the test pattern. See Fig. 1.

8.3 Note that the pattern as shown in Fig. 1 is the way a machine without correction memory will type it. On machines with correction memory, noncorrecting typewriters, and printers the second and third lines have this appearance:

/ ’. / **d dhm mv** (
/ ’. / **d dhm mv**)

8.3.1 Other variations can be caused in these two lines by the innovative functions some manufacturers have incorporated into the back space or reverse key. Also, if the test pattern is typed from the memory of a memory typewriter, it is very difficult, and in some cases impossible, to incorporate the operation of the correction key into the memory. This last factor can affect character yield.

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                                AHBCHD EHFGHI JHKLHM NHOPHQ RHSTHU VHWXYHZ
        /       1     / h v                                               (
        /       1     / h v                                               )
  and the real anti towel person Acomfitt seesiuybuh kil-kfrelY5
g  and the real anti towel person Bcomfitt seesiuybuh kil-ifrelZ
og  and the real anti towel person Ccomfitt seesiuybuh kil-emedl
doo  and the real anti towel person Dcomfitt seesiuybuh kil-lfss
 doo  and the real anti towel person Ecomfitt seesiuybu[ kil-gsa
  doo  and the real anti towel person Fcomfitt seesiuybu] kvr-ee
n  dog  and the real anti towel person Gcomfitt seesiuybu= kvr-e
an  dgg  and the real anti towel person Hcomfitt seesiuybu= kvr-
 an  dgg  and the real anti towel person Icomfitt seesiuybu, kvr
t an  dgg  and the real anti towel person Jcomfitt seesiuybu, kv
it an  dgg  and the real anti towel person Kcomfit. seesiuybu, k
 it an  dgg  and the real anti towel person Lcomfit. seesiuybu,
e it an  dgg  and the real anti towel person Mcomfit. seesiuybu,
he it an  dog  and the real anti towel person Ncomfit. seesiuybu,
 he it an  dog  and the real anti towel person Ocomfit. seesiuybu
a he it an  dog  and the real anti towel person Pcomfit. seesiuyb
 " he it an  dog  and the real anti towel person Qcomfit. seesiuy
1 a he it an  dog  and the real anti towel perso, Rcomfit. seesiu
21 " he it an  dog  and the real anti towel perso, Scomfit. seesi
321 a he it an  dch  and the real anti towel perso, Tcomfit. sees
4321 " he it an  dch  and the rea" anti towel perso, Ucomfit. see
54321 a he it an  dch  and the rea" anti towe, perso, Vcomfit. se
654301 " he it an  dch  and the rea" anti towe, perso, Wcomfit. s
7890001 a he it an  dch  and the rea" anti towe, perso, Xcomfit.
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FIG. 1 Sample Test Pattern

8.4 Whether the **[ ]** = ½ ¼ or % is typed depends on which character the manufacturer has decided to put on the machine.

9. Keywords

9.1 character count; character life; character measurement; film ribbons; test pattern; typewriter ribbons