



Standard Practice for Generating a Test Pattern for Single-Pass Film Ribbons¹

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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 Instrument²

F 909 Terminology Relating to Printers²

F 1125 Terminology of Image Quality in Impact Printing Systems²

F 1174 Practice for Using a Personal Computer as a Test Instrument²

F 1175 Practice for Using the Computer Impact Printout Unit as a Test Instrument for Manifold Comparison²

F 1206 Test Method for Evaluating Color Image Output from Color Printers and Copiers²

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. 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:*

¹ This practice is under the jurisdiction of ASTM Committee F-05 on Business Image Products and is the direct responsibility of Subcommittee F05.02 on Ink Transfer Imaging Products.

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