



Designation: E 2290 – 07

## Standard Guide for Examination of Handwritten Items<sup>1</sup>

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### 1. Scope

1.1 This guide provides procedures that should be used by forensic document examiners (E 444) for examinations and comparisons involving handwritten items and related procedures.

1.2 These procedures are applicable whether the examination and comparison is of questioned and known items or of exclusively questioned items.

1.3 These procedures include evaluation of the sufficiency of the material (questioned, or known, or both) available for examination.

1.4 The particular methods employed in a given case will depend upon the nature of the material available for examination.

1.5 This guide may not cover all aspects of unusual or uncommon examinations of handwritten items.

1.6 *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 requirements prior to use.*

### 2. Referenced Documents

- 2.1 *ASTM Standards*:<sup>2</sup>
- E 444 Descriptions of Scope of Work Relating to Forensic Document Examiners
  - E 1658 Terminology for Expressing Conclusions of Forensic Document Examiners
  - E 1732 Terminology Relating to Forensic Science

<sup>1</sup> This guide is under the jurisdiction of ASTM Committee E30 on Forensic Sciences and is the direct responsibility of Subcommittee E30.02 on Questioned Documents.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

E 2195 Terminology Relating to the Examination of Questioned Documents

### 3. Terminology

3.1 For definitions of terms in this guide, refer to Terminologies E 1732 and E 2195.

#### 3.2 Definitions:

3.2.1 *known, n/adj*—of established origin associated with the matter under investigation. E 1732

3.2.2 *questioned, n/adj*—associated with the matter under investigation about which there is some question, including, but not limited to, whether the questioned and known items have a common origin. E 1732

#### 3.3 Definitions of Terms Specific to This Standard:

3.3.1 *absent character, n*—a character or character combination which is present in one body of writing but is not present (for example, does not have a corresponding character) in another body of writing.

3.3.2 *character, n*—any language symbol (for example, letter, numeral, punctuation mark, or other sign), other symbol, or ornament.

3.3.3 *characteristic, n*—a feature, quality, attribute, or property of writing.

3.3.4 *comparable, n/adj*—pertaining to handwritten items that contain the same type(s) of writing and similar characters, words, and combinations. Contemporaneity and writing instruments may also be factors.

3.3.5 *distorted writing, n*—writing that does not appear to be, but may be natural. This appearance can be due to either voluntary factors (for example, disguise, simulation) or involuntary factors (for example, physical condition of the writer, writing conditions).

3.3.6 *handwritten item, n*—an item bearing something written by hand (for example, cursive writing, hand printing, signatures).

NOTE 1—As used in this standard “handwriting” and “handwritten” are generic terms. Writing is generally, but not invariably, produced using the hand, and may be the result of some other form of direct manipulation of a writing or marking instrument by an individual.

3.3.7 *individualizing characteristics, n*—marks or properties that serve to uniquely characterize writing.

3.3.7.1 *Discussion*—Both class characteristics (marks or properties that associate individuals as members of a group) and individual characteristics (marks or properties that differentiate the individual members in a group) are individualizing characteristics.

3.3.8 *item, n*—an object or quantity of material on which a set of observations can be made.

3.3.9 *natural writing, n*—any specimen of writing executed without an attempt to control or alter its usual quality of execution.

3.3.10 *range of variation, n*—the accumulation of deviations among repetitions of respective handwriting characteristics that are demonstrated in the writing habits of an individual. (See *variation*, 3.3.15).

3.3.11 *significant difference, n*—an individualizing characteristic that is structurally divergent between handwritten items, that is outside the range of variation of the writer, and that cannot be reasonably explained.

3.3.12 *significant similarity, n*—an individualizing characteristic in common between two or more handwritten items.

3.3.13 *sufficient quantity, n*—that amount of writing required to assess the writer's range of variation, based on the writing examined.

3.3.14 *type of writing, n*—refers to hand printing, cursive writing, numerals, symbols, or combinations thereof, and signatures.

3.3.15 *variation, n*—those deviations among repetitions of the same handwriting characteristic(s) that are normally demonstrated in the habits of each writer.

3.3.15.1 *Discussion*—Since variation is an integral part of natural writing, no two writings of the same material by the same writer are identical in every detail. Within a writer's range of variation, there are handwriting habits and patterns that are repetitive and similar in nature. These repetitive features give handwriting a distinctive individuality for examination purposes. Variation can be influenced by internal factors such as illness, medication, intentional distortion, etc. and external factors such as writing conditions and writing instrument, etc.

## 4. Significance and Use

4.1 The procedures outlined here are grounded in the generally accepted body of knowledge and experience in the field of forensic document examination. By following these procedures, a forensic document examiner can reliably reach an opinion concerning whether two or more handwritten items were written by the same person(s).

NOTE 2—The phrase “written by the same person(s)” refers to physical generation of the writing, not to intellectual ownership of the content.

## 5. Interferences

5.1 Items submitted for examination may have inherent limitations that can interfere with the procedures in this Guide. Limitations should be noted and recorded.

5.2 Limitations can be due to submission of non-original documents, limited quantity or comparability, or condition of the items submitted for examination. Other limitations can

come from the quantity or comparability of the writing submitted, and include absent characters, dissimilarities, or limited individualizing characteristics. Such features are taken into account in this guide.

5.3 The results of prior storage, handling, testing, or chemical processing (for example, for latent prints) may interfere with the ability of the examiner to see certain characteristics. Whenever possible, document examinations should be conducted prior to any chemical processing. Items should be handled appropriately to avoid compromising subsequent examinations (for example, with clean cloth gloves).

5.4 Consideration should be given to the possibility that various forms of simulations, imitations, and duplications of handwriting can be generated by computer and other means.

## 6. Equipment and Requirements

6.1 Appropriate light source(s) of sufficient intensity to allow fine detail to be distinguished.

NOTE 3—Natural light, incandescent or fluorescent sources, or fiber optic lighting systems are generally utilized. Transmitted lighting, side lighting, and vertical incident lighting have been found useful in a variety of situations.

6.2 Magnification sufficient to allow fine detail to be distinguished.

6.3 Other apparatus as appropriate.

6.4 Imaging or other equipment for recording observations as required.

6.5 Sufficient time and facilities to complete all applicable procedures.

## 7. Procedure

7.1 All procedures shall be performed when applicable and noted when appropriate. These procedures need not be performed in the order given.

7.2 Examinations, relevant observations, and results shall be documented.

7.3 At various points in these procedures, a determination that a particular feature is not present or that an item is lacking in quality or comparability may indicate that the examiner should discontinue or limit the procedure(s). It is at the discretion of the examiner to discontinue the procedure at that point and report accordingly or to continue with the applicable procedures to the extent possible. The reasons for such a decision shall be documented.

7.4 Determine whether the examination is a comparison of questioned writing to known writing or a comparison of questioned writing to questioned writing.

7.5 Determine whether the questioned writing is original writing. If it is not original writing, request the original.

NOTE 4—Examination of the original questioned writing is preferable.

7.5.1 If the original is not submitted, evaluate the quality of the best available reproduction to determine whether the significant details of the writing have been reproduced with sufficient clarity for comparison purposes and proceed to the extent possible. If the writing has not been reproduced with sufficient clarity for comparison purposes, discontinue these procedures and report accordingly.