

# EXHIBIT 1

# EXHIBIT 1

# EXHIBIT 1



**BLANCO & Associates Inc.**  
*Forensic Document Examiners*

**San Francisco Office**

55 New Montgomery Street, Suite 712  
San Francisco, CA 94105  
Phone (415) 618-0068

**Washington D.C. Office**

1629 K Street N.W. Suite 300  
Washington, DC 20006  
Phone (202) 821-1822

**Los Angeles Office**

655 N. Central Ave 17<sup>th</sup> FL  
Glendale, CA 91203  
Phone (818) 545-1155

**CURRICULUM VITAE of JAMES A. BLANCO**

**AFFILIATIONS:**

- Member: American Society for Testing and Materials (ASTM)  
Participant: Subscribe to Proficiency Testing by the Collaborative Testing Services Inc.  
**Formally** tested twice a year (controlled tests with known results) by the Collaborative Testing Services, Inc.—**Test results reveal a ZERO PERSONAL EXAMINER ERROR RATE**  
Participant: in ST<sup>2</sup>AR Network—Skill-Task Training Assessment & Research

**PROFESSIONAL ACHIEVEMENTS:**

- Testified as an expert in over **200** trials.
- Provided over **7000** expert opinions.

**PROFESSIONAL HISTORY:**

- 6/88 **Blanco & Associates, Inc.**  
to Title – Forensic Document Examiner / Examiner of Questioned Documents  
Present Duties - Examination and comparison of handwriting and mechanical impressions for the purpose of suspect identification or elimination. Expert witness testimony. Presentations of Forensic Document Examinations pertaining to civil and criminal litigation.
- Since 1998** Exclusive Forensic Document Expert used by the California Secretary of State's office for their voting fraud cases.
- 11/94 **California Department of Justice**  
to Bureau of Forensic Services  
9/96 4949 Broadway - Sacramento, CA 95820  
Laboratory Accreditation - This Laboratory is accredited by the American Society of Crime Laboratory Directors (ASCLAD)  
Title - Examiner of Questioned Documents  
Duties - Examination and comparison of handwriting and mechanical impressions for the purpose of suspect identification or elimination. Expert witness testimony. Participated in the proficiency testing program and peer review required by the ASCLAD Accreditation Board.

**PROFESSIONAL HISTORY (Continued):**

- 1/92            **U.S. Treasury Department**  
to              Federal Bureau of Alcohol, Tobacco and Firearms  
9/94            Western Regional Forensic Science Laboratory  
355 North Wiget Lane, Walnut Creek, California 94598  
Title - Document Examiner  
Duties- Examination and comparison of handwriting and mechanical impressions for the purpose of suspect identification or elimination in criminal investigations in the Western States. Testified as prosecution expert witness in Oklahoma, Texas, New Mexico, Arizona, Alaska and California. Participated in the proficiency testing program and peer review of the American Society of Crime Laboratory Directors.
- 1/89            **Sacramento County Sheriff - Detectives Division**  
to              711 G. Street Room 308 - Sacramento, California 95814  
1/92            Title - Questioned Document Examiner (on County contract)  
Duties- Examined case work for the various Bureaus of the Sacramento County Sheriff's department including report writing and expert witness court testimony. Also responded to requests by local Judges and Deputy District Attorneys to perform examinations, report on findings and testify.
- 6/85            **Completed two years of apprenticeship training** in forensic documents under  
to              T.H. Pascoe who worked for the California Department of Justice in their  
1/89            Questioned Document Section for 30 years.

**TECHNICAL TRAINING COURSES:**

ST<sup>2</sup>AR Network—Skill-Task Training Assessment & Research,  
Canon Photocopier, Facsimile and New Technology Workshop  
Canon USA training center in Atlanta Georgia April 28-29, 2008

Forensics Photoshop course,  
EEI Communications, San Francisco CA December 15-16, 2006

Printing Process Examinations, Infrared Examinations,  
American Board of Forensic Document Examiners Workshop, Las Vegas, November 7-10 2005

Altered Identification Documents, sponsored by the California State Department of Justice  
Criminalistics Institute March 1995

Fundamentals of Document Examinations For Laboratory Personnel,  
FBI Academy, Quantico, Virginia- July 12-23 1993

Symposium on Fluorescence Techniques in Questioned Documents, sponsored by the California State Department of Justice Criminalistics Institute Feb. 1992

Paper Knowledge Workshop, by Mead Paper Corp., Denver, Colorado Oct. 1992

## **ACCOMPLISHMENTS:**

### **Qualified as an Expert in Federal, Superior and Court Martial Courts**

#### **Publications:**

**Journal:** Identifying Documents Printed by Dot Matrix Computer Printers. Forensic Science International, Elsevier Scientific Publishers Ireland Ltd.

#### **Published Books:**

- \* Business Fraud- Know It and Prevent It, Humanomics Publishing, 2001
- \* Identity Theft Prevention, (self published, 2001)

#### **Speaker- Presentations given to:**

- \* Association of Certified Fraud Specialists- Sacramento, CA July 12<sup>th</sup>, 2011  
Eight hour block of training re: Forensic Document Evidence and investigations
- \* Association of Certified Fraud Specialists- National Fraud Conference, Dallas, May 2011  
Forged Documents In An Electronic World
- \* Association of Forensic Document Examiners Annual Conference, Phoenix AZ, October 2010
- \* National Association of Document Examiners Annual Conference, Portland, OR, May 2010
- \* Association of Certified Fraud Specialists- National Fraud Conference, San Diego, Oct. 2009  
Forged Documents In An Electronic World
- \* The Southwestern Association of Forensic Document Examiners:  
Identifying Documents Printed by Dot-Matrix Computer Printers  
Tucson, Arizona - April, 1989.  
Distinguishing Features of Color Laser Copiers  
Long Beach, CA - October, 1990.  
A Case Study in Forensic Ethics Las Vegas, Nevada - April, 1991.  
Counterfeited Documents Phoenix, Arizona - October, 1991.  
Photocopied Tracings San Diego, CA - April, 1992
- \* The American Society of Questioned Document Examiners:  
Identifying Documents Printed by Dot-Matrix Computer Printers, Orlando, Florida- August, 1991  
New Trends in Xerographic Technology Milwaukee, Wisconsin August, 1992

**Numerous additional Lectures and Presentations** given to State and Federal Law Enforcement, Legal, Banking and Business organizations.

**Advisor to POST** (California Commission on Peace Officer Standards and Training): As a subject matter expert in Forensic Documents, I was the only Document Examiner invited to San Diego to serve on the curriculum committee of the California Commission on POST, to design a Fraud/Questioned Document Course.

#### **EDUCATION:**

Bachelor of Arts, 1975, California State University, Sacramento, CA  
Master of Divinity, 1978, Western Theological Seminary, Portland, OR

**EXHIBIT 2**

**EXHIBIT 2**

**EXHIBIT 2**

# "WORK FOR HIRE" CONTRACT

## SECTION 1- GENERAL PROVISIONS

### 1. Definitions

The following terms have the meaning specified when used herein:

PURCHASER - Paul Ceglia

CONTRACTOR/SELLER - Mark Zuckerberg, his agents, employees, suppliers, or sub-contractors, furnishing materials, equipment, or services.

CUSTOMER - StreetFax LLC the entity contracting for construction or other services from the Purchaser or which the goods and/or services provided hereunder are for incorporation into the work or are required to facilitate completion of Purchaser's contract with such entity.

PRIME CONTRACT - This contract between Purchaser and Seller.

### 2. Entire Agreement

The contract between the Purchaser and Seller as a Purchase agreement and "work made for hire" reflects two separate business ventures, the first being for the work to be performed directly for the StreetFax Database and the Programming language to be provided by Seller.

Second it is for the continued development of the software, program and for the purchase and design of a suitable website for the project Seller has already initiated that is designed to offer the students of Harvard university access to a website similar to a live functioning yearbook with the working title of "The Face Book"

It is agreed that Purchaser will own a half interest (50%) in the software, programming language and business interests derived from the expansion of that service to a larger audience.

### 3. Payment Terms

No insurance or premium charges or price increases will be allowed unless authorized by Purchaser in writing. No increase in price from that stated on the face hereof will be considered throughout the duration of the order.

The Agreed upon Cost that the Seller and the Buyer have agreed upon are as follows: Buyer agrees to pay the seller the Sum of \$1000 a piece for the work to be performed for Streetfax and \$1,000 for the work to be performed for "The Page Book".

Late fees are agreed to be a 5% deduction for the seller if the project is not completed by the due date and an additional 1% deduction for each day the project is delayed beyond that point.

The agreed upon project due date for the StreetFax software is May 31, 2003.

The agreed upon completion for the expanded project with working title "The Face Book" shall be January 1 2004 and an additional 1% interest in the business will be due the buyer for each day the website is delayed from that date.

Additional funds may be provided for either project on an as needed basis at the sole discretion of the Buyer.

### 4. Changes

a) BY PURCHASER - Purchaser agrees that no further revision shall be implemented until or unless approved by the seller. Those revisions shall be transmitted for written approval to seller.

b) BY SELLER - The Seller agrees that no further revision shall be implemented until or unless approved by Buyer. Those revisions shall be transmitted for written approval to the Street Fax Purchasing Department.

### 5. Purchaser's Property/Seller's Responsibility

For the StreetFax database Buyer agree to pay for and maintain the cost of upkeep for the servers needed for it's operation.

For "The Face Book" Seller agrees to maintain and act as the sites webmaster and to pay for all domain and hosting expenses from the funds received under this contract, and Seller agrees that he will maintain control of these services at all times.

Data, drawings, tooling, patterns, materials, specifications, and any other items or information supplied to Seller under this order are the property of the Purchaser and must be returned upon completion of this order. Such items or information are to be used solely in the performance of the work by the seller and shall not be used or disclosed for any other purpose whatsoever without Purchaser's prior express written consent.

### 6. Settlement of Controversies

In the event that this purchase order is for materials or equipment which is excluded from this Prime Contract, and in the case of disputes between the Purchaser and the Customer or between the Purchaser and the Seller regarding materials or equipment to be furnished by the Seller, the Seller agrees to be bound to the same extent that the Purchaser is bound by the terms of the Prime Contract, and by any and all decisions and determinations made thereunder, provided that the Seller shall have the right to participate in the settlement of any dispute to the extent that the Seller will be affected thereby.

No interest shall accrue on any payment(s) otherwise due the Seller, which is withheld or delayed as a result of any such dispute, except to the extent that the Purchaser is ultimately paid interest on monies due the Seller. The Seller shall not be held liable if the Seller follows instructions of the Purchase and it is later determined that the Purchaser's instructions were not in compliance with the terms and specifications of the Prime Contract. Pending final disposition of a dispute hereunder, the Seller shall carry on the work unless otherwise agreed in writing by the purchaser.

In all instances the final authority should rest with the final Specifications.

### 7. Patent Indemnity

Purchaser hold seller harmless for an infringement sellers work may constitute on patents held by and third party that result from the direct request for the work made by purchaser in this "work made for hire" agreement. The Seller hereby agrees to be responsible for all claims against the Purchaser of the Customer for alleged infringement of patents by reason of the Purchaser's or Customer's possession, use, or sake of any materials or equipment furnished hereunder by the Seller or by reason of the performance of any work hereunder by the Seller. The Seller agrees to defend at it's sole expense all suits against the Purchaser and/or the Customer and to save and hold harmless the Purchaser and the Customer from and against all costs, expensed, judgements, and damages of any kind which the Purchaser or the Customer may be obliged to pay or incur by reason of any such alleged or actual infringement of a patent or patents. The Purchaser and the Customer agree to render whatever assistance it reasonable can in the way of information and access to records for the defense of any such suit. This indemnity shall not extend to alleged or actual infringements resulting from the Seller's compliance with the Purchaser's or Customers's design, instructions, processes, or formulas provided, however, that the Seller agrees to be responsible if it is reasonable to assume the the Seller should have been aware of a possible alleged or actual infringement resulting from the Purchaser's or Customer's design, instructions, processes, or formulas and fails to notify the Purchasers of such possibility.

#### 8. Assignment of Subcontracting

Neither this order nor any rights, obligations, or monies due hereunder are assignable or transferable (as security for advances or otherwise) without the Purchaser's prior written consent, and except as to purchases of raw materials or standard commercial articles or parts, the Seller shall not subcontract any major portion of the work encompassed by this order without the Purchaser's prior written approval. The Purchaser shall not be required to recognize any assignment or subcontract made without its prior written consent.

The buyer accepts that there will be two other subcontractors working on this project their work will be accepted provided a noncompete and "work made for hire agreement" are in place.

#### 9. Proprietary Rights

It is acknowledged that this is a work made for hire agreement and that all Intellectual property rights or patent rights are that of StreetFax Inc. All code in portion or in its complete form remain the property of StreetFax Inc. If the items to be supplied hereunder have been designed in accordance with specifications or data furnished or originated by the Purchaser or its Customer, such items shall not be reproduced except with the approval of the Purchaser and, as applicable, its Customer and all drawings, photographs, data, software, and other written material or information supplied in connection therewith shall at all times remain the property of the Purchaser or its Customer and be returned promptly upon request at the completion, termination or cancellation of this order. In the event that StreetFax defaults on its payment terms rights would be granted to seller.

#### 10. Termination

A. DEFAULT - The Purchaser may terminate this order or any part thereof by written notice if the Seller:

- a) fails to make deliveries or to complete performance of its obligations hereunder within the time specified or in accordance with the agreed schedules unless such failure is due to acts of God, strike or other causes which are beyond the control of the Seller.
- b) Fails to comply with the terms and conditions of the purchase order and does not cure such failure within a period of ten (10) calendar days after written notice thereof.
- c) Makes an assignment for the benefit of creditors without prior written consent of the Purchaser, becomes insolvent or subject to proceedings under any law relating to bankruptcy, insolvency, or the relief of debtors.

Should the Purchaser elect to terminate for default, the Purchaser may take possession of all or any of the items to be supplied hereunder which are in the Seller's possession without regard to stage of completion and may complete or cause the work to be completed on such items or may manufacture or procure similar items. Any additional costs or expense incurred by the Purchaser over and above the original purchase price from the Seller plus freight costs shall be for the account of the Seller.

In all events, the Purchaser shall not be or become liable to the Seller or any third party claiming through or under the Seller for any portion of the price of any items that Purchaser elects not to accept following notice of termination for default.

#### 11. Liens

The Seller agrees to deliver the items to be supplied hereunder free and clear of all liens, encumbrances, and claims of laborers or material men and the Purchaser may withhold payment pending receipt of evidence in form and substance satisfactory to it of the absence of such items, claims and encumbrances.

#### 12. Governing Law

This Purchase Order and any material relating thereto shall be governed by the laws of the state in which the Purchaser's office that issues the order is located.

#### 13. Recovery of Damages

If the Seller should recover any damages as a result of antitrust violations in any manner due to price fixing on the part of another manufacturer or Seller, the Seller shall pay over to the Purchaser any damages the Purchaser has suffered as a result of the same price fixing within a reasonable time after the damages are recovered by the Seller.

#### 14. Notice of Labor Disputes

- a) Whenever the Seller has knowledge that any actual or potential labor dispute is delaying or threatens to delay the timely performance of this order, the Seller shall immediately give notice thereof, including all relevant information with respect thereto, to the Purchaser.
- b) The Seller shall insert the substance of this clause including this paragraph (b) in any sub-tier supply agreement hereunder as to which a labor dispute may delay the timely performance of this order except that each such sub-tier supply agreement shall provide that in the event its timely performance is delayed or threatened by delay by an actual or potential labor dispute, the sub-tier Seller shall immediately notify its next higher tier Seller or Sellers, as the case may be, of all relevant information with respect to such dispute.

#### 15. Indemnity Requirements for Contractors/Seller

Contractor/Vendor shall defend, indemnify and save Street Fax from any and all claims, suits, losses, damages, or expenses, whether caused or contributed to by the negligence of Street Fax, its agents, or employees, or otherwise, on account of injuries to or death of any and all persons whomsoever, including the Contractor/Vendor, subcontractors, employees of Contractor/Vendor, the subcontractor, and of Street Fax and any and all damage to property to whomsoever belonging, including property owned by, rented to, or in the care, custody, or control of the parties hereto arising or growing out of, or in any manner connected with the work performed under this contract, or caused or occasioned, in whole or in part by reason of or arising during the presence of the person or of the property of Contractor/Vendor, subcontractors, their employees, or agents upon or in proximity to the property of Street Fax Notwithstanding the foregoing, nothing herein contained is to be construed as an indemnification against the sole negligence of Street Fax.

#### 16. Publicity

Seller shall not publish photographs or articles, give press releases or make speeches about or otherwise publicize the existence or scope of this Purchase Order, or any generalities or details about this Purchase Order without first obtaining the written consent of Buyer.

#### 17. Seller's Disclosure

Any information relating to the Seller's designs, manufacturing processes or manufactured products which the Seller may disclose to the Buyer in connection with the performance of the contract may be used by the Buyer for any purpose relating to the contract and to its performance without liability therefor to the Seller.

#### 18. General Notes

Seller shall reference this purchase order number on all documents and/or correspondence related to this order.

The signatures below will execute this contract.

Buyer - Paul Ceglia, StreetFax

Seller - Mark Zuckerberg

*Mark Zuckerberg* 04/28/03

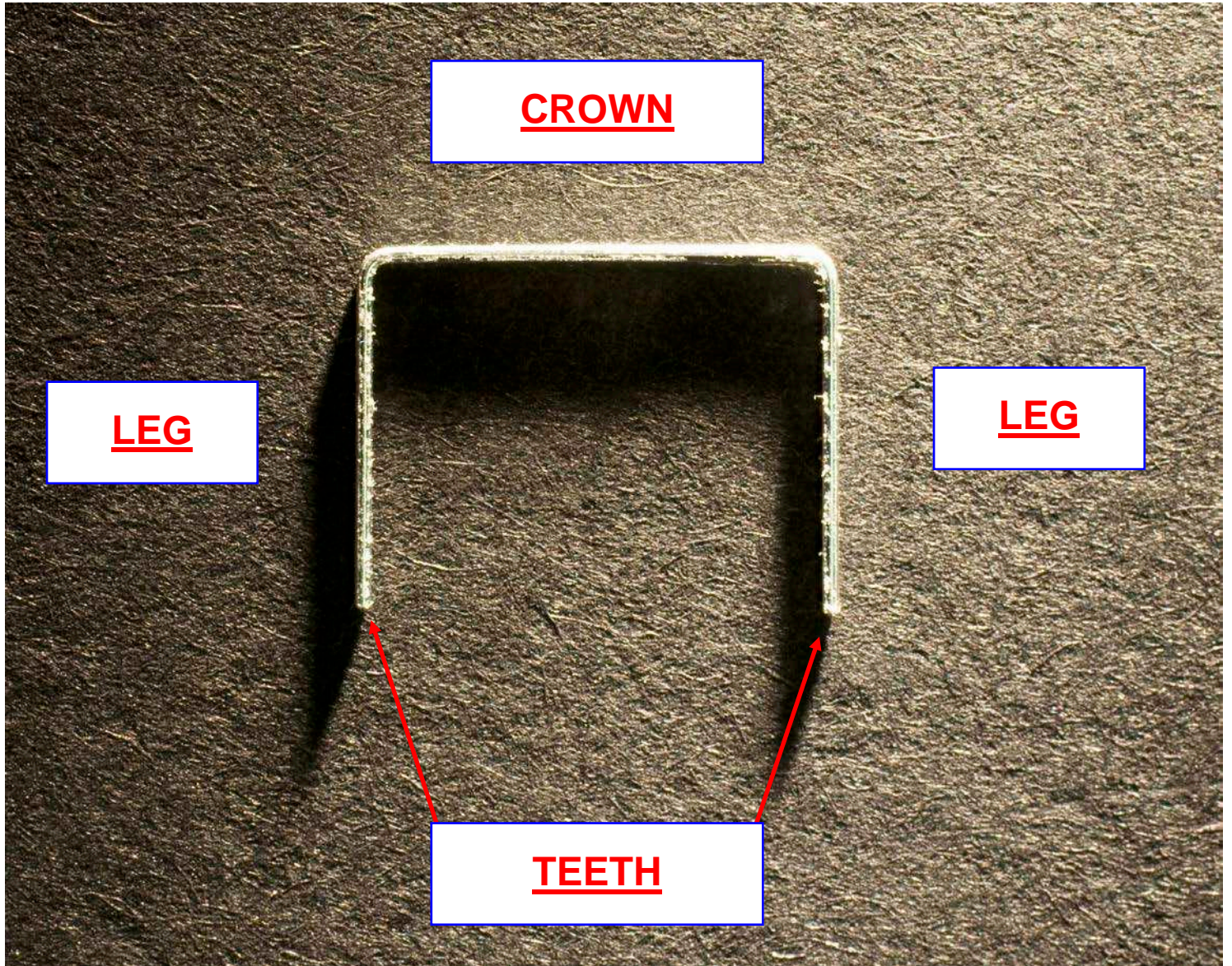
**EXHIBIT 3**

**EXHIBIT 3**

**EXHIBIT 3**



# Anatomy of a staple



**EXHIBIT 4**

**EXHIBIT 4**

**EXHIBIT 4**

*Second Edition*

# Scientific Examination of Questioned Documents

*Edited by*

Jan Seaman Kelly

Brian S. Lindblom



Taylor & Francis  
Taylor & Francis Group

Boca Raton London New York

---

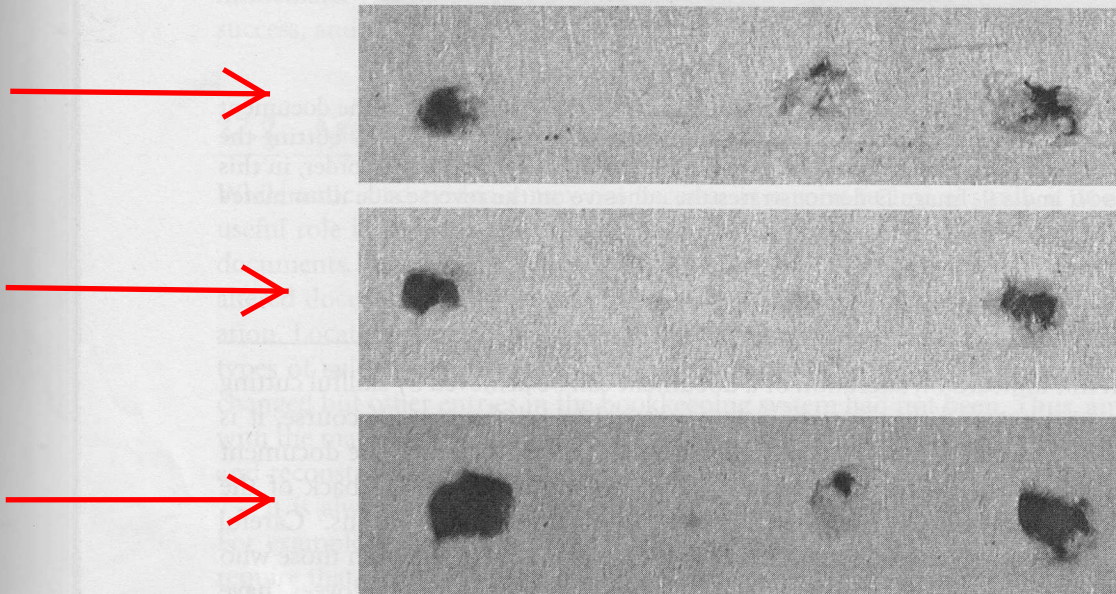
A CRC title, part of the Taylor & Francis imprint, a member of the  
Taylor & Francis Group, the academic division of T&F Informa plc.

## 27.4 Interlineations and Additions

Fraud can be committed just as effectively by addition as by subtraction. The insertion of a modifying clause or sentence may completely change the meaning of a document in as thorough a manner as the erasure of a key portion. The skill with which these modifications are inserted varies from case to case, but as with erasures, effective methods have been developed by which many fraudulent interlineations or additions are revealed.

Obviously, the crude insert of some important clause between the lines or crowded along a margin immediately arouses suspicion. However, many additions are carefully worked into the form of the document when very convenient space either within it or immediately above the signature was provided by careless preparation. When these insertions are skillfully done, they may pass unnoticed by the casual observer, but still, these inconspicuous manipulations can be revealed by physical faults that are disclosed through proper techniques and study.

To disclose that an insertion or addition has been made may involve an extensive study of the document as a whole. Many of its elements, which have been discussed in earlier sections, assume special importance. The lack of uniformity of ink; the work of more than one pen or output device; crowding, uneven margins, or different spacing algorithms of a modifying section, if printed; evidence of the insertion of pages through study of the paper and fastening devices (Figure 27.7); sharp variation in handwriting; and any of a score of other factors individual to the problem at hand may point out the insertion. There is, however, one other sign that points conclusively to the fact that the document was not



**Figure 27.7** The insertion of a sheet of paper is determined by the examination of the staple holes. The top image is from the first page, the middle from the second, and the bottom from the third. Notice the additional perforation between the two main staple holes (top and bottom images). It was created when the end of the staple punched through the back of the sheets. The perforation is not found on the second page, providing evidence that it was not in place at the time the original stapling occurred.

**EXHIBIT 5**

**EXHIBIT 5**

**EXHIBIT 5**



# Standard Terminology for Expressing Conclusions of Forensic Document Examiners<sup>1</sup>

This standard is issued under the fixed designation E1658; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 This terminology is intended to assist forensic document examiners in expressing conclusions or opinions based on their examinations.

1.2 The terms in this terminology are based on the report of a committee of the Questioned Document Section of the American Academy of Forensic Science that was adopted as the recommended guidelines in reports and testimony by the Questioned Document Section of the American Academy of Forensic Science and the American Board of Forensic Document Examiners.<sup>2</sup>

## 2. Referenced Documents

2.1 *ASTM Standards*:<sup>3</sup>

**E444** Guide for Scope of Work of Forensic Document Examiners

## 3. Significance and Use

3.1 Document examiners begin examinations from a point of neutrality. There are an infinite number of gradations of opinion toward an identification or toward an elimination. It is in those cases wherein the opinion is less than definite that careful attention is especially needed in the choice of language used to convey the weight of the evidence.

3.2 Common sense dictates that we must limit the terminology we use in expressing our degrees of confidence in the evidence to terms that are readily understandable to those who use our services (including investigators, attorneys, judges, and jury members), as well as to other document examiners. The expressions used to differentiate the gradations of opinions should not be considered as strongly defined “categories”. These expressions should be guidelines without sharply defined boundaries.

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

Current edition approved Aug. 15, 2008. Published October 2008. Originally approved in 1995. Last previous edition approved in 2004 as E1658 – 04. DOI: 10.1520/E1658-08.

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

<sup>3</sup> McAlexander T. V., Beck, J., and Dick, R., “The Standardization of Handwriting Opinion Terminology,” *Journal of Forensic Science*, Vol. 36, No. 2, March 1991, pp. 311–319.

3.3 When a forensic document examiner chooses to use one of the terms defined below, the listener or reader can assume that this is what the examiner intended the term to mean. To avoid the possibility of misinterpretation of a term where the expert is not present to explain the guidelines in this standard, the appropriate definition(s) could be quoted in or appended to reports.

3.4 The examples are given both in the first person and in third person since both methods of reporting are used by document examiners and since both forms meet the main purpose of the standard, that is, to suggest terminology that is readily understandable. These examples should not be regarded as the only ways to utilize probability statements in reports and testimony. In following any guidelines, the examiner should always bear in mind that sometimes the examination will lead into paths that cannot be anticipated and that no guidelines can cover exactly.

3.5 Although the material that follows deals with handwriting, forensic document examiners may apply this terminology to other examinations within the scope of their work, as described in Guide E444, and it may be used by forensic examiners in other areas, as appropriate.

3.6 *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 limitations prior to use.*

## 4. Terminology

4.1 *Recommended Terms*:

**identification (definite conclusion of identity)**—this is the highest degree of confidence expressed by document examiners in handwriting comparisons. The examiner has no reservations whatever, and although prohibited from using the word “fact,” the examiner is certain, based on evidence contained in the handwriting, that the writer of the known material actually wrote the writing in question.

*Examples*—It has been concluded that John Doe wrote the questioned material, or it is my opinion [or conclusion] that John Doe of the known material wrote the questioned material.

**strong probability (highly probable, very probable)**—the evidence is very persuasive, yet some critical feature or quality is missing so that an *identification* is not in order;

however, the examiner is virtually certain that the questioned and known writings were written by the same individual.

*Examples*—There is *strong probability* that the John Doe of the known material wrote the questioned material, or it is my opinion (or conclusion or determination) that the John Doe of the known material *very probably* wrote the questioned material.

DISCUSSION—Some examiners doubt the desirability of differentiating between **strong probability** and **probable**, and certainly they may eliminate this terminology. But those examiners who are trying to encompass the entire “gray scale” of degrees of confidence may wish to use this or a similar term.

**probable**—the evidence contained in the handwriting points rather strongly toward the questioned and known writings having been written by the same individual; however, it falls short of the “virtually certain” degree of confidence.

*Examples*—It has been concluded that the John Doe of the known material probably wrote the questioned material, or it is my opinion (or conclusion or determination) that the John Doe of the known material *probably* wrote the questioned material.

**indications (evidence to suggest)**—a body of writing has few features which are of significance for handwriting comparison purposes, but those features are in agreement with another body of writing.

*Examples*—There is evidence which *indicates* (or *suggests*) that the John Doe of the known material may have written the questioned material but the evidence falls far short of that necessary to support a definite conclusion.

DISCUSSION—This is a very weak opinion, and a report may be misinterpreted to be an identification by some readers if the report simply states, “The evidence *indicates* that the John Doe of the known material wrote the questioned material.” There should always be additional limiting words or phrases (such as “may have” or “but the evidence is far from conclusive”) when this opinion is reported, to ensure that the reader understands that the opinion is weak. Some examiners doubt the desirability of reporting an opinion this vague, and certainly they cannot be criticized if they eliminate this terminology. But those examiners who are trying to encompass the entire “gray scale” of degrees of confidence may wish to use this or a similar term.

**no conclusion (totally inconclusive, indeterminable)**—This is the zero point of the confidence scale. It is used when there are significantly limiting factors, such as disguise in the questioned and/or known writing or a lack of comparable writing, and the examiner does not have even a leaning one way or another.

*Examples*—*No conclusion* could be reached as to whether or not the John Doe of the known material wrote the questioned material, or I could not determine whether or not the John Doe of the known material wrote the questioned material.

**indications did not**—this carries the same weight as the indications term that is, it is a very weak opinion.

*Examples*—There is very little significant evidence present in the comparable portions of the questioned and known writings, but that evidence *suggests* that the John Doe of the known material did not write the questioned material, or I

found *indications* that the John Doe of the known material did *not* write the questioned material but the evidence is far from conclusive.

See Discussion after **indications**.

**probably did not**—the evidence points rather strongly against the questioned and known writings having been written by the same individual, but, as in the probable range above, the evidence is not quite up to the “virtually certain” range.

*Examples*—It has been concluded that the John Doe of the known material probably did not write the questioned material, or it is my opinion (or conclusion or determination) that the John Doe of the known material probably did not write the questioned material.

DISCUSSION—Some examiners prefer to state this opinion: “It is unlikely that the John Doe of the known material wrote the questioned material.” There is no strong objection to this, as “unlikely” is merely the Anglo-Saxon equivalent of “improbable”.

**strong probability did not**—this carries the same weight as strong probability on the identification side of the scale; that is, the examiner is virtually certain that the questioned and known writings were not written by the same individual.

*Examples*—There is strong probability that the John Doe of the known material did not write the questioned material, or in my opinion (or conclusion or determination) it is highly probable that the John Doe of the known material did not write the questioned material.

DISCUSSION—Certainly those examiners who choose to use “unlikely” in place of “probably did not” may wish to use “highly unlikely” here.

**elimination**—this, like the *definite conclusion of identity*, is the highest degree of confidence expressed by the document examiner in handwriting comparisons. By using this expression the examiner denotes no doubt in his opinion that the questioned and known writings were not written by the same individual.

*Examples*—It has been concluded that the John Doe of the known material did not write the questioned material, or it is my opinion (or conclusion or determination) that the John Doe of the known material did not write the questioned material.

DISCUSSION—This is often a very difficult determination to make in handwriting examinations, especially when only requested exemplars are available, and extreme care should be used in arriving at this conclusion.

4.1.1 When the opinion is less than definite, there is usually a necessity for additional comments, consisting of such things as reasons for qualification (if the available evidence allows that determination), suggestions for remedies (if any are known), and any other comments that will shed more light on the report. The report should stand alone with no extra explanations necessary.

#### 4.2 *Deprecated and Discouraged Expressions:*

4.2.1 Several expressions occasionally used by document examiners are troublesome because they may be misinterpreted to imply bias, lack of clarity, or fallaciousness and their use is deprecated. Some of the terms are so blatantly inane (such as “make/no make”) that they will not be discussed. The use of others is discouraged because they are incomplete or misused. These expressions include:

**possible/could have**—these terms have no place in expert opinions on handwriting because the examiner’s task is to decide to what degree of certainty it can be said that a handwriting sample is by a specific person. If the evidence is so limited or unclear that no definite or qualified opinion can be expressed, then the proper answer is *no conclusion*. To say that the suspect “could have written the material in question” says nothing about probability and is therefore meaningless to the reader or to the court. The examiner should be clear on the different meanings of “possible” and “probable,” although they are often used interchangeably in everyday speech.

**consistent with**—there are times when this expression is perfectly appropriate, such as when “evidence consistent with disguise is present” or “evidence consistent with a simulation or tracing is present, but “the known writing is consistent with the questioned writing” has no intelligible meaning.

**could not be identified/cannot identify**—these terms are objectionable not only because they are ambiguous but also because they are biased; they imply that the examiner’s task is only to identify the suspect, not to decide whether or not the suspect is the writer. If one of these terms is used, it should always be followed by “or eliminate[d]”.

**similarities were noted/differences as well as similarities**—these expressions are meaningless without an explanation as to the extent and significance of the similarities or differences between the known and questioned material. These terms should never be substituted for gradations of opinions.

**cannot be associated/cannot be connected**—these terms are too vague and may be interpreted as reflecting bias as they have no counterpart suggesting that the writer cannot be eliminated either.

**no identification**—this expression could be understood to mean anything from a strong probability that the suspect wrote the questioned writing; to a complete elimination. It is not only confusing but also grammatically incorrect when used informally in sentences such as “I no identified the writer” or “I made a no ident in this case.”

**inconclusive**—this is commonly used synonymously with no conclusion when the examiner is at the zero point on the scale of confidence. A potential problem is that some people understand this term to mean something short of definite (or conclusive), that is, any degree of probability, and the examiner should be aware of this ambiguity.

**positive identification**—This phrase is inappropriate because it seems to suggest that some identifications are more positive than others.

**[strong] reason to believe**—there are too many definitions of *believe* and *belief* that lack certitude. It is more appropriate to testify to our conclusion (or determination or expert opinion) than to our belief, so why use that term in a report?

**qualified identification**—An *identification* is not qualified. However, opinions may be qualified when the evidence falls short of an *identification* or *elimination*.

*ASTM International takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this standard. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.*

*This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, at the address shown below.*

*This standard is copyrighted by ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, United States. Individual reprints (single or multiple copies) of this standard may be obtained by contacting ASTM at the above address or at 610-832-9585 (phone), 610-832-9555 (fax), or service@astm.org (e-mail); or through the ASTM website (www.astm.org). Permission rights to photocopy the standard may also be secured from the ASTM website (www.astm.org/COPYRIGHT/).*



**EXHIBIT 6**

**EXHIBIT 6**

**EXHIBIT 6**

## SETTLEMENT AGREEMENT AND GENERAL RELEASE

This Settlement Agreement and General Release of all Claims ("Agreement") is made and entered into by and between **James A. Blanco** ("**BLANCO**"), on the one hand, and the **American Academy of Forensic Sciences** ("**AAFS**"), on the other hand (collectively "the Parties"), for the purpose of settling any and all claims between them.

Whereas a written complaint was filed against **BLANCO** with the **AAFS** Ethics Committee on January 5, 2006 alleging that **BLANCO** violated the **AAFS** Code of Ethics and Conduct sections 1(a) and 1(c);

Whereas the **AAFS** Ethics Committee determined that **BLANCO** violated the **AAFS** Code of Ethics and Conduct on June 13, 2008 and recommended that the **AAFS** Board of Directors expel **BLANCO** from the **AAFS** membership;

Whereas the **AAFS** Board of Directors ratified the Ethics Committee's expulsion recommendation on September 16, 2008;

Whereas **BLANCO** appealed the expulsion order to the entire membership of the **AAFS**, and a hearing was held on February 18, 2009 at which the **AAFS** membership voted to uphold the **AAFS** Board of Directors' expulsion order;

Whereas **BLANCO** filed an action on June 23, 2009 in the United States District Court for the Northern District of California, San Francisco Division, entitled *James A. Blanco v. the American Academy of Forensic Sciences; and DOES 1-20*, Case No. CV 09 2780 SI ("the Action") asserting various claims against **AAFS**;

Whereas without admitting or conceding any wrongdoing, fault or liability of any kind, **BLANCO** has agreed to settle all disputes and release all claims against **AAFS** and to enter into this Agreement.

In consideration of the promises and covenants contained herein but no monetary consideration, the adequacy of which is hereby acknowledged, the Parties, and each of them, covenant and agree as follows:

**Section 1. Vacation of Expulsion and Resignation.** The parties agree to the following: (1) **AAFS** hereby vacates its September 16, 2008 expulsion order of the Board of Directors of **AAFS**; (2) Simultaneously with **AAFS**'s vacating of its September 16, 2008 expulsion order, **BLANCO**'s resignation from **AAFS** will be deemed to have been tendered and accepted; and (3) **BLANCO** will never reapply for membership in the **AAFS** in the future.

**Section 2. Release of All Claims.** Except as set forth in this Agreement, **BLANCO**, on his own behalf and that of his heirs, executors, attorneys, administrators, successors, and assigns, fully release and discharge **AAFS**, its predecessors, successors, subsidiaries, affiliates, assigns, and insurers, its and their directors, officers, committee members, trustees, employees, attorneys, and agents, whether in their individual or official capacities (collectively referred to as the

“Released Parties”), from any and all liability, claims and demands, up to the date of this Agreement, including, but not limited to, claims, demands or actions relating thereto, arising under AAFS’s policies and procedures, whether formal or informal; the United States or State of California Constitutions; and any other federal, state or local statute, ordinance or regulation.

**Section 3. Dismissal of Action.** BLANCO agrees to take all actions necessary to dismiss the Action, with prejudice, as soon as possible after this Agreement becomes effective, including, but not limited to, dismissing *James A. Blanco v. the American Academy of Forensic Sciences*; and *DOES 1-20*, Case No. CV 09 2780 SI.

**Section 4. Promise Not to Prosecute.** BLANCO further agrees that he shall not, at any time hereafter, commence, maintain or prosecute any action, suit, proceeding, investigation, complaint, claim, grievance or charge with any court, administrative agency, arbitrator or any other body or person, whether Federal, State, contractual or otherwise, or aid or assist others in prosecuting such action, suit, proceeding, investigation, complaint, claim, grievance or charge on their behalf, except in response to governmental agency or court inquiries or as compelled by legal process, against any Released Party, based in whole or in part upon, or arising out of or in an way connected with, any of the claims released or any of the matters referred to in this Agreement. BLANCO further agrees to indemnify and hold the Released Parties harmless from and against any and all claims, demands, causes of action, damages or liability of any kind, including the cost of defense and reasonable attorneys’ fees arising out of or in connection with, any action, suit, proceeding, investigation, complaint, claim, grievance or charge commenced, maintained, or prosecuted by BLANCO contrary to the terms of this Agreement.

**Section 5. Unknown or Different Facts or Law.** BLANCO acknowledges that he may discover facts or law different from, or in addition to, the facts or law they know or believe to exist with respect to a Released Claim. BLANCO agrees, nonetheless, that this Agreement and the releases contained in it shall be and remain effective in all respects notwithstanding such different or additional facts or law.

**Section 6. California Civil Code Section 1542 Waiver.** BLANCO expressly acknowledges and agrees that the releases contained in this Agreement include a waiver of all rights under Section 1542 of the California Civil Code, which provides:

A general Release does not extend to claims which the creditor does not know or suspect to exist in his favor at the time of executing the release, which if known by him must have materially affected his settlement with the debtor.

BLANCO acknowledges that he has read all of this Agreement, including the above Civil Code section, and that he fully understands both the Agreement and the Civil Code section. BLANCO expressly waives any benefits and rights granted pursuant to Civil Code section 1542.

**Section 7. Representations.** Each signatory hereto warrants that s/he/it is legally competent and/or authorized to execute this Agreement and has not relied on any statements or explanations in connection therewith. Moreover, each party hereby acknowledges that s/he/it has

been afforded the opportunity to be advised by legal counsel regarding the terms of this Agreement, including the release of all claims and waiver of rights.

**Section 8. No Admissions.** This Agreement shall not be admissible in any proceeding as evidence of improper action by either party. AAFS denies that there is any basis for BLANCO's actual or threatened claims. No party admits any wrongdoing, fault or liability of any kind.

**Section 9. Attorneys' Fees And Costs.** Each party to this Agreement shall bear his/her/its own attorneys' fees and costs.

**Section 10. Waiver.** No provision of this Agreement may be waived unless in writing and signed by all the parties to this Agreement. Waiver of any one provision shall not constitute waiver of any other provision.

**Section 11. Applicable Law.** This Agreement shall be construed and interpreted in accordance with the laws of the State of California.

**Section 12. Modification or Amendment.** This Agreement or any of its provisions may be modified or amended only by written agreement of all the Parties to this Agreement.

**Section 13. Knowledge, Capacity And Authority.** BLANCO represents and warrants that he had the opportunity to have counsel explain the contents of this Agreement to him. BLANCO represents that he understands the contents of this Agreement and that he executed it knowingly and voluntarily and understands that after executing it he cannot proceed against any Releasee on account of the matters referred to herein. BLANCO represents and warrants that he has the authority and capacity to execute this Agreement.

**Section 14. Execution and Delivery.** This Agreement may be executed and delivered in two or more counterparts, each of which when so executed and delivered shall be the original, but such counterparts together shall constitute but one and the same instrument. For purposes of this section, an executed facsimile copy of the Agreement may be "delivered" by one party to the other, provided that the original executed copy of the same is provided to the receiving party within ten (10) calendar days of said "delivery" of said executed facsimile copy.

**Section 15. Cooperation.** The parties agree to do all things necessary and to execute all further documents necessary and appropriate to carry out and effectuate the terms and purposes of this Agreement.

**Section 16. Interpretation; Construction.** The headings set forth in this Agreement are for convenience only and shall not be used in interpreting this Agreement. This Agreement has been drafted by legal counsel representing AAFS, but BLANCO has participated in the negotiation of its terms. BLANCO acknowledges he has had an opportunity to review and discuss each term of this Agreement with legal counsel and, therefore, the normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of this Agreement.

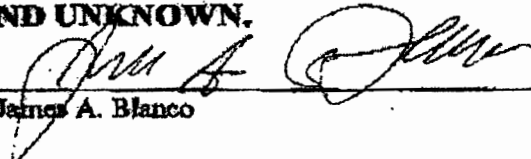
**Section 17. Entire Agreement.** This Agreement incorporates the entire understanding between the Parties and recites the whole consideration for the promises exchanged herein. It fully supersedes any and all prior agreements or understandings, written or oral, between the Parties hereto pertaining to the subject matter hereof. The terms of this Agreement are contractual and not mere recitals. This Agreement may not be amended or modified in any respect whatsoever except by a writing duly executed by the Parties, and the Parties agree that they shall make no claim(s) at any time that this Agreement has been orally amended or modified.

**IN WITNESS WHEREOF,** the undersigned have set their hands the day and year set forth below their respective signatures.

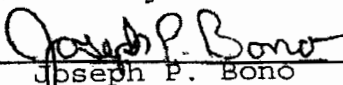
**PLEASE READ CAREFULLY.**

**THIS AGREEMENT INCLUDES A RELEASE OF ALL CLAIMS KNOWN AND UNKNOWN.**

Dated: August 27<sup>th</sup> 2010


  
James A. Blanco

Dated: August 28, 2010

American Academy of Forensic Sciences  
By   
Joseph P. Bono  
Title: President  
American Academy of Forensic Sciences

Approved as to Form:

  
Randall L. Wiens  
Attorney for Plaintiff

  
Michael T. Lucey  
Attorney for Defendant

**EXHIBIT 7**

**EXHIBIT 7**

**EXHIBIT 7**

1 MICHAEL T. LUCEY (SBN: 099927)  
 2 MARIE A. TRIMBLE (SBN: 257891)  
 3 GORDON & REES LLP  
 4 275 Battery Street, Suite 2000  
 5 San Francisco, CA 94111  
 6 Telephone: (415) 986-5900  
 7 Facsimile: (415) 986-8054

8 Attorneys for Defendant  
 9 AMERICAN ACADEMY OF  
 10 FORENSIC SCIENCES

11 RANDALL L. WIENS (SBN: 105326)  
 12 LAW OFFICES OF RANDALL L. WIENS  
 13 1007 - 7th Street, Suite 500  
 14 Sacramento, CA 95814  
 15 Telephone: (916) 446-1900  
 16 Facsimile: (916) 446-1919

17 Attorney for Plaintiff  
 18 JAMES A. BLANCO

Gordon & Rees LLP  
 Embarcadero Center West  
 275 Battery Street, Suite 2000  
 San Francisco, CA 94111

19 UNITED STATES DISTRICT COURT  
 20 NORTHERN DISTRICT OF CALIFORNIA  
 21 SAN FRANCISCO DIVISION

22 JAMES A. BLANCO

23 Plaintiff,

24 vs.

25 AMERICAN ACADEMY OF FORENSIC  
 26 SCIENCES; and DOES 1-20,

27 Defendants.

CASE NO. CV 09 2780 SI  
**STIPULATION FOR DISMISSAL  
 WITH PREJUDICE AND [PROPOSED]  
 ORDER**

28 Pursuant to Federal Rule of Civil Procedure 41(a)(1)(A)(ii), Plaintiff JAMES A.  
 29 BLANCO and Defendant AMERICAN ACADEMY OF FORENSIC SCIENCES ("Defendant")  
 30 (referred to collectively as the "Parties") jointly submit the following Stipulation for Dismissal  
 31 with Prejudice:

32 WHEREAS the Parties have entered into an agreement setting forth the terms and  
 33 conditions of settlement.

1 IT IS HEREBY STIPULATED by and between the Parties, by and through their counsel,  
2 that this action is hereby dismissed with prejudice in its entirety. Each Party shall bear its own  
3 costs and fees.

4  
5 Dated: ~~August 30, 2010~~ *September 2, 2010*

ATTORNEY FOR PLAINTIFF  
By *Randall L. Wiens*  
/s/  
RANDALL L. WIENS  
Attorney for Plaintiff  
JAMES A. BLANCO

6  
7  
8  
9  
10 Dated: August 30, 2010

ATTORNEYS FOR DEFENDANT  
By \_\_\_\_\_  
/s/  
MARIE A. TRIMBLE  
Attorneys for Defendants  
AMERICAN ACADEMY OF  
FORENSIC SCIENCES

Gordon & Rees LLP  
Embarcadero Center West  
275 Battery Street, Suite 2000  
San Francisco, CA 94111

11  
12  
13  
14  
15  
16 Pursuant to the Parties' Stipulation for Dismissal With Prejudice, this action is hereby  
17 dismissed with prejudice in its entirety.

18 **IT IS SO ORDERED.**

19  
20  
21 Dated: \_\_\_\_\_

*Susan Illston*  
\_\_\_\_\_  
Honorable Susan Illston

22  
23  
24  
25  
26  
27  
28



**EXHIBIT 8**

**EXHIBIT 8**

**EXHIBIT 8**

EXCERPTS OF TRANSCRIPT CONCERNING TESTIMONY OF JAMES BLANCO

IN THE UNITED STATES BANKRUPTCY COURT  
FOR THE EASTERN DISTRICT OF CALIFORNIA SACRAMENTO DIVISION  
BEFORE THE HONORABLE DAVID E. RUSSELL, JUDGE **Case No. 08-28230-R-7**

REPORTER'S TRANSCRIPT OF TRIAL DAY 2, THURSDAY, MAY 12 2011

**When an opposing attorney challenged Blanco's credibility by bringing up the issue of the American Academy of Forensic Sciences ("AAFS") expulsion of Blanco, Blanco's Federal Lawsuit against the AAFS and the resulting settlement where the AAFS VACATED their expulsion order against Blanco, the Federal Judge defended Blanco as is clear from the following transcript citations:**

Page 56 Line 9, **the Judge:**

"He's been attacked by your witness [Dave Moore]....I am satisfied completely that this man [Blanco] has done nothing wrong. And, if anything, by using scientific methods, he's probably a better examiner than your witness."

Page 57 Line 13, **the Judge:**

"So what you've got here is....a decision that says that his expulsion was reversed."

Page 58 Line 2, **the Judge:**

"I believe this witness, everything he's said so far."

Page 58 Line 19, **the Judge:**

"I'm convinced that Mr. Blanco has done nothing wrong. I have dealt with some organizations like the one he's dealing with and, you know, frankly, they're a bunch of old fogies who don't know what they're doing."

Page 59 Line 9, **the Judge:**

"He's got his decision that says he's right, and that's sufficient in my book."

Page 61 Line 10, Mr. Hollister:

"Your Honor, I submit that he [Blanco] is qualified."

Page 61 Line 12, **the Judge:**

"I made that conclusion a long time ago. This man is qualified."

Page 116 Lines 20-21, **the Judge:**

"I believe Mr. Blanco before I believe Mr. Moore."

Page 123 Lines 14-15, **the Judge:**

"And that's going to be my ruling. It's going to be dismissed with prejudice."

**Follow-up Note:**

Judge Russell's decision was appealed but the Ninth Circuit Appellate Panel upheld Judge Russell's original decision taking note that,

"The bankruptcy court...found expert Blanco's testimony more persuasive than expert Moore's."  
UNITED STATES BANKRUPTCY APPELLATE PANEL OF THE NINTH CIRCUIT, BAP No. CC-11-1323-KiDJu Filed DEC 16 2011. Page 18 Lines 5 and 6.

FILED  
May 28, 2011  
CLERK, U.S. BANKRUPTCY COURT  
EASTERN DISTRICT OF CALIFORNIA  
  
0003526526

IN THE UNITED STATES BANKRUPTCY COURT  
FOR THE EASTERN DISTRICT OF CALIFORNIA

SACRAMENTO DIVISION

BEFORE THE HONORABLE DAVID E. RUSSELL, JUDGE

---oOo---

In re:	)	
	)	
DEAD OAK ESTATES, INC.,	)	Case No. 08-28230-R-7
	)	
Debtor,	)	
_____	)	
	)	
MICHAEL F. BURKART, in his	)	
capacity as Trustee for the	)	
Bankruptcy Estate of DEAD OAK	)	
ESTATES, INC., and SUSAN	)	
VINEYARD,	)	
	)	
Plaintiffs,	)	
	)	
vs.	)	Adv. No. 09-02730
	)	
ROBERT KUPKA and CYNTHIA	)	
KUPKA,	)	
	)	
Defendants.	)	
_____	)	

REPORTER'S TRANSCRIPT

OF TRIAL - DAY 2

THURSDAY, MAY 12, 2011

2:00 P.M.

---oOo---

REPORTED BY:

SANDRA VON HAENEL  
CSR NUMBER 11407

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

A P P E A R A N C E S

For the Plaintiffs:

DESMOND, NOLAN, LIVACH & CUNNINGHAM  
1830 15th Street  
Sacramento, California 95811  
BY: J. RUSSELL CUNNINGHAM & KRISTEN DITLEVESEN  
ATTORNEYS AT LAW

For the Defendants:

HOLLISTER LAW CORPORATION  
655 University Avenue  
Suite 200  
Sacramento, California 95825  
BY: GEORGE C. HOLLISTER  
ATTORNEY AT LAW

LAW OFFICES OF WESLEY C.J. EHLERS  
2600 Capitol Avenue  
Suite 300  
Sacramento, California 95816  
BY: WESLEY C.J. EHLERS  
ATTORNEY AT LAW

Also present:

MICHAEL BURKART, Chapter 7 Trustee

---oOo---

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

I N D E X

WITNESS	EXAMINATION	BY	PAGE
DAVID MOORE	Direct	Ms. Ditlevsen	5
	Cross	Mr. Hollister	25
	Redirect	Ms. Ditlevsen	31
	Recross	Mr. Hollister	34
	Further Redirect	Ms. Ditlevsen	37
JAMES BLANCO	Direct	Mr. Hollister	38
	Voir Dire	Ms. Ditlevsen	43
	Voir Dire	Mr. Hollister	60
	Direct Resumed	Mr. Hollister	61
	Cross	Ms. Ditlevsen	77
	Redirect	Mr. Hollister	90

---oOo---

E X H I B I T S

PLAINTIFFS '		PAGE
21	Report of David S. Moore	12
	Alternative Direct Testimony Declaration of David S. Moore	25
DEFENDANTS '		
M	Report of James A. Blanco	61

---oOo---

1 code sections that were cited that you violated?

2 A. Well, I do have this settlement agreement, and I'll be  
3 glad to pull that out for you --

4 Q. Okay.

5 A. -- and read that to you. I think what I see in your  
6 hand is from the Web page of the Academy, and that's not  
7 evidence.

8 Q. It is not evidence, no.

9 A. Yes. But I would say that the signed settlement  
10 agreement between the parties is probably evidence. I'm not  
11 an attorney. But I am looking for the jargon.

12 I'm not seeing it right here. I mean, it says other  
13 things, and there's all the whereases. Whereas there is a  
14 written complaint against Blanco; whereas the ethics  
15 committee conducted a hearing; whereas Blanco was expelled.  
16 I'm just highlighting. Whereas I filed an action with the  
17 United States District Court in the Northern District of  
18 California. And then whereas without admitting or conceding  
19 any wrongdoing, fault, or liability of any kind, Blanco has  
20 agreed to settle all disputes and will release all claims  
21 against the American Academy of Forensic Sciences and enter  
22 into this agreement. And the first point is they vacate the  
23 expulsion.

24 Q. Okay.

25 Well, what I'd like to do is read to you something

1 that is not evidence, but it's a statement, and I'd like you  
2 to tell me if you disagree if this is what the board found.

3 THE COURT: Why are we going into all of this?

4 MS. DITLEVSEN: I think it's important, your Honor.

5 THE COURT: Why?

6 MS. DITLEVSEN: It's important for --

7 THE COURT: I don't know what it's important about.

8 MS. DITLEVSEN: -- this witness's credibility.

9 THE COURT: Well, no. He's been attacked by your  
10 witness. I don't see anything. He's answered as far as I  
11 can see. He is really bonding.

12 I am satisfied completely that this man has done  
13 nothing wrong. And, if anything, by using scientific  
14 methods, he's probably a better examiner than your witness.

15 MS. DITLEVSEN: Your Honor, what I'm trying to --

16 THE COURT: I didn't even know that that was -- your  
17 client was -- I mean that your expert was the one who was  
18 making these complaints against this man.

19 MS. DITLEVSEN: Well, he was one of several people,  
20 your Honor, but the claim was not he was using scientific --

21 MR. HOLLISTER: Objection, your Honor. That misstates  
22 his testimony.

23 THE COURT: What?

24 MR. HOLLISTER: That he was one of several people.

25 MS. DITLEVSEN: I will represent to the Court he cited

1 two different names, Mr. Moore and another gentleman.

2 THE COURT: Yes, but one is a competitor in the  
3 southern part of the state.

4 MS. DITLEVSEN: Correct, your Honor.

5 THE COURT: There's two competitors.

6 MS. DITLEVSEN: Okay.

7 The point would be that they actually found that he  
8 improperly applied what would otherwise be a proper method  
9 in a situation where it was improper to use it.

10 THE COURT: Then there was another person that came  
11 along, an expert, by the way, in the use of ink products,  
12 who said he would have been remiss had he not made that  
13 test. So what you've got here is, you know, unless we have  
14 another full trial about Mr. Blanco, he's got a decision  
15 that says that his expulsion was reversed.

16 MS. DITLEVSEN: Well, under the settlement agreement  
17 that he's offered, the board did not agree to revoke their  
18 findings of the unethical behavior, and they found that he  
19 improperly submitted to a court of law something that was --

20 MR. HOLLISTER: Your Honor, I'm going to object.

21 THE COURT: What are you talking about? That hasn't  
22 been brought up yet. Yesterday it wasn't.

23 MS. DITLEVSEN: That's what I was just trying to get  
24 to, your Honor. I do apologize if it was taking me too long  
25 to get there. That's why I was trying to get to the



1 specific rules.

2 THE COURT: Well, you're going to have a hard time. I  
3 believe this witness, everything he's said so far.

4 So, go ahead.

5 THE WITNESS: Can I clarify?

6 Dave Moore is the only person who filed the second  
7 complaint, that he owns that one, just so we are clear.

8 I know there is a lot going on with a lot of  
9 personalities, but Dave Moore alone filed the second  
10 complaint that you're talking about right now that resulted  
11 with the Academy and the vacation of the expulsion with the  
12 Academy.

13 Q. BY MS. DITLEVSEN: And so the only individual person  
14 that you've sued for filing a complaint against you?

15 THE WITNESS: No. But that's the first complaint back  
16 in '04, the first one I already mentioned about photocopies.

17 MS. DITLEVSEN: Your Honor, I don't want to press the  
18 issue if it's not going to --

19 THE COURT: I'm convinced that Mr. Blanco has done  
20 nothing wrong. I have dealt with some organizations like  
21 the one he's dealing with and, you know, frankly, they're a  
22 bunch of old fogies who don't know what they're doing.

23 MS. DITLEVSEN: Maybe so.

24 THE COURT: So, you know -- and, of course, we don't  
25 have the opposing witnesses here. I'm only hearing his side

1 of the story, but I have no reason to disbelieve what he's  
2 testified to.

3 MS. DITLEVSEN: I can certainly bring Mr. Moore in to  
4 explain.

5 THE COURT: I don't want to retry this. I don't want  
6 to retry this.

7 MS. DITLEVSEN: I don't want to do that either.

8 THE COURT: I mean, I've retried what he has already  
9 gone through. He's got his decision that says he's right,  
10 and that's sufficient in my book.

11 MS. DITLEVSEN: All right.

12 Q. Then my only other question would be are there any  
13 other certifying bodies in your field?

14 A. Yes, there is one other one, and it's a -- it has a  
15 similar name. It's called the Board of Forensic Document  
16 Examiners instead of the American Board, and the two  
17 organizations are, well, they don't like each other.  
18 They're just totally different animals, but there are two  
19 organizations.

20 Q. And did you attempt to obtain certification from that  
21 organization?

22 A. No. I've thought about it and I know those, the  
23 people, the leaders of that group, and I have communications  
24 with them almost weekly, but not at this point. But I'm  
25 toying with the idea.

1 Q. Okay.

2 So at this time you are not certified by anybody?

3 A. That's correct.

4 MS. DITLEVSEN: Okay. Thank you.

5 MR. HOLLISTER: Just real quickly.

6 ---oOo---

7 VOIR DIRE EXAMINATION

8 BY MR. HOLLISTER:

9 Q. Mr. Blanco, did it come as a surprise to you that  
10 you're being attacked today by Mr. Moore through counsel?

11 A. No. He does it pretty frequently.

12 Q. How often have you been challenged by him in a case  
13 that you've been testifying against him or in competition  
14 with him?

15 A. Well, when it's against Mr. Moore, every time, I'd say  
16 every time since the first complaint. In fact, the very  
17 first complaint that he filed against me with Howard Rile in  
18 September of '04, immediately this was brought to the  
19 attention of other opposing counsel to throw in my face,  
20 even before that first complaint had time to run its course.  
21 I mean, within months I was already having to answer  
22 questions about it at depositions.

23 Q. So how many times would you say you've answered these  
24 charges in cases involving Mr. Moore as a forensic examiner  
25 on the other side of the case?

1 A. To include depositions?

2 Q. Yes.

3 A. Maybe 30 times.

4 Q. Okay.

5 And how many times have you been disqualified as an  
6 expert based upon his allegations that you're not qualified  
7 because you're not certified by particular boards or because  
8 of this incident?

9 A. Never.

10 MR. HOLLISTER: Your Honor, I submit that he is  
11 qualified.

12 THE COURT: I made that conclusion a long time ago.  
13 This man is qualified.

14 MR. HOLLISTER: So we ask that we submit his testimony  
15 into evidence as well his report.

16 THE COURT: All right. It will be admitted into  
17 evidence.

18 And his report is what? Exhibit M?

19 MR. HOLLISTER: Exhibit M, and his alternative direct  
20 testimony as well.

21 THE COURT: Exhibit M will be admitted.

22 ---oOo---

23 DIRECT EXAMINATION RESUMED

24 BY MR. HOLLISTER:

25 Q. So, Mr. Blanco, tell me, summarize what your task was

1 MR. CUNNINGHAM: Right. And what we briefed, your  
2 Honor, is that --

3 THE COURT: And now you're saying, "Oh, well, jeez,  
4 she transferred her interest in this thing before that, so  
5 Robert Kupka's signature is enough."

6 Well, even your own expert said he could not -- he  
7 could not dispose of the idea that this was a cut-and-paste  
8 job.

9 MR. CUNNINGHAM: Your Honor, what he testified to was  
10 that there is a continuum of certainty, and our burden of  
11 proof here, your Honor, is a preponderance of the evidence,  
12 which is that it's more likely than not.

13 THE COURT: I understand.

14 MR. CUNNINGHAM: And in --

15 THE COURT: That's the only little wimpy piece of  
16 evidence that you have.

17 MR. CUNNINGHAM: But he testified -- he testified that  
18 there is a continuum, and he testified that, to meet the  
19 burden of proof --

20 THE COURT: I believe Mr. Blanco before I believe  
21 Mr. Moore.

22 MR. CUNNINGHAM: And Mr. Blanco didn't give any  
23 testimony on Robert Kupka's signature, your Honor.

24 THE COURT: He gave us plenty of testimony.

25 MR. HOLLISTER: Oh, my goodness.

1 And, your Honor, it will be short, and then you can do what  
2 you want with the case after that. I'd just like to be able  
3 to present that witness.

4 THE COURT: I don't think it's going to do your case  
5 any good. You've given an offer of proof. It's on the  
6 record. So even if you bring in this witness, it's not  
7 going to change my mind. I told you that. So you're  
8 wasting my time, you're wasting Mr. Hollister's time.

9 Let's just cancel this thing now, dismiss the case  
10 with prejudice.

11 MR. HOLLISTER: Thank you, your Honor.

12 THE COURT: I think that's the way it should go.

13 MR. HOLLISTER: We would ask that.

14 THE COURT: And that's going to be my ruling. It's  
15 going to be dismissed with prejudice.

16 And, like I say, I didn't even reach the point of the  
17 prior proceeding where Mr. Kupka puts up his money to settle  
18 what he thought would settle this thing years ago.

19 MR. CUNNINGHAM: And, again, your Honor, I think if we  
20 can get to the evidence on that --

21 THE COURT: Yes.

22 MR. CUNNINGHAM: -- which hasn't been presented to  
23 you --

24 THE COURT: It hasn't, and I said I'm not going there.  
25 I'm not basing my decision upon that. But I'm just saying



**EXHIBIT 9**

**EXHIBIT 9**

**EXHIBIT 9**



CALIFORNIA  
**Expert  
Witness  
Guide**

SECOND EDITION

**RAOUL D. KENNEDY  
JAMES C. MARTIN**

**Edited by CEB Attorneys:**

**ANNE HARRIS**  
*Supervising Editor*

**LINDA ANTHENIEN COMPTON  
MARY GERBER**

**DECEMBER 2011 UPDATE**

**Authors**

**Raoul D. Kennedy  
James C. Martin**

**CEB Attorney Editor  
Matthew Mandelbaum**

**CEB**

---

**CONTINUING EDUCATION OF THE BAR • CALIFORNIA**  
Oakland, California

For update information call 1-800-232-3444  
Website: [ceb.com](http://ceb.com)

CP-31683

230 FRD 452, 462 (rejecting motion to supplement to attempt to remedy expert's initial inadequate review).

Federal Rule of Civil Procedure 26(b)(5) requires a party to notify other parties if the party is withholding materials otherwise subject to disclosure or discovery because the party is asserting a claim of privilege or work product protection. The party must describe the nature of the documents, communications, or things not produced or disclosed in a manner that, without revealing information itself privileged or protected, will enable other parties to assess the applicability of the privilege or protection.

Rule 26 does not necessarily provide litigants with any expert witness information that is beyond the purview of the former federal discovery procedures. What the revisions do, however, is make the information available in every case, on a different timetable, and in a changed format. See Shea, Kreps, & Solade, *Navigating Expert Discovery*, For the Defense 14 (Nov. 2010); Koski, *Mandatory Disclosure*, ABA J 85 (Feb. 1994). See also Keyte, *A Risk-Averse Guide for Working with Non-Testifying Consultants or Experts*, 17 Antitrust 30 (Spring 2003) (offering practical tips for maximizing protection for testifying expert and minimizing risk of opening up nontestifying expert to discovery).

## §10.48A 2. Draft Experts' Reports

Experts frequently prepare written reports while their thinking is still in the formative stages or before all the facts are known. Thereafter, something may develop that requires modification or a shift in emphasis by the expert. Before the December 2010 amendments to Fed R Civ P 26, several courts had found draft reports of testifying experts to be discoverable under Rule 26(a)(2)(B). See e.g., *Trigon Ins. Co. v U.S.* (ED Va 2001) 204 FRD 277, 283; *W. R. Grace & Co. v Zotos Int'l, Inc.* (WD NY 2000) 2000 US Dist Lexis 18096, \*30; *B.C.F. Oil Ref., Inc. v Consolidated Edison Co.* (SD NY 1997) 171 FRD 57, 65. See also Joseph, *Expert Spoliation*, 25 Nat'l LJ B7 (Feb. 3, 2003) (summarizing *Trigon* and other cases dealing with production of draft reports). Under the December 2010 amendments, however, draft expert reports are generally protected from discovery. First, Rule 26(a)(2)(B)(ii) now expressly limits an expert's report to "facts or data" considered by the witness. Gone is the "or other information" phrasing that courts had relied on to

require disclosure of draft reports. Second, Rule 26(b)(4)(B) specifically extends work-product protection to “drafts of any report or disclosure required under Fed R Civ P 26(a)(2), regardless of the form in which the draft is recorded.” According to the Advisory Committee’s Notes, this protection applies both to experts who are required to submit a report under Rule 26(a)(2)(B) and to those who are subject only to disclosure under Rule 26(a)(2)(C).

### §10.48B 3. Case-Specific Disclosure Requirements

The courts have authority to shape the scope and the timing of the disclosure requirements. See *Sylla-Sawdon v Uniroyal Goodrich Tire Co.* (8th Cir 1995) 47 F3d 277, 284. The courts also have that authority under Fed R Civ P 26(a)(2)(B) and (C). Thus, counsel must be careful to comply both with the Rule 26 provisions and with any case-specific disclosure requirements set out by the court. If a party does not comply with disclosure requirements in a court’s order, the court may restrict or exclude expert witness testimony. The court in *Sylla-Sawdon* restricted the plaintiff’s expert’s testimony to the matters the expert had disclosed in a very brief affidavit, and based on those limited facts, *Sylla-Sawdon* was not able to qualify the expert as an expert witness. 47 F3d at 283.

**EXAMPLE**► In the silicone breast implant litigation, Judge Pointer of the Judicial Panel for Multidistrict Litigation issued a series of orders that set out different procedures and timetables for disclosure by each of several categories of experts. See, e.g., *In re Silicone Gel Breast Implants Prods. Liab. Litig.* (ND AI 1999) 1999 US Dist Lexis 23526. The cases were later remanded back to the local district courts, including the district court of Nebraska. Some of the Nebraska plaintiffs violated Judge Pointer’s orders as well as the Nebraska court’s orders by missing deadlines and submitting written expert reports that were incomplete or unsigned. Under Fed R Civ P 37, the Nebraska court imposed monetary sanctions, restricted the testimony of some of plaintiffs’ experts to issues set out in those expert’s reports, and excluded some of plaintiffs’ experts altogether.

**EXHIBIT 10**

**EXHIBIT 10**

**EXHIBIT 10**



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

This standard is issued under the fixed designation E2290; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 This guide provides procedures that should be used by forensic document examiners (Guide E444) 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>

E444 Guide for Scope of Work of Forensic Document Examiners

E1658 Terminology for Expressing Conclusions of Forensic Document Examiners

E1732 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.

Current edition approved April 15, 2007. Published July 2007. Originally approved in 2003. Last previous edition approved in 2007 as E2290 – 07. DOI: 10.1520/E2290-07A.

<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.

## E2195 Terminology Relating to the Examination of Questioned Documents

## 3. Terminology

3.1 For definitions of terms in this guide, refer to Terminologies E1732 and E2195.

### 3.2 Definitions:

3.2.1 *known, n/adj*—of established origin associated with the matter under investigation. **E1732**

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. **E1732**

### 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. Contemporaneousness 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.

7.6 Determine whether the questioned writing appears to be distorted. If it appears to be distorted, determine whether it is possible to establish that the apparently distorted writing is natural writing.

7.6.1 If it is not natural writing, or if it is not possible to establish whether the apparently distorted writing is natural writing, determine whether the apparently distorted writing is suitable for comparison and proceed to the extent possible. If the available questioned writing is not suitable for comparison, discontinue these procedures and report accordingly.

7.7 Evaluate the questioned writing for the following:

7.7.1 *Type of Writing*—If there is more than one type of writing within the questioned writing, separate the questioned writing into groups of single types of writing.

7.7.2 *Internal Consistency*—If there are inconsistencies within any one of the groups created in 7.7.1 (for example, suggestive of multiple writers), divide the group(s) into sub-groups, each one of which is consistent.

7.7.3 Determine range of variation of the writing for each group or sub-group of the questioned writing created in 7.7.1 and 7.7.2.

7.7.4 Determine presence or absence of individualizing characteristics.

7.7.5 If the examination is a comparison of exclusively questioned writing, go to 7.12.

7.8 Determine whether the known writing is original writing. If it is not original writing, request the original.

NOTE 5—Examination of the original known writing is preferable.

7.8.1 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.

7.9 Determine whether the known writing appears to be distorted. If it appears to be distorted, determine whether it is possible to establish that the apparently distorted writing is natural writing.

7.9.1 If it is not natural writing, or if it is not possible to establish whether the apparently distorted writing is natural writing, determine whether the apparently distorted writing is suitable for comparison and proceed to the extent possible. It should be determined whether additional known writing would be of assistance, and if so, it should be requested. If the available known writing is not suitable for comparison, discontinue these procedures and report accordingly.

7.10 Evaluate the known writing for the following:

7.10.1 *Type of Writing*—If there is more than one type of writing within the known writing, separate the known writing into groups of single types of writing.

7.10.2 *Internal Consistency*—If there are unresolved inconsistencies within any of the groups created in 7.10.1 (for example, suggestive of multiple writers), contact the submitter for authentication. If any inconsistencies are not resolved to the examiner's satisfaction, discontinue these procedures for the affected group(s), and report accordingly.

7.10.3 Determine range of variation of the writing for each group of the known writing created in 7.10.1 and 7.10.2.

7.10.4 Determine presence or absence of individualizing characteristics.

7.11 Evaluate the comparability of the bodies of writing (questioned writing to known writing or exclusively questioned writing).

7.11.1 If the bodies of writing are not comparable, discontinue comparison and request comparable known writing, if appropriate.

7.11.1.1 If comparable known writing is made available, return to 7.10. If comparable known writing is not made available, discontinue these procedures and report accordingly.

7.12 Conduct a side-by-side comparison of comparable portions of the bodies of writing.

7.12.1 Determine whether there are differences, absent characters, and similarities.

7.12.2 Evaluate their significance individually and in combination.

7.12.3 Determine if there is a sufficient quantity of writing (questioned writing, or known writing, or both).

7.12.3.1 If writing (questioned writing, or known writing, or both) is not sufficient in quantity for an elimination or an identification, continue the comparison to the extent possible. When appropriate, request more known writing. If more known writing is made available, return to 7.10.

7.12.4 Analyze, compare, and evaluate the individualizing characteristics and other potentially significant features present in the comparable portions of the bodies of writing.

NOTE 6—Among the features to be considered are elements of the writing such as abbreviation; alignment; arrangement, formatting, and positioning; capitalization; connectedness and disconnectedness; cross strokes and dots, diacritics and punctuation; direction of strokes; disguise; embellishments; formation; freedom of execution; handedness; legibility; line quality; method of production; pen hold and pen position; overall pressure and patterns of pressure emphasis; proportion; simplification; size; skill; slant or slope; spacing; speed; initial, connecting, and terminal strokes; system; tremor; type of writing; and range of variation.

Other features such as lifts, stops and hesitations of the writing instrument; patching and retouching; slow, drawn quality of the line; unnatural tremor; and guide lines of various forms should be evaluated when present.

Potential limiting factors such as age; illness or injury; medication, drugs or alcohol (intoxication or withdrawal); awkward writing position; cold or heat; fatigue; haste or carelessness; nervousness; nature of the document, use of the unaccustomed hand; deliberate attempt at disguise or auto-forgery should be considered.

For further details, see the referenced texts.

7.12.5 Evaluate the similarities, differences, and limitations. Determine their significance individually and in combination.

7.13 Form a conclusion based on results of the above analyses, comparisons, and evaluations.

## 8. Reporting Conclusions

8.1 The conclusion(s) or opinion(s) resulting from the procedures in this guide may be reached once sufficient examinations have been conducted. The number and nature of the necessary examinations is dependent on the question at hand.

8.2 The bases and reasons for the conclusion(s), or opinion(s), should be included in the examiner's documentation and may appear in the report.

8.3 Refer to Terminology **E1658** for reporting conclusion(s) or opinion(s).

## 9. Keywords

9.1 forensic sciences; handwriting; questioned documents

## REFERENCES

- (1) Conway, J. V. P., *Evidential Documents*, Springfield, IL, Charles C. Thomas, 1959.
- (2) Harrison, W. R., *Suspect Documents*, London, Sweet and Maxwell, 1958 and 1966.
- (3) Hilton, O., *Scientific Examination of Questioned Documents*, New York, Elsevier, 1982.
- (4) Huber, R. A. and Headrick, A. M., *Handwriting Identification: Facts and Fundamentals*, Boca Raton, FL, CRC Press, 1999.
- (5) Osborn, A. S., *Questioned Documents*, 2d ed., Albany, NY, Boyd Printing Co., 1929.

*ASTM International takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this standard. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.*

*This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, at the address shown below.*

*This standard is copyrighted by ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, United States. Individual reprints (single or multiple copies) of this standard may be obtained by contacting ASTM at the above address or at 610-832-9585 (phone), 610-832-9555 (fax), or service@astm.org (e-mail); or through the ASTM website (www.astm.org). Permission rights to photocopy the standard may also be secured from the ASTM website (www.astm.org/COPYRIGHT/).*





# Standard Guide for Examination of Documents Produced with Liquid Ink Jet Technology<sup>1</sup>

This standard is issued under the fixed designation E2389; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 This guide provides procedures that should be used by forensic document examiners (Guide E444) for examinations of documents produced with liquid inkjet technology and related procedures.

1.2 These procedures are applicable whether the examination is of a questioned and known item(s) or of exclusively questioned item(s).

1.3 These procedures include evaluation of the sufficiency of the material available for examination.

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

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

1.6 These methods are applicable to examinations involving copiers, printers, facsimile devices, and multifunction devices using ink jet technology.

1.7 *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:<sup>2</sup>

D1968 Terminology Relating to Paper and Paper Products  
E444 Guide for Scope of Work of Forensic Document Examiners

E1732 Terminology Relating to Forensic Science

E2195 Terminology Relating to the Examination of Questioned Documents

E2331 Guide for Examination of Altered Documents

F221 Terminology Relating to Carbon Paper and Inked

Ribbon Products and Images Made Therefrom

F909 Terminology Relating to Printers

F1156 Terminology Relating to Product Counterfeit Protection Systems<sup>3</sup>

F1457 Terminology Relating to Laser Printers

F1857 Terminology Relating to Ink Jet Printers and Images Made Therefrom

## 3. Terminology

3.1 *Definitions*—For definitions of terms in this guide, refer to Terminologies E1732 and E2195.

3.1.1 *coalescence, n*—puddling or pooling of adjacent ink drops on the substrate before they can be dried or absorbed resulting in nonuniformity of color density. **F1857**

3.1.2 *cockle, n—of paper*, a defective, puckered condition of a paper sheet as a result of non-uniform hygro-expansion which can be related to any non-uniformity in the sheet, including mass distribution and drying stresses. **D1968**

3.1.3 *continuous spray, n*—ink jet technology where drops are generated at a regular unbroken rate. Images are then generated by deflections of the ink droplets after they are charged so they are either intercepted by a catcher and not permitted to impact the substrate or deflected to intercept the substrate at specific locations.

3.1.4 *cracking, n*—condition in which ink that has been absorbed into a substrate causes the coating to shrink to a state much smaller than the original coating dimension causing fractures in the image area. **F1857**

3.1.5 *crystallization, n*—condition in which ink evaporates and forms crystals. **F1857**

3.1.6 *drop on demand (DOD), n*—ink jet technology where drops are generated as needed to create an image.

3.1.7 *full-color copiers, n—of ink jet technology*, copiers that can reproduce color originals containing gradations of color. They have a minimum of three colored inks (cyan, magenta and yellow).

3.1.8 *image area, n*—area on a page occupied by all the printed information. **F1457**

3.1.9 *image density, n*—contrast between image and background as measured by densitometer. **F221**

<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.

Current edition approved Dec. 1, 2005. Published January 2006. DOI: 10.1520/E2389-05.

<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.

<sup>3</sup> Withdrawn. The last approved version of this historical standard is referenced on www.astm.org.

3.1.10 *image, n*—optical counterpart of an object produced by means of an image producing device. **F221**

3.1.11 *ink jet printer, n*—nonimpact printer in which the characters are formed by projecting droplets of ink onto a substrate. **F909**

3.1.12 *landscape mode, adj*—printer output orientation in which printed lines run parallel to the direction of movement of the paper. **F1457**

3.1.13 *maximum print position, n*—rightmost point at which the printer can mark the paper. **F1457**

3.1.14 *nonimpact printer, n*—printer in which image formation is not the result of mechanical impacts. Examples are thermal printers, electrostatic printers, electrophotographic printers, and inkjet printers. **F909**

3.1.15 *offset, n*—unintentional transfer of ink (as from a freshly printed substrate). **F1857**

3.1.16 *piezoelectric, n*—ink jet technology where the electrically stimulated deformation of a crystal causes the expulsion of the droplets from the ink chamber.

3.1.17 *pixelation, n*—stairstepped or jagged effect resulting from analog to digital conversion.

3.1.18 *platen, n*—flat plate or roller used as a support for printing or copying a document. **F1156**

3.1.19 *portrait mode, adj*—printer output orientation in which print lines run perpendicular to the direction of movement of the paper. **F1457**

3.1.20 *printhead, n*—printing device of an ink jet printing system.

3.1.21 *printer output area, n*—maximum area on the page to which the printer will print. **F1457**

3.1.22 *raster output scanner, n*—output peripheral, either stand alone or within a printer, that converts computer data into a bit mapped image, which is sent to the host for storage or a printer for output. **F1457**

3.1.23 *slit glass, n*—alternate scanning surface found in some digital photocopiers used in conjunction with an automatic document feeder.

3.1.24 *smudge, n*—tendency of an image to smear or streak onto an adjacent area when rubbed; involves the redeposition of abraded material. **F221**

3.1.25 *thermal impulse, n*—ink jet technology where the rapid expansion of a bubble in the ink created by localized electrical heating expels the droplets from the ink chamber.

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

3.2.1 *banding, n*—uniform density variations or voids in a given color which appear in the direction that the printhead travels. **F1857**

3.2.2 *bleed, n*—ink feathering of one color into an adjacent color over time. **F1857**

3.2.3 *circularity, n*—ratio of a single ink dot height divided by its width with 1.0 being a perfect circle. **F1857**

3.2.4 *feathering, n*—ink spread over substrate causing fuzzy edges, spidery lines and poor print quality. **F1857**

3.2.5 *liquid ink jet device, n*—device in which the ink supply is in fluid (for example, solvent or aqueous) form.

3.2.6 *mottling, n*—nonuniformity of image density which follows patterns in the substrate or by non-uniform ink-substrate interaction. **F1857**

3.2.7 *satellite, n*—extraneous or undesirable ink droplets. (See also *spatter, spray*) **F1857**

3.2.8 *spatter, n*—type of extraneous or undesirable ink droplet originating when a portion of an ink droplet strikes the intended area and is deflected to an unintended area. **F1857**

3.2.9 *spray, n*—type of extraneous or undesirable ink dot near the printed zones which originate from the printhead. **F1857**

## 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 documents produced with ink jet technology are from the same device, whether a particular device created the document, or the determination of the make or model of a device.

## 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 the generation of the document(s), limited quantity or comparability, or condition of the items submitted for examination. 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. The effects can include, but are not limited to, partial destruction of the substrate, stains, and deterioration of the ink. Whenever possible, document examinations should be conducted prior to any chemical processing. Items should be handled appropriately to avoid compromising subsequent examinations.

5.4 Consideration should be given to the possibility that various forms of manipulation and duplication of ink jet-produced items can be generated by computer, scanner, digital camera, graphic pad or other means.

5.5 Some ink supply units are interchangeable between different brands or models of machines. Some ink units are refillable and ink from suppliers other than the original manufacturer may be used.

5.6 Some multi-function devices utilizing toner technology can operate in either printing or copying mode, at different resolutions and can produce both multi-color (for example, CMYK) black or monochrome (for example, one color black). These various outputs from one machine have many significant differences among them.

## 6. Equipment and Requirements

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

NOTE 1—Natural light, incandescent or fluorescent sources, or fiber optic lighting systems are generally used. Transmitted illumination, side lighting, and vertical incident lighting may be useful in a variety of situations.

6.2 Magnification sufficient to allow fine detail to be distinguished.

6.3 Rulers in metric, U.S. customary units, printers' measure, and desktop publishing units.

6.4 Other apparatus as appropriate (for example, measuring grids and magnetic detectors).

6.5 Imaging or other equipment for recording observations as required.

6.6 Reference materials can aid in the determination of a manufacturer.

6.7 Sufficient time and facilities to complete all applicable procedures.

## 7. Procedures

7.1 All procedures shall be performed (consistent with Toner Guide) and noted when appropriate. These procedures need not be performed in the order given.

7.2 Examinations performed, 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 submitted questioned document(s) was produced with liquid ink jet technology. If not, discontinue examination and report accordingly.

7.5 Determine whether the examination is comparison of a questioned document(s) to a known document(s), a comparison of exclusively questioned documents, or is another type of examination of a questioned item(s) (e.g., to determine date limitations or class of machine).

7.6 Determine whether the questioned document(s) is suitable for examination, or comparison, or both. If it is not suitable, discontinue the procedure and report accordingly. Factors that affect the suitability include clarity, detail, or condition of the document.

7.7 If no known document(s) or device(s) was submitted, go to 7.9.

7.8 If a known document(s) is submitted, determine whether the known document(s) is suitable for examination, or comparison, or both. If it is not suitable, discontinue the procedure and report accordingly. Factors that affect the suitability include clarity, detail, or condition of the document.

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

7.10 If a device is examined, its condition should be noted. Service records should be requested and pertinent information noted and recorded.

7.10.1 *Discussion*—Consultation with a qualified technician may be advantageous or necessary.

7.11 Note the capabilities, features, and settings of any variable features on each device examined. If the device has internal memory, retain or recover any stored information.

7.12 Note visible external components of the device such as the platen, slit glass, collators, and cover/automatic document feeder that may contain physical evidence, obstructions, debris, correction fluid, marks, or scratches.

NOTE 2—Before taking exemplars, consideration must be given to the possible destruction or loss of physical evidence within the device (for example, fragments torn from the questioned document).

7.13 Prepare appropriate exemplars, taking into consideration the features of the device and possible chemical ink examinations.

7.14 Note damage to easily accessible internal components of the device such as the print head or paper transport mechanism.

7.15 If applicable, take additional exemplars.

7.16 If none of the exemplars are suitable for comparison and no others are obtained, discontinue these procedures and report accordingly.

7.17 Examine the questioned item(s), or the questioned and known items.

7.17.1 *Discussion*—The type of substrate used in an ink jet printer may affect the appearance of the ink such as banding, circularity, feathering, bleed, mottling, offset, spatter or satellite droplets.

7.18 Examination(s) for indentations (Guide E2291) may be performed for the purpose of visualizing indented writing or physical characteristics such as marks from the paper transport mechanism.

7.19 Various illumination techniques (color filtering, infrared, or ultraviolet) may be used to provide additional information such as security features or stains.

7.20 Examination(s) for alterations (Guide E2331) may be performed.

7.21 Identification of the typestyle(s) may provide useful information (for example, dating information).

7.22 Compare class characteristics (for example, paper supply system, ink type, marks caused by mechanics, color capability). If significant unexplainable differences exist, discontinue and report accordingly.

NOTE 3—Some ink supply units are interchangeable among different brands or models of machines and most units are refillable.

7.23 If possible, classify the device used to produce a questioned document(s). When identifying a manufacturer of a questioned item(s), refer to laboratory and published industry resources. If necessary, contact the device manufacturer or distributor for further information.

7.24 Compare individualizing characteristics such as wear and damage defects, misalignments, reproducible marks, banding, voids, and improper or extraneous ink transfer. Perform and note critical measurements, where needed.

NOTE 4—Successive copying on the same machine will make marks slightly out of register. Doubling or tripling of a pattern of dots or marks indicates, respectively, two or three generations of copies on the same machine. Copying on more than one device may bear the distinctive marks of all machines.

7.25 Evaluate similarities, differences, and limitations. Determine their significance individually and in combination.

NOTE 5—Care must be taken in the evaluation of characteristics as some may be caused by factors external to the print device (for example, artifacts from or manipulation of the source computer file) or characteristics common to a particular model of machine.

7.26 Reach a conclusion according to the criteria set forth in Section 8.

## 8. Report

8.1 Conclusion(s), opinion(s), or findings resulting from the procedures in this guide may be reached once sufficient examinations have been conducted. The number and nature of the necessary examinations is dependent on the question at hand.

8.2 The bases and reasons for the conclusion(s), opinion(s), or findings should be included in the examiner's documentation and may also be included in the report.

8.3 *Identification*—When the examination reveals no significant differences between two or more items and there is agreement in significant individualizing characteristics, an identification is appropriate. There may be limitations.

8.4 *Elimination*—If significant differences between two or more items are found at any level of the analyses, an elimination may be appropriate. There may be limitations. There may be similarities.

8.5 *Qualified Opinions*—When there are limiting factors and the examination reveals similarities or differences of limited significance between two or more items, the use of qualified opinions can be appropriate. This opinion requires explanation of the limiting factors.

8.6 *No Conclusion*—When there are significant limiting factors, a report that no conclusion can be reached is appropriate. This opinion requires explanation of the limiting factors.

## 9. Keywords

9.1 facsimile devices; forensic sciences; ink jet; photocopiers; questioned documents

## BIBLIOGRAPHY

(1) Doherty, P., "Classification of Ink Jet Printers and Inks," *Journal of the American Society of Questioned Document Examiners*, Vol 1,

No. 2, December 1998, pp. 88-106.

*ASTM International takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this standard. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.*

*This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, at the address shown below.*

*This standard is copyrighted by ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, United States. Individual reprints (single or multiple copies) of this standard may be obtained by contacting ASTM at the above address or at 610-832-9585 (phone), 610-832-9555 (fax), or service@astm.org (e-mail); or through the ASTM website (www.astm.org). Permission rights to photocopy the standard may also be secured from the ASTM website (www.astm.org/COPYRIGHT/).*

**EXHIBIT 11**

**EXHIBIT 11**

**EXHIBIT 11**

# Comparisons of Q1 through Q4 images

## Q1- direct crop from "original tiff" file, not reprinted or rescanned

each day the project is delayed beyond that point.  
e agreed upon project due date ifor the StreetFax software is  
*Providing web Designer is finished by May 27, 2003*  
on completion for the expanded project with working title

COI  
for  
Th  
Pu

## Q2- direct crop from June 30, 2010 filed version, not reprinted or rescanned

each day the project is delayed beyond that point.  
is agreed upon project due date ifor the StreetFax software is  
*Providing web Designer is finished by May 27, 2003*  
on completion for the expanded project with working title

COI  
for  
Th  
Pu

## Q3- direct crop from Aginsky scan, not reprinted or rescanned

each day the project is delayed beyond that point.  
e agreed upon project due date ifor the StreetFax software is  
*Providing web Designer is finished by May 27, 2003*  
on completion for the expanded project with working title

COI  
for  
Th  
Pu

## Q4- direct crop from Blanco scan of original, not reprinted or rescanned, but adjusted

each day the project is delayed beyond that point.  
e agreed upon project due date ifor the StreetFax software is  
*Providing web Designer is finished by May 27, 2003*  
on completion for the expanded project with working title.

COI  
for  
Th  
Pu



# Enlargements of direct crops

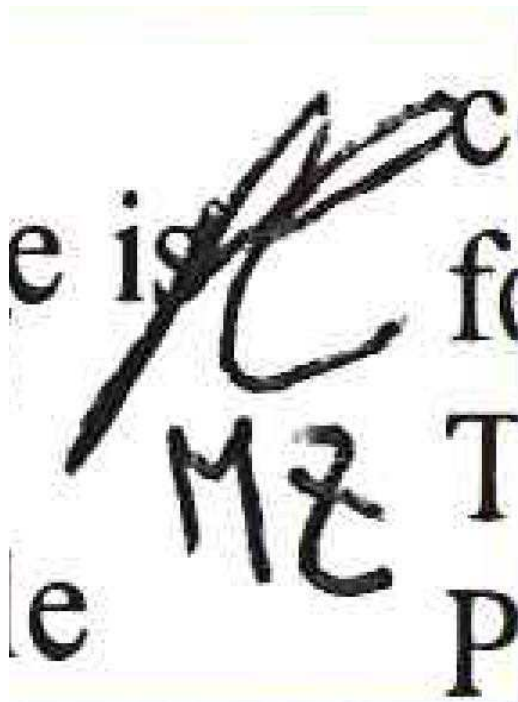
Q1- "original tiff"



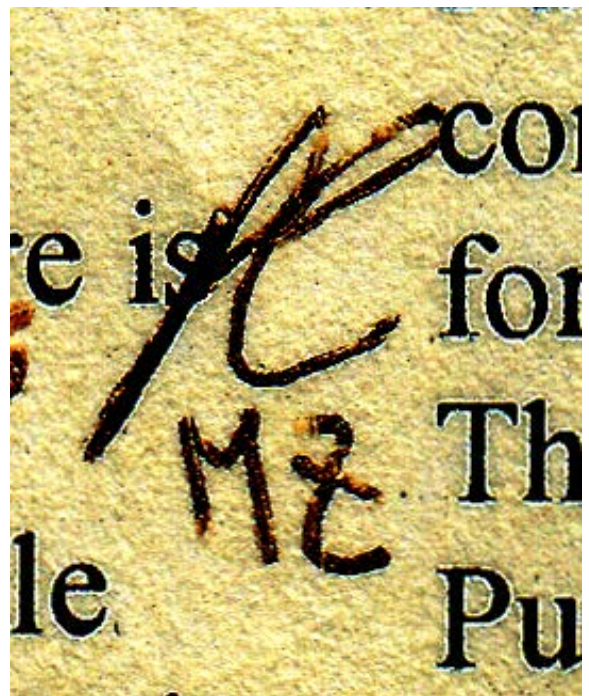
Q2



Q3

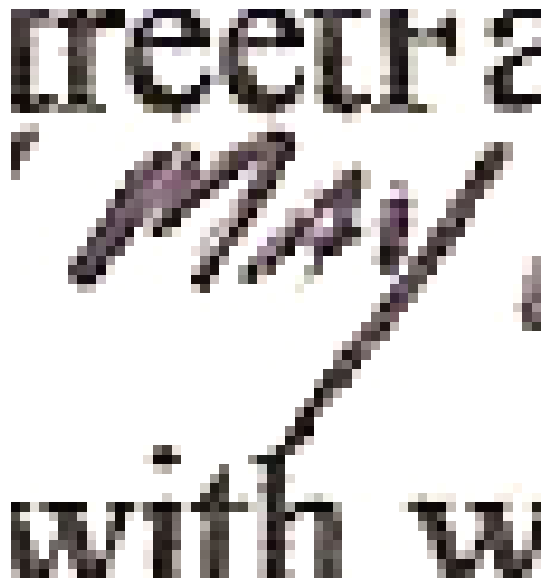


Q4



# Enlargements of direct crops

Q1- "original tiff"



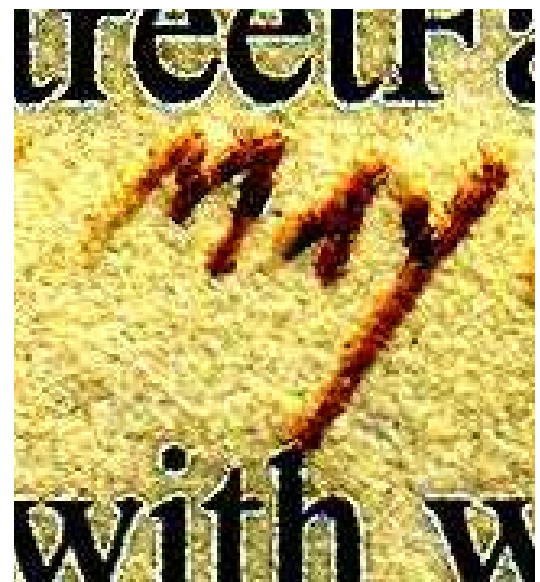
Q2



Q3



Q4





**EXHIBIT 12**

**EXHIBIT 12**

**EXHIBIT 12**

**Q1 June 27 2010 tiff file sent by Ceglia to Argentieri**  
**Note: all imagery is from the same source document file**

Note the perceived changes introduced by changes in scanning, and, or output

Crop of "original tiff" file (which shows file properties of 200 ppi)

each day the project is delayed beyond that point.  
I have agreed upon project due date for the StreetFax software is  
*Providing web design is finished by May 27, 2003*  
on completion for the expanded project with working title

COI  
for  
Th  
Pu

Test- 300 ppi scan of printout of "original tiff" file

each day the project is delayed beyond that point.  
I have agreed upon project due date for the StreetFax software is  
*Providing web design is finished by May 27, 2003*  
on completion for the expanded project with working title

con  
for  
The  
Pur

Test- 150 ppi scan of printout of "original tiff" file

each day the project is delayed beyond that point.  
I have agreed upon project due date for the StreetFax software is  
*Providing web design is finished by May 27, 2003*  
on completion for the expanded project with working title

COI  
consi  
for the  
The  
Purci

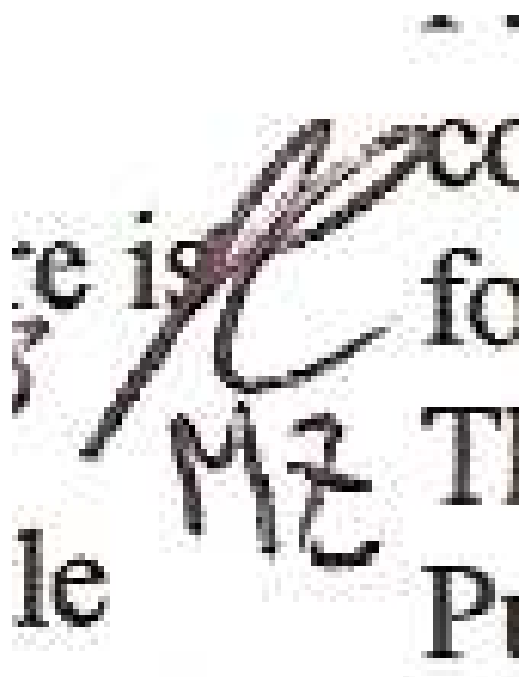
Test- 75 ppi scan of printout of "original tiff" file

each day the project is delayed beyond that point.  
I have agreed upon project due date for the StreetFax software is  
*Providing web design is finished by May 27, 2003*  
on completion for the expanded project with working title

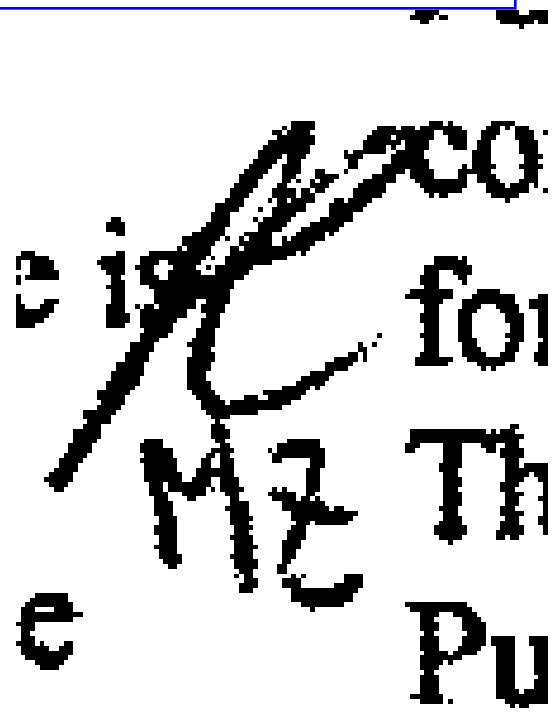
COI  
for  
The  
Pur



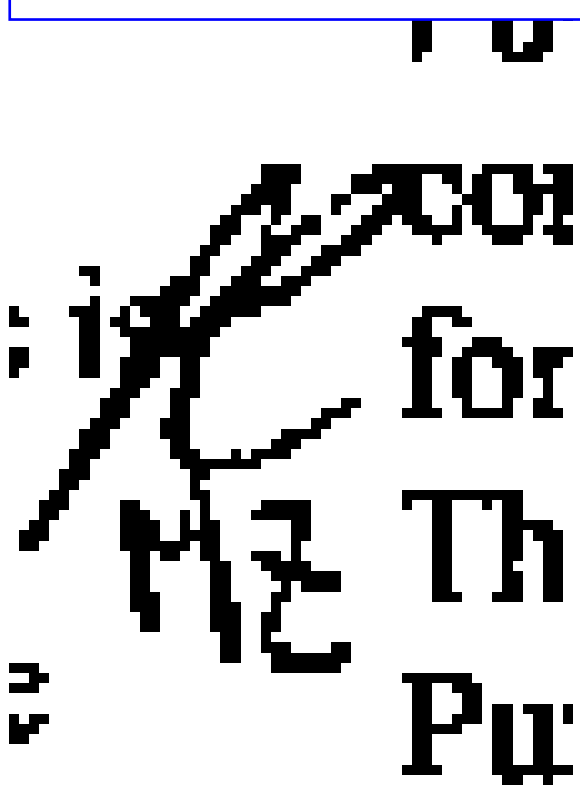
Q1- "original tiff"  
(direct crop from tiff)



Q1- 300 ppi



Q1- 150 ppi



Q1- 75 ppi



**EXHIBIT 13**

**EXHIBIT 13**

**EXHIBIT 13**

## OVERLAY of "Q1" over "Q3"

Q1 has been rendered in red for comparison purposes

each day the project is delayed beyond that point.  
e agreed upon project due date ifor the StreetFax software is  
*Providing web designer is finished by MAY 27, 2003*  
on completion for the expanded project with working title

Q3 color unchanged (image is black and white)

each day the project is delayed beyond that point.  
e agreed upon project due date ifor the StreetFax software is  
*Providing web designer is finished by MAY 27, 2003*  
on completion for the expanded project with working title



# Progression of overlay of Q1 over Q3

## Step 1- Q1 is offset from Q3

each day the project is delayed beyond that point.

e agreed upon project due date ifor the StreetFax software is

each day the project is delayed beyond that point.

e a . Provision completion for the expanded project with working title

. Provision completion for the expanded project with working title

on completion for the expanded project with working title

## Step 2- Q1 positioned closer to Q3

each day the project is delayed beyond that point.

e agreed upon project due date ifor the StreetFax software is

each day the project is delayed beyond that point.

e a . Provision completion for the expanded project with working title

. Provision completion for the expanded project with working title

on completion for the expanded project with working title

## Step 3- Q1 positioned over the top of Q3

each day the project is delayed beyond that point.

e agreed upon project due date ifor the StreetFax software is

. Provision completion for the expanded project with working title

on completion for the expanded project with working title



**EXHIBIT 14**

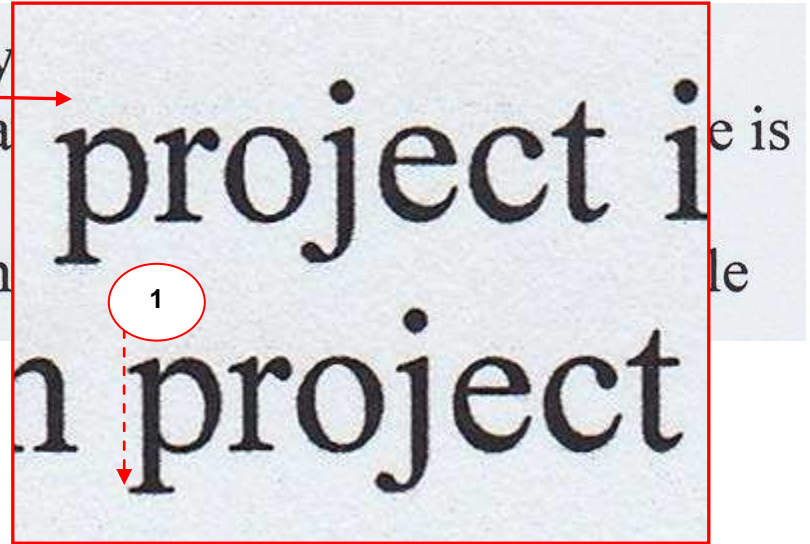
**EXHIBIT 14**

**EXHIBIT 14**

# Demonstration: copying an original can cause changes to the appearance of typed and written information

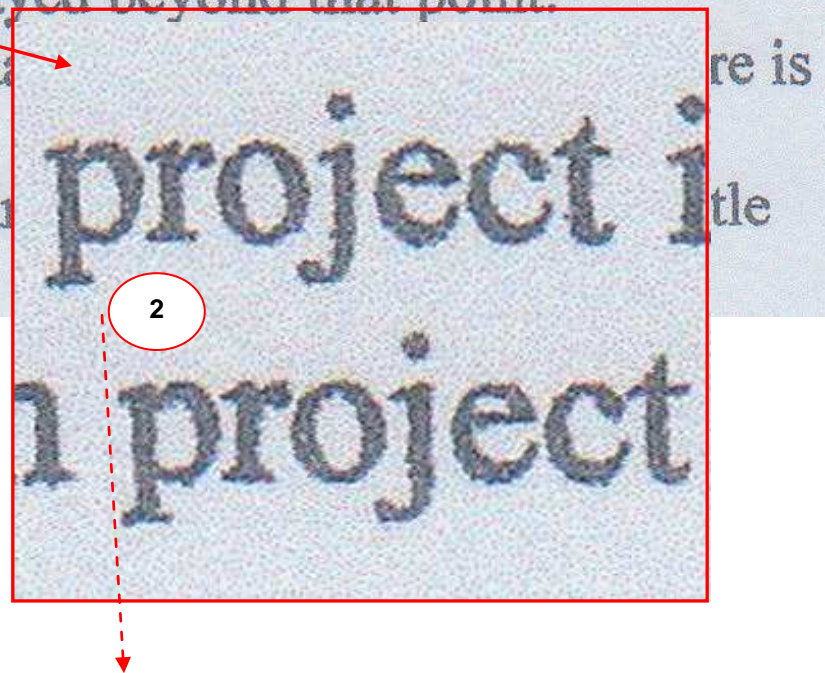
Original test sample used for machine printing tests.  
Sample created using MSWord; Times New Roman at 12 points

each day the project is delay  
e agreed upon project due da  
on completion for the expans



Same test sample was printed, copied, scanned and printed again

each day the project is delayed beyond that point.  
e agreed upon project due da  
on completion for the expans



The staff of the “p” (dashed arrow 2) is slanted backwards in comparison to the other printed characters around it. The reproduction/copy process innocently caused a change to the original observed above (compare to dashed arrow 1)





**EXHIBIT 15**

**EXHIBIT 15**

**EXHIBIT 15**



# Standard Guide for Examination of Altered Documents<sup>1</sup>

This standard is issued under the fixed designation E2331; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 This Guide provides procedures for examinations that should be used by forensic document examiners (Guide E444) for examinations involving altered documents.

1.2 These procedures are applicable whether the examination(s) are of questioned and known items, exclusively questioned items, or a single item.

1.3 These procedures include evaluation of the sufficiency of the material 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.

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>

E444 Guide for Scope of Work of Forensic Document Examiners

E1422 Guide for Test Methods for Forensic Writing Ink Comparison

E1732 Terminology Relating to Forensic Science

E2195 Terminology Relating to the Examination of Questioned Documents

E2291 Guide for Indentation Examinations

## 3. Terminology

### 3.1 Definitions:

3.1.1 For definitions of terms in this guide, refer to Terminologies E1732 and E2195.

### 3.2 Definitions:

3.2.1 *alteration, n*—a modification made to a document by physical, chemical or mechanical means including, but not limited to, obliterations, additions, overwritings, or erasures.

3.2.2 *digital image, n*—an image that is stored in numerical form.<sup>3</sup>

3.2.3 *digital image processing, n*—any activity that transforms a digital image.

3.2.4 *electrostatic detection device (EDD), n*—an instrument that uses electrostatic charge as the mechanism to visualize paper fiber disturbances (for example, indentations, erasures, typewritten material/lift off).

3.2.5 *erasure, n*—the area where material has been removed from a document by chemical, abrasive, or other means.

3.2.6 *fluorescence, n*—a process by which radiant flux of certain wavelengths is absorbed and reradiated non-thermally at other, usually longer, wavelengths. **E1422**

3.2.7 *infrared (IR), n*—referring to radiant flux having wavelengths longer than the wavelengths of light, usually wavelengths from about 760 nm to about 3 mm. **E1422**

3.2.8 *infrared luminescence (IRL), n*—the emission of radiant energy during a transition from an excited electronic state of an atom, molecule, or ion to a lower electronic state (fluorescence or phosphorescence, or both), where the spectrum of the excitation source is in the ultraviolet (UV) or visible region of the electromagnetic spectrum, or both, and the spectrum of the emitted energy is in the far red or infrared (IR) region of the electromagnetic spectrum. **E1422**

3.2.9 *side lighting, n*—illumination from a light source that is at a low angle of incidence, or even parallel, to the surface of the item. Syn., *oblique lighting*.

3.2.10 *transmitted light, n*—illumination that passes through a document.

3.2.11 *ultraviolet (UV), n*—referring to radiant flux having wavelengths shorter than the wavelengths of light, usually wavelengths from about 10 to 380 nm. **E1422**

3.2.11.1 *Discussion*—Long-wave UV usually refers to the spectral range of UV-A, with wavelengths from about 315 to 380 nm. Short-wave UV usually refers to the spectral range of UV-C, with wavelengths from 100 to 280 nm.

<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.

Current edition approved March 1, 2004. Published April 2004. DOI: 10.1520/E2331-04.

<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.

<sup>3</sup> Scientific Working Group on Imaging Technologies (SWGIT) Definitions and Guidelines for the Use of Imaging Technologies in the Criminal Justice System, Forensic Science Communications, July 2001, Vol 3, Num. 3.

#### 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 a document has been altered.

#### 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 comparability, or condition of the items submitted for examination (for example, items that are stained, soiled, water-damaged, charred, or shredded). 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 examine certain characteristics. Whenever possible, document examinations should be conducted prior to any chemical processing. Items should be handled appropriately to avoid compromising subsequent examinations.

#### 6. Equipment and Requirements

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

NOTE 1—Natural light, incandescent or fluorescent sources, or fiber optic lighting systems are generally utilized. Transmitted illumination, side lighting, and vertical incident lighting may be useful in a variety of situations.

6.2 Magnification sufficient to allow fine detail to be distinguished.

6.3 The following additional equipment may be used as required:

6.3.1 IR image conversion device or system with appropriate light sources and filters for use in IR and IR luminescence examinations.

6.3.2 UV lamps or view box, with both long and short wavelength lamps.

6.3.3 Imaging or other equipment for recording observations.

6.3.4 Measuring devices (for example, typewriter grids, magnifiers with reticule patterns, or appropriate software).

6.3.5 Electrostatic detection device.

6.3.6 Other equipment as appropriate.

6.4 Sufficient time and facilities to complete all applicable procedures.

#### 7. Procedure

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

7.1 Examinations performed, relevant observations, and results shall be documented.

7.2 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 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.

7.3 Examine the document for the presence of characteristics indicative of alterations. These can include, but are not limited to, the following:

NOTE 2—Care must be taken in the evaluation of the following characteristics that may occur in the normal preparation, handling, and storage of the document.

7.3.1 Overwriting,

7.3.2 Characteristics of multiple writing instruments,

7.3.3 Crowded or awkward placement of writing and/or printed text,

7.3.4 Paper fiber disturbance,

7.3.5 Use of different fonts, sizes, and/or styles,

7.3.6 Area(s) of discoloration,

7.3.7 Presence of an obscuring substance,

7.3.8 Smearing,

7.3.9 Uneven margins,

7.3.10 Different printing processes,

7.3.11 Irregular spacing and alignment, both vertical and horizontal,

7.3.12 Differences in fastening and binding mark,

7.3.13 Inconsistent handwriting features,

7.3.14 Unusual sequence of line intersections contrary to what may be claimed, and

7.3.15 Variations in paper characteristics.

#### NON-DESTRUCTIVE EXAMINATIONS

7.4 Non-destructive procedures shall be performed when applicable and need not be performed in the order given.

7.5 Examine the document macroscopically, or microscopically, or both.

7.6 Examine the document using various lighting techniques, such as side lighting (see Guide E2291), and transmitted lighting.

7.7 Examine the document using visualizing techniques such as UV, RIR, and IRL (see Guide E1422).

7.8 Make appropriate measurements.

7.9 Process the document using an EDD.

7.10 Examine the document with appropriate imaging techniques, such as photography or digital image processing.

7.11 Analyze, compare, and evaluate the findings.

7.12 Determine the need for destructive examinations. If unnecessary, discontinue examinations, reach a conclusion(s), and report accordingly.

#### DESTRUCTIVE EXAMINATIONS

7.13 Destructive examination techniques damage or otherwise change the document. They should be performed only after non-destructive methods have been exhausted.

7.13.1 The use of destructive examination methods may interfere with the potential for other types of forensic examinations (for example, chemical ink or latent print examinations).

7.13.2 Consultation with the submitter is advisable prior to destructive testing.

7.13.3 Prior to using these techniques, the item(s) should be appropriately documented.

7.13.4 These destructive techniques need not be performed in the order given.

7.14 Where an obscuring substance is present, use a solvent (for example, petroleum ether, liquid fluorocarbons) to make the paper translucent for visualization of any obscured entry(s).

NOTE 3—Prolonged exposure to solvents may affect the obscuring substance.

7.15 To remove an obscuring substance from the document(s), use of a solvent such as methanol or ethanol may be appropriate.

NOTE 4—Some solvents may dissolve ink or toner.

7.16 Physically remove (for example, abrade, scrape, or peel) the obscuring substance from the document.

7.17 For chemical ink examinations refer to Guide [E1422](#).

NOTE 5—Chemical ink examinations may be conducted by other forensic specialists.

7.18 Analyze, compare, and evaluate the findings.

7.19 Reach a conclusion(s), and report accordingly.

## 8. Report

8.1 Conclusion(s), or opinion(s), or other finding(s) resulting from the procedures in this guide may be reached once sufficient examinations have been conducted.

8.2 The bases and reasons for the conclusion(s), opinion(s), or finding(s) should be included in the examiner's documentation and may also appear in the report.

8.3 Once examinations and evaluations have been completed, reports may include one or more of the following types of conclusion(s), opinion(s), and other finding(s):

8.3.1 Whether alterations were observed.

8.3.2 Whether any of the altered entries were decipherable.

8.3.3 The text or description of altered entries.

8.3.3.1 Method or sequence of alterations.

8.3.4 Images of alterations and original entries.

8.3.5 Other information about the alterations.

## 9. Keywords

9.1 alterations; erasures; forensic sciences; insertions; obliterations; overwriting; questioned documents

*ASTM International takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this standard. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.*

*This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, at the address shown below.*

*This standard is copyrighted by ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, United States. Individual reprints (single or multiple copies) of this standard may be obtained by contacting ASTM at the above address or at 610-832-9585 (phone), 610-832-9555 (fax), or [service@astm.org](mailto:service@astm.org) (e-mail); or through the ASTM website ([www.astm.org](http://www.astm.org)). Permission rights to photocopy the standard may also be secured from the ASTM website ([www.astm.org/COPYRIGHT/](http://www.astm.org/COPYRIGHT/)).*



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

This standard is issued under the fixed designation E2290; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 This guide provides procedures that should be used by forensic document examiners (Guide E444) 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>

E444 Guide for Scope of Work of Forensic Document Examiners

E1658 Terminology for Expressing Conclusions of Forensic Document Examiners

E1732 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.

Current edition approved April 15, 2007. Published July 2007. Originally approved in 2003. Last previous edition approved in 2007 as E2290 – 07. DOI: 10.1520/E2290-07A.

<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.

## E2195 Terminology Relating to the Examination of Questioned Documents

## 3. Terminology

3.1 For definitions of terms in this guide, refer to Terminologies E1732 and E2195.

### 3.2 Definitions:

3.2.1 *known, n/adj*—of established origin associated with the matter under investigation. **E1732**

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. **E1732**

### 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. Contemporaneousness 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.

7.6 Determine whether the questioned writing appears to be distorted. If it appears to be distorted, determine whether it is possible to establish that the apparently distorted writing is natural writing.

7.6.1 If it is not natural writing, or if it is not possible to establish whether the apparently distorted writing is natural writing, determine whether the apparently distorted writing is suitable for comparison and proceed to the extent possible. If the available questioned writing is not suitable for comparison, discontinue these procedures and report accordingly.

7.7 Evaluate the questioned writing for the following:

7.7.1 *Type of Writing*—If there is more than one type of writing within the questioned writing, separate the questioned writing into groups of single types of writing.

7.7.2 *Internal Consistency*—If there are inconsistencies within any one of the groups created in 7.7.1 (for example, suggestive of multiple writers), divide the group(s) into sub-groups, each one of which is consistent.

7.7.3 Determine range of variation of the writing for each group or sub-group of the questioned writing created in 7.7.1 and 7.7.2.

7.7.4 Determine presence or absence of individualizing characteristics.

7.7.5 If the examination is a comparison of exclusively questioned writing, go to 7.12.

7.8 Determine whether the known writing is original writing. If it is not original writing, request the original.

NOTE 5—Examination of the original known writing is preferable.

7.8.1 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.

7.9 Determine whether the known writing appears to be distorted. If it appears to be distorted, determine whether it is possible to establish that the apparently distorted writing is natural writing.

7.9.1 If it is not natural writing, or if it is not possible to establish whether the apparently distorted writing is natural writing, determine whether the apparently distorted writing is suitable for comparison and proceed to the extent possible. It should be determined whether additional known writing would be of assistance, and if so, it should be requested. If the available known writing is not suitable for comparison, discontinue these procedures and report accordingly.

7.10 Evaluate the known writing for the following:

7.10.1 *Type of Writing*—If there is more than one type of writing within the known writing, separate the known writing into groups of single types of writing.

7.10.2 *Internal Consistency*—If there are unresolved inconsistencies within any of the groups created in 7.10.1 (for example, suggestive of multiple writers), contact the submitter for authentication. If any inconsistencies are not resolved to the examiner's satisfaction, discontinue these procedures for the affected group(s), and report accordingly.

7.10.3 Determine range of variation of the writing for each group of the known writing created in 7.10.1 and 7.10.2.

7.10.4 Determine presence or absence of individualizing characteristics.

7.11 Evaluate the comparability of the bodies of writing (questioned writing to known writing or exclusively questioned writing).

7.11.1 If the bodies of writing are not comparable, discontinue comparison and request comparable known writing, if appropriate.

7.11.1.1 If comparable known writing is made available, return to 7.10. If comparable known writing is not made available, discontinue these procedures and report accordingly.

7.12 Conduct a side-by-side comparison of comparable portions of the bodies of writing.

7.12.1 Determine whether there are differences, absent characters, and similarities.

7.12.2 Evaluate their significance individually and in combination.

7.12.3 Determine if there is a sufficient quantity of writing (questioned writing, or known writing, or both).

7.12.3.1 If writing (questioned writing, or known writing, or both) is not sufficient in quantity for an elimination or an identification, continue the comparison to the extent possible. When appropriate, request more known writing. If more known writing is made available, return to 7.10.

7.12.4 Analyze, compare, and evaluate the individualizing characteristics and other potentially significant features present in the comparable portions of the bodies of writing.

NOTE 6—Among the features to be considered are elements of the writing such as abbreviation; alignment; arrangement, formatting, and positioning; capitalization; connectedness and disconnectedness; cross strokes and dots, diacritics and punctuation; direction of strokes; disguise; embellishments; formation; freedom of execution; handedness; legibility; line quality; method of production; pen hold and pen position; overall pressure and patterns of pressure emphasis; proportion; simplification; size; skill; slant or slope; spacing; speed; initial, connecting, and terminal strokes; system; tremor; type of writing; and range of variation.

Other features such as lifts, stops and hesitations of the writing instrument; patching and retouching; slow, drawn quality of the line; unnatural tremor; and guide lines of various forms should be evaluated when present.

Potential limiting factors such as age; illness or injury; medication, drugs or alcohol (intoxication or withdrawal); awkward writing position; cold or heat; fatigue; haste or carelessness; nervousness; nature of the document, use of the unaccustomed hand; deliberate attempt at disguise or auto-forgery should be considered.

For further details, see the referenced texts.

7.12.5 Evaluate the similarities, differences, and limitations. Determine their significance individually and in combination.

7.13 Form a conclusion based on results of the above analyses, comparisons, and evaluations.

## 8. Reporting Conclusions

8.1 The conclusion(s) or opinion(s) resulting from the procedures in this guide may be reached once sufficient examinations have been conducted. The number and nature of the necessary examinations is dependent on the question at hand.

8.2 The bases and reasons for the conclusion(s), or opinion(s), should be included in the examiner's documentation and may appear in the report.

8.3 Refer to Terminology **E1658** for reporting conclusion(s) or opinion(s).

## 9. Keywords

9.1 forensic sciences; handwriting; questioned documents

## REFERENCES

- (1) Conway, J. V. P., *Evidential Documents*, Springfield, IL, Charles C. Thomas, 1959.
- (2) Harrison, W. R., *Suspect Documents*, London, Sweet and Maxwell, 1958 and 1966.
- (3) Hilton, O., *Scientific Examination of Questioned Documents*, New York, Elsevier, 1982.
- (4) Huber, R. A. and Headrick, A. M., *Handwriting Identification: Facts and Fundamentals*, Boca Raton, FL, CRC Press, 1999.
- (5) Osborn, A. S., *Questioned Documents*, 2d ed., Albany, NY, Boyd Printing Co., 1929.

*ASTM International takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this standard. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.*

*This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, at the address shown below.*

*This standard is copyrighted by ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, United States. Individual reprints (single or multiple copies) of this standard may be obtained by contacting ASTM at the above address or at 610-832-9585 (phone), 610-832-9555 (fax), or [service@astm.org](mailto:service@astm.org) (e-mail); or through the ASTM website ([www.astm.org](http://www.astm.org)). Permission rights to photocopy the standard may also be secured from the ASTM website ([www.astm.org/COPYRIGHT/](http://www.astm.org/COPYRIGHT/)).*