

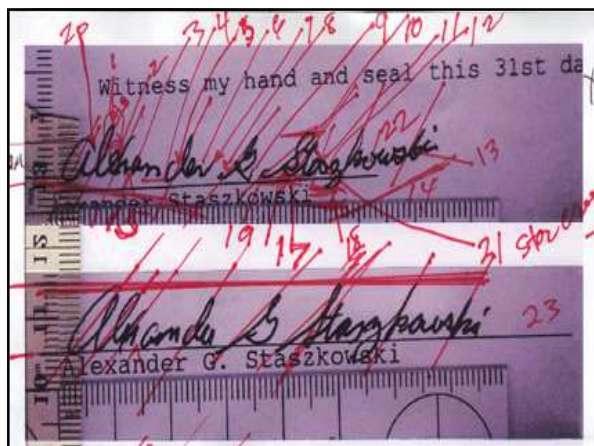
WHAT DOES "FORENSIC" MEAN?

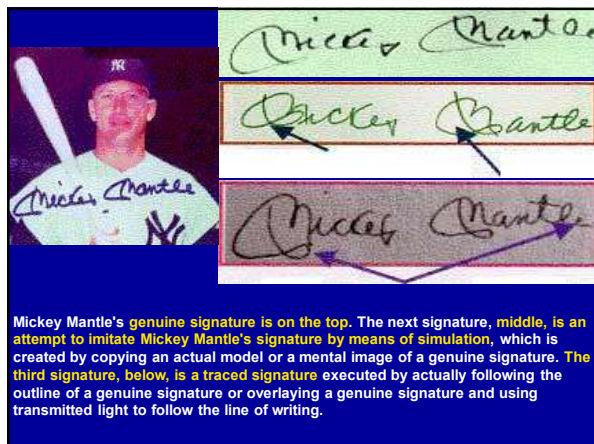




What do the terms "Forensic Science" and "Forensic Document Examination" mean?

Forensic science is the application of various sciences to the law. The application of applied sciences and analytical techniques to questions concerning documents is termed forensic document examination. The examination of questioned documents consists of the analysis and comparison of questioned handwriting, hand printing, typewriting, commercial printing, photocopies, papers, inks, and other documentary evidence with known material in order to establish the authenticity of the contested material as well as the detection of alterations.





HANDWRITING IS BRAIN WRITING

Handwriting originates in the brain when a mental picture of letters and words are formed. The signal to try to duplicate the mental picture is sent to the arm and hand through the muscles and nervous system.

Chart 1: Illustration Showing that the Q1 Signature is a Reproduction of the Q2 Signature

Image 1: Q1: December 5, 1996
Francis McNeil
Signature of Life Insurance Annuitant

Q2: October 6, 1992
Francis McNeil
SIGNATURE OF MEMBER

Image 2: The Q1 signature has been enlarged by 107% to account for differences in size that result from facsimile transmission. The signatures have been off-set slightly to demonstrate the similarities between the original and the facsimile.

Francis McNeil
Signature of Life Insurance Annuitant

Image 3: The Q1 signature registers perfectly with the Q2 signature. Note that even the pre-printed signature lines align.

Francis McNeil
Signature of Life Insurance Annuitant

As no two signatures can be exactly alike, the ability to perfectly align two of them confirms that one is a copy of the other.

Documents in Dispute

Chart 1: Signature Comparison with Differences Denoted in Red

Questioned Signature

Enlargement

K1

K2

K3




K4

Sample Signatures

1. triangular base in the "t"
2. connection of the "t" and "l"
3. horizontal termination of the "a"
4. poor writing quality in the eyelet of the "H"
5. angular connecting stroke between the "H" and "a"
6. angular connection from the "m" to "i" and the "i" to "l"
7. open, tented style of "i"
8. closed loop in the "l"
9. extraneous movement receding the "o"
10. long, relatively straight terminal stroke.

There are also questions about
typewriting or printing processes:

- Are both documents typed on the same machine?
- Was the document removed from the typewriter and later reinserted during its preparation?
- Did a particular person do the Typing?
- What type of printer, or what printing process was used to print the document?

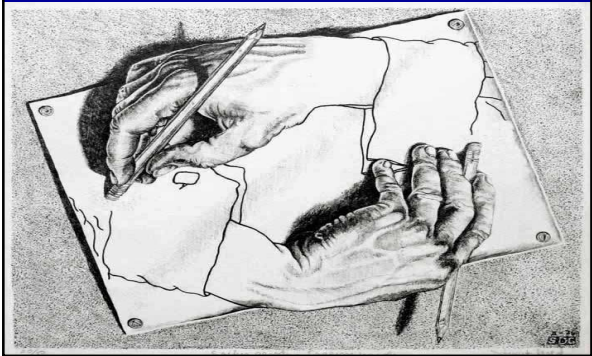


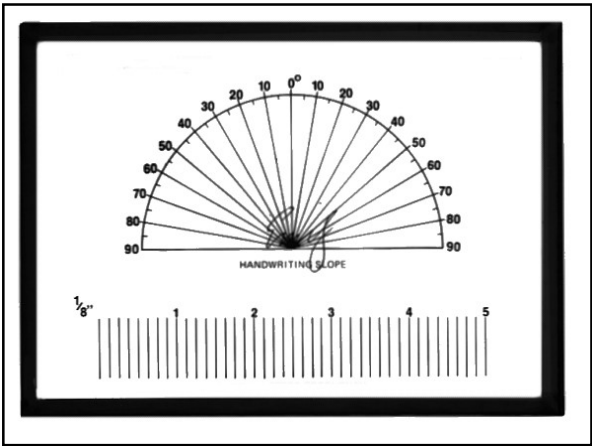
UNIBOMBER'S TYPEWRITER

Some questions are not concerned with handwriting or typewriting:

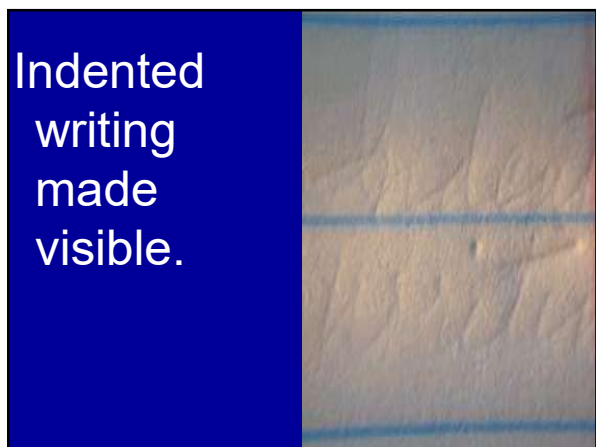
- Are there erasures on the document?
- Are there alterations or obliterations on the document?
- What was originally written before the alteration or under the obliteration?
- Are there perforations, folds, staple holes, or other physical clues on the document?
- Was the entire document rewritten, or was it prepared sequentially, over a period of time?

TOOLS OF THE TRADE









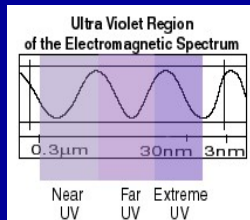
Indented
writing
made
visible.

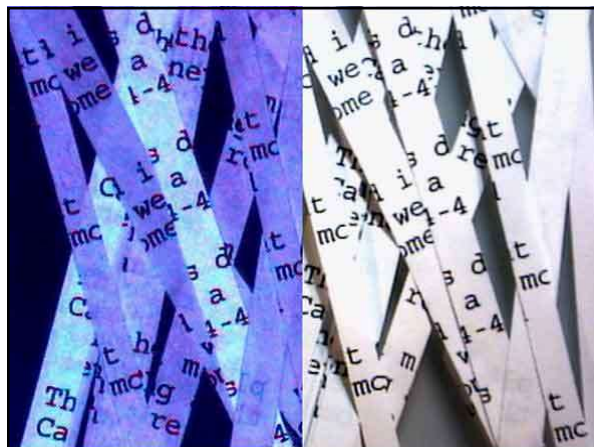


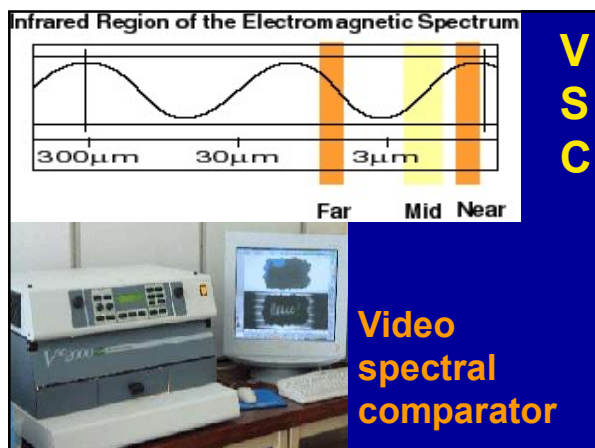
ESDA

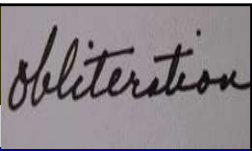

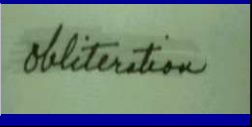
Electrostatic
Detection Apparatus

Ultraviolet light can distinguish differences in the brighteners used on white paper by manufacturers. This is useful in determining if pages in a multiple-page document have been substituted.

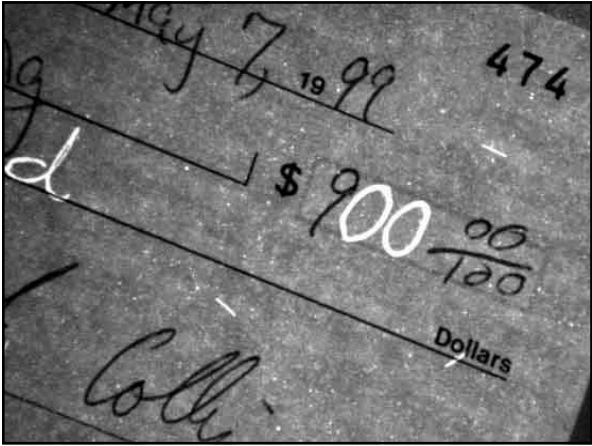






Infrared Demonstration	
Original Word	
Same word obliterated with black marker	
Using infrared, the original word becomes visible	





FREQUENTLY ASKED QUESTIONS

- Is the signature genuine?
- Is the document forged, and if so is it forged by a particular person?
- Is the same person the author of several documents?
- Which of a group of people wrote an anonymous letter?
- Did someone guide a person's hand as a will was signed?
- Did the doctor come back later and alter the medical records?
- Did the signer of the document also initial the changes?
- What is written under the crossed out portion of the writing?
- Was the document written on the date indicated?

Should you find you need the services of an examiner:

- Obtain the original when possible. A photocopy is at best a pictorial representation of the original.
- Place it in a protective sleeve, Mylar or plastic.
- Obtain known writings (considered valid) from as near the date of the questioned writing as possible.
- Acquire the services of a qualified certified document examiner whose performance and reputation you trust.

One of the most commonly asked questions of forensic document examiners is, "What kind of handwriting specimens do you need for comparison purposes?"

There are two categories of known writings submitted for comparison with questioned handwritten material:

- **Collected** (non-request) writings (handwriting standards), are writings executed in the normal course of business and are unrelated to the case under investigation.
- **Requested** writings (exemplars) consist of handwriting, signatures or printing produced solely for the purpose of conducting a handwriting comparison. "Requested" specimens are often prepared at the request of the person seeking the services of a handwriting expert.

"Collected" standards have the following advantages:

- Since they are usually naturally written, influences attributed to disguise or nervousness are usually not a factor.
- They can be selected to be contemporaneous with the date of the questioned document.

"Collected" standards also have a number of disadvantages:

- It can be difficult to prove who wrote them. The conditions that prevailed at the time of writing are often unknown.
- They may have been produced by different writing materials than those used to prepare the questioned document. It is difficult to locate samples that contain repetitions of the questioned text.

"Requested" exemplars are written by an individual at the request of, and in the presence of a witness.

- They are of value in handwriting comparison because the investigator controls the test and ensures that it is directly comparable to the questioned entries.
- The investigator also controls the number of known documents prepared, so the document examiner is assured of having a sufficient number of examples of each of the questioned letter combinations and words for comparison.

Advantages Include:

- If prepared properly, they contain letters and letter combinations similar to those which appear in the questioned writing.
- They should contain repetitions of the questioned text and thus better represent the individual's full range of writing habits.
- They are usually admissible in court proceedings because they have been witnessed.
- They can be prepared with writing materials (i.e. pen, pencil, paper, cardboard, etc.) similar to those used to prepare the questioned document.
- The format or arrangement of the questioned writing can usually be duplicated.
- They can be prepared under similar writing conditions to those that prevailed when the questioned document was produced.

"Requested" exemplars also have certain disadvantages:

- The writing is done at one sitting, so the natural variation in the writing may not be as large as in collected writings made individually over a period of time and under varying conditions.
- The writing may not be entirely natural or representative of the writer's normal habits.
- The writer is aware of their purpose and, rather than being naturally and freely written, "requested" specimens may display features associated with nervousness.
- Knowing the writings are being collected for the purpose of comparison in an investigation, an innocent person may write more carefully than usual, and a guilty one may intentionally attempt to disguise his handwriting.

How Many samples are Needed for Comparison?

A forensic document examination cannot be adequately performed when comparing a single signature to only one other signature. Handwriting identification is based on habits that can only be determined through scrutinizing numerous specimens. While there are unusual cases where one or two signatures or a few typewritten lines will suffice, much depends on the nature of the question. In many cases the amount of standard material is an issue, begin to amass samples early in the investigation.

Suggested Standards

FINANCIAL:	PERSONAL:
Household, Personal Account Books	Library (This book belongs...)
Check Registers, Canceled Checks	(Bible, marginal notes, etc.)
Local, State, Federal Tax Returns	Public Library, Application, Card
Business, Employment records	Sales Receipts, Delivery signatures, etc.
Bookkeeping records	Greeting Card Notations
Payroll receipts, check signatures	Report Card signatures
Bank Signature Cards	School, class, seminar, etc. notes
Loan Applications	Inventories and other listings
Credit Applications	Identification/Membership Cards
Mortgage Applications, Guarantees, etc.	Recipes, Directions, etc.
Deposit/ Withdrawal slips	Photograph notations
Safe Deposit Box Access	Correspondence
Promissory notes	Address, phone book
Receipts	Diana's Date Books
Credit Cards, Rentals, Leases, etc.	Memoranda
Major Purchases	Manuscripts
House, Auto, Boat, Tax Returns	Registrations
Insurances	Personal Attendance Records
Leases and Rental Documents	Permits, Applications, Licenses
Stocks and Bonds - Broker documents	Passports
Pledges	Domestic, Foreign Licenses
Deeds, Mortgages	Memorabilia
Answers to Interrogatories	Self-Addressed Envelopes, Return Addresses, etc.
Powers of Attorney	Social Security
Bond/Surety Applications	Employment Review
Divorce Papers	Request for Change Forms
	Incorporation, Proceedings
	Mail Orders

Staying one step ahead



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