

# SIGNATURE COMPARISON TRAINING

For Elections Department Personnel



with  
Larry C. Liebscher  
Forensic Document Examiner (Ret.)

Ascender (Upper Zone) ————— *f l k*  
 Body (Middle Zone) ————— *a c e g i o r s*  
 Bow ————— *D*  
 Compound Curve ————— *2 5*  
 Cross Bar ————— *t*  
 Cusp ————— *s*  
 Descender ————— *g g y*  
 Eyelet ————— *e a*  
 Foot (Feet) ————— *m*  
   ↑↑↑  
 Hiatus ————— *none*  
 Hook ————— *t a*  
 Lower Loop (Descender/Lower Zone) ————— *g g y*  
 Retrace ————— *p*  
 Spur ————— *u b*  
 Staff (Stem) ————— *T*  
 Trough ————— *w y*  
 Upper Loop (Ascender/Upper Zone) ————— *f l k*

When the same distinctive, personal writing characteristics are found in both the known and unknown writing in sufficient number that the likelihood of accidental coincidence is eliminated—and there are no basic fundamental differences between the two sets of writing—then both must have been prepared by the same person.

Orway Hilton, *Scientific Examination of Questioned Documents*



Repeated small differences establish clearly that two specimens are the work of two individuals despite a great number of general similarities... If two writings are by the same person, then no fundamental differences should exist.

Ordway Hilton, *Scientific Examination of Questioned Documents*



*A single significant difference between the (known and unknown) specimens is a strong indication of two writers, unless the divergency can be logically accounted for by the facts surrounding the preparation of the specimens.*

Ordway Hilton, *Scientific Examination of Questioned Documents*



after that we found a good  
place to eat dinner. Tom went home  
and I got to sleep for a while. Things

**SKILLED**—Fast, rhythmic, tapered beginning/ending strokes, rounded letterforms, variance in pen pressure (shading), free movement (natural-look).

after that we found a good  
place to eat dinner. Tom went home  
and I got to sleep a while. Things

**UNSKILLED**—Slow, awkward, blunt beginning/ending strokes, angular letterforms, same pen pressure (no shading), restricted movement (drawn-look)

# FEATURES TO LOOK FOR IN SIGNATURE COMPARISONS

(Non-Exhaustive Listing)

SIZE

t-CROSSINGS

SLANT

SPEED

SPACING

LINE DIRECTION

PROPORTIONS

PEN LIFTS

INITIAL STROKES

TREMOR

CONNECTING STROKES

LETTER FORMATIONS

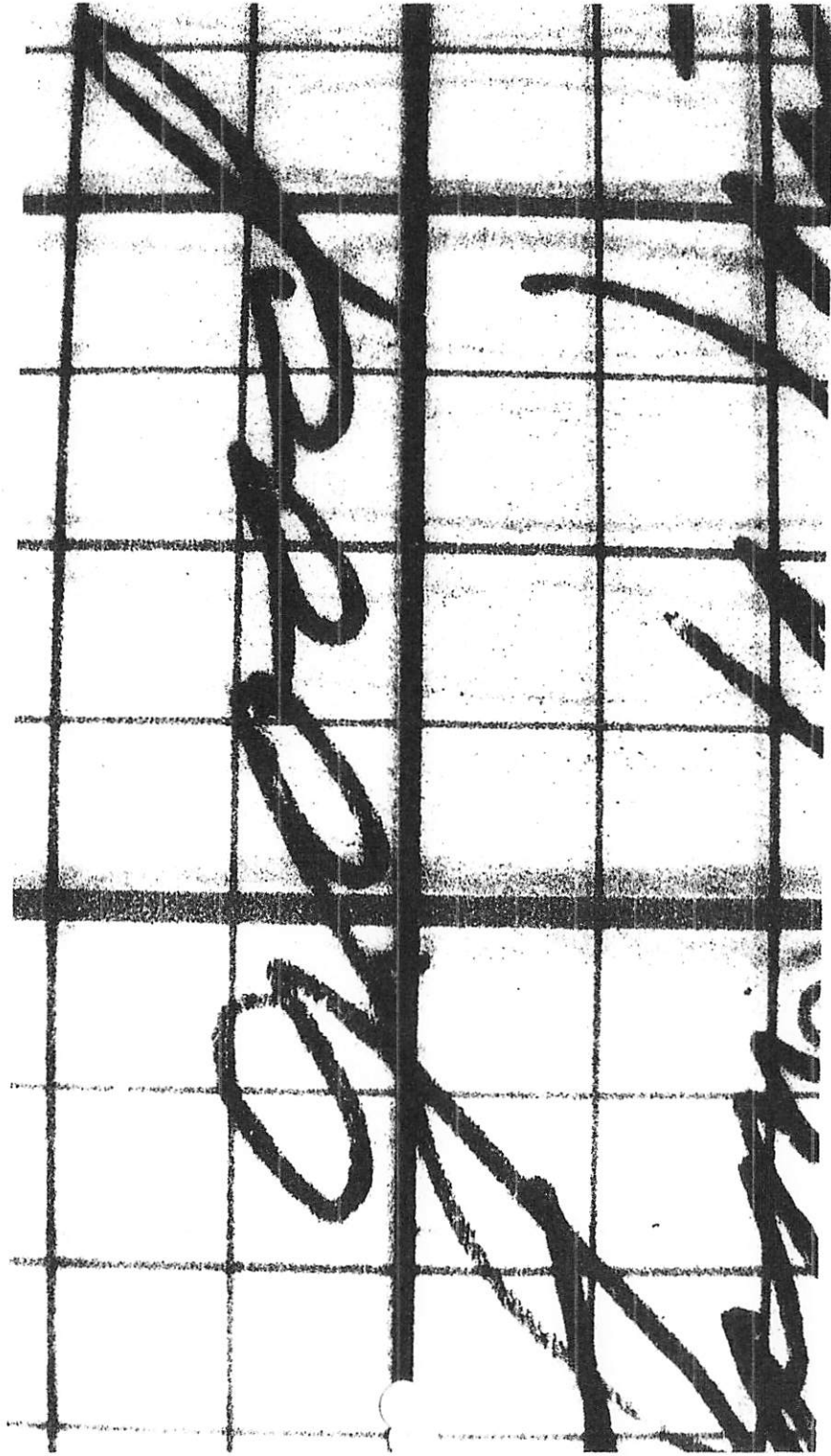
TERMINAL STROKES

INDIVIDUALITIES

ALIGNMENT

MARGIN PATTERNS

i-DOTS



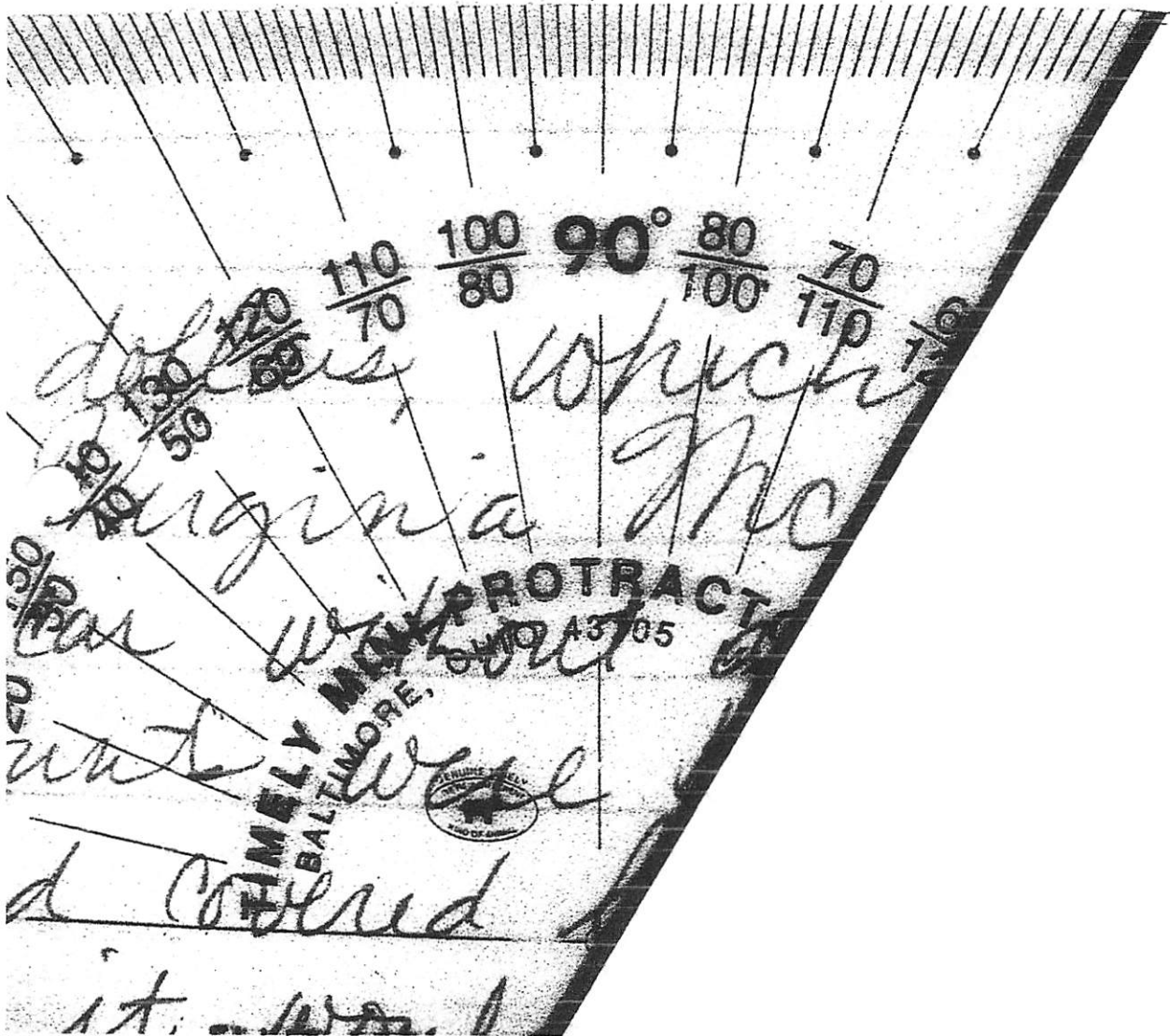
SIZE: 1/8" = 1 PT. MEASURING METHOD



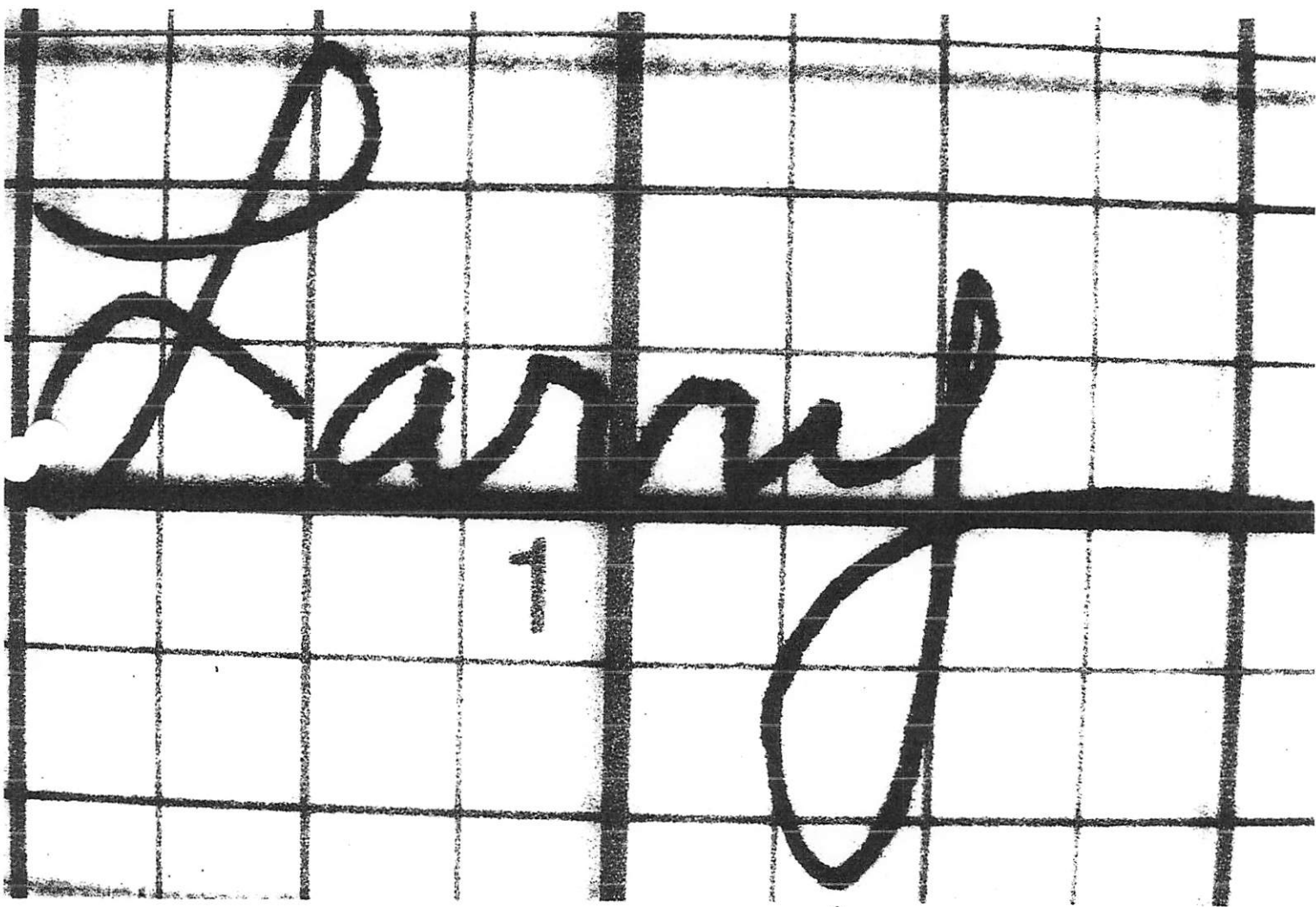
which Nick  
 Virginia McLong, we  
 can without trouble  
 want we \$ 10, \$ 123.  
 covered by a stick say  
 it would have been h

PROTRACTOR  
 MADE IN  
 BALTIMORE, MD  
 1905

SLANT



SLANT of "b" IN "by" = 60° RT. of VERTICAL



PROPORTIONS: "l" TO "a" = 3:1

## CONNECTING STROKES

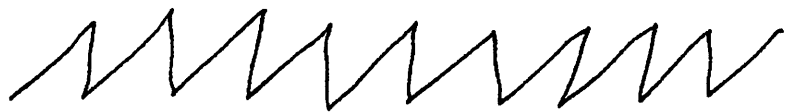
GARLAND



ARCADE



ANGULAR



THREADY



*The general appearance of writing can change from any cause that affects movement, such as different writing positions, stress, illness, undue restraint, accidents, use of drugs, and alcohol. Signatures may vary in general appearance depending on the occasion or purpose requiring a signature.*

*-Edna W. Robertson, Fundamentals of Document Examination*

STRAIGHTEDGE ASSISTED HANDWRITING

The baseline in a handwritten document is the ruled on the imaginary line on which the writing rests.

# FAST OR SLOW?

A

after that we found a good place to eat dinner. Tom went home and I got to sleep for a while. Things

B

after that we found a good place to eat dinner. Tom went home and I got to sleep a while. Things

## EAST HANDWRITING INDICATORS

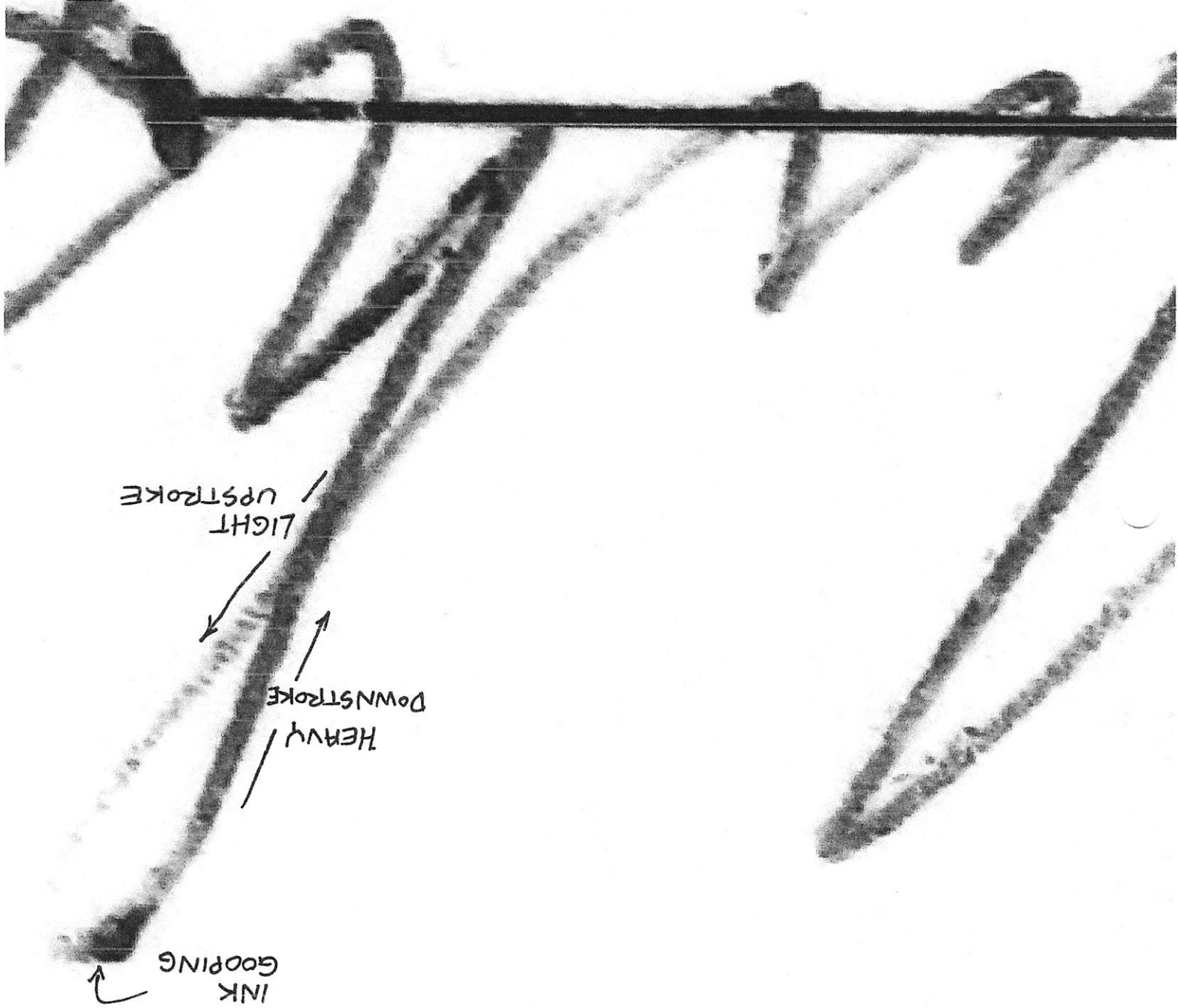
- Smooth, rounded letterforms.
- Pressure variance.
- Tapered beginning and ending strokes.
- Letters often become smaller toward word-end.
- Unreadable or illegible words; e.g., doctor's prescription.
- I-dots and t-crossings often misshaped and misplaced.
- Absence of tremor, angles, and patching.

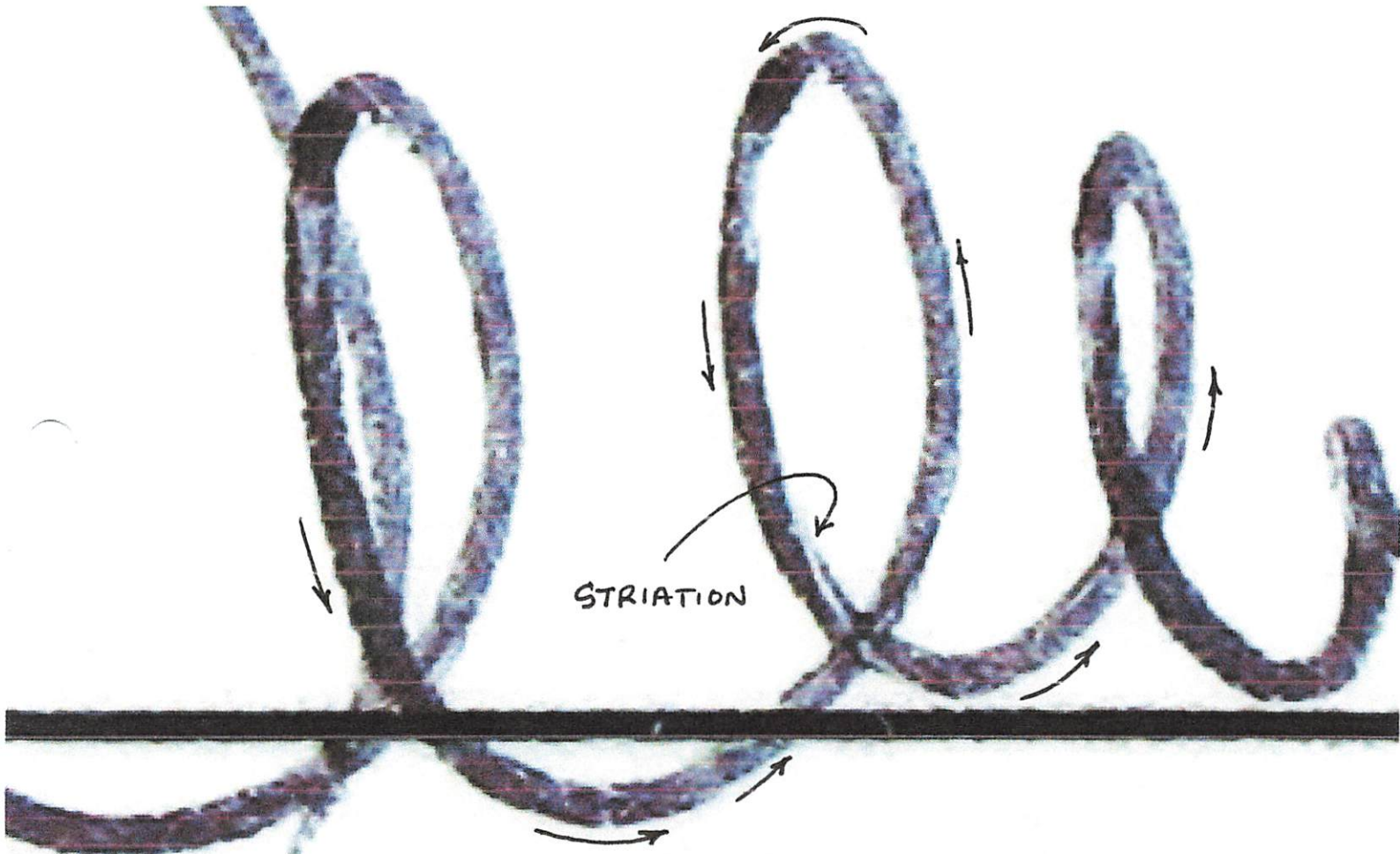
## SLOW HANDWRITING INDICATORS

- Angular letterforms.
- Heavy, constant pressure.
- Blunt beginning and ending strokes.
- Letters often become large toward word-end.
- Readable (often, but not always).
- Careful placement of i-dots and t-crossings.
- Presence of tremor, angles, and patching.



LIGHT UPSTROKES, HEAVY DOWNSTROKES  
GOOPING IMMEDIATELY AFTER SHORT CURVES





STRIATION

STRIATION INDICATING STROKE DIRECTION

*The identification of signatures constitutes a specialized branch of handwriting examination. Fundamentally, the identification principles set forth for general handwriting are the same, but certain factors require greater emphasis. Standards of known signatures may contain elements not common to other classes of the person's writing. An individual's signature is modified to suit a person's own needs and abilities.... The identifying attributes that are given closest study in signature problems may not always receive the same special consideration in the identification of general writing. (Howard C. Rile Jr., "Identification of Signatures", *Scientific Examination of Questioned Documents*, 2006)*

## GENUINE SIGNATURE CHARACTERISTICS

- Continuous movement v. Pen stops and pen lift interruptions.
- Rhythmic v. jerky movement.
- Shading and pen emphasis for certain strokes v. same writing pressure throughout (drawn-look).
- Rapid execution v. slow execution.
- Smooth, rounded letterforms and connecting strokes v. angular letterforms and connections.
- Tapered beginning and ending strokes v. blunt beginning and ending strokes.

## **ALCOHOL INFLUENCED SIGNATURE CHARACTERISTICS**

- Poor coordination, space perception, carelessness
- Spread out and larger than normal
- Less and less detail, illegibility
- Uneven baseline
- Bad aim in i-dots and t-crossings
- Part of letters or whole letters missing
- Extreme variance in writing pressure

## **FORGERY**

AS A LEGAL TERM:

**Every person who, with intent to defraud, signs another persons name, counterfeit, alters, falsifies, forges *documents...***

• • •

AS A DOCUMENT EXAMINATION TERM:

**Authentic v. non-authentic writings or documents**

*Writing habits, especially those of the experienced writer, are very strong and firmly implanted. When attempts are made to discard them, the usual result is an elimination of the prominent characteristics while numerous unconscious, but individual, writing traits are left unaltered. (Dan C. Purdy, "Identification of Handwriting," *Scientific Examination of Questioned Documents*, 2006)*

1

Eleonore Suzanne Gidion

2

Eleonore Suzanne Gidion

3

Eleonore Suzanne Gidion

4

Eleonore Suzanne Gidion

5

-23-

Eleonore Suzanne Gidion

WHICH SIGNATURE IS A SIMULATION? WHY?

(No. 5)



*Before any meaningful comparison can be made there is an indispensable first step to be undertaken: a determination of whether the writing under study was naturally made.*

*Irby Todd, The Process of Comparison*

## 8 Natural Writing Indicators

- 1) Smooth, continuous, rapid execution
- 2) Rounded letterforms
- 3) Misplaced and misshapen i-dots and t-crossings
- 4) Letters often taper illegibly near the end of words
- 5) Pressure difference between upstrokes and downstrokes
- 6) Tapered beginning and ending strokes
- 7) Letterform simplifications
- 8) Absence of approach strokes

**C.A.T.**

Comparable

Adequate

Timely

# Apples & Apples

Larry C. Liebscher | Larry C. Liebscher

# Apples & Oranges

Larry C. Liebscher | Barbara M. Jones

Larry C. Liebscher | LARRY C. LIEBSCHER

1. *Apple* A. *apple*

2. *apple* B. *apple*

3. *apple* C. *apple*

4. *apple* D. *Apple*

5. *Apple* E. *Apple*

6. *apple* F. *apple*

7. *apple* G. *apple*

8. *apple* H. *apple*

9. *apple* I. *apple*

10. *Apple* J. *apple*

11. *Apple* K. *apple*

12. *apple* L. *apple*

13. *apple* M. *apple*

14. *apple* N. *apple*

15. *apple* O. *apple*

16. *apple* P. *Apple*

17. *apple* Q. *Apple*

18. *apple* R. *Apple*

19. *apple* S. *apple*

20. *apple* T. *apple*

## Answers

1. Q
2. G
3. M
4. L
5. R
6. A
7. C
8. T
9. O
10. E
11. D
12. S
13. P
14. H
15. J
16. I
17. B
18. K
19. F
20. N

1. Tampa, A. Tampa,

2. Tampa B. Tampa

3. Tampa C. Tampa,

4. Tampa D. Tampa,

5. Tampa E. Tampa

6. Tampa F. Tampa

7. Tampa G. Tampa

8. Tampa H. Tampa

9. Tampa I. Tampa

10. Tampa J. Tampa

11. Tampa K. Tampa

12. Tampa L. Tampa

13. Tampa M. Tampa

14. Tampa N. Tampa

15. Tampa O. Tampa

16. Tampa P. Tampa

17. Tampa Q. Tampa

18. Tampa R. Tampa

19. Tampa S. Tampa

20. Tampa T. Tampa

Answers

1. A
2. M
3. H
4. L
5. J
6. B
7. C
8. S
9. P
10. N
11. Q
12. F
13. E
14. O
15. T
16. I
17. G
18. K
19. R
20. D



11. K. Orange  
 12. L. Orange  
 13. M. Orange

14. N. Orange

15. O. Orange

16. P. Orange

17. Q. Orange

18. R. Orange

19. S. Orange

20. T. Orange

1. A. Orange

2. B. Orange

3. C. Orange

4. D. Orange

5. E. Orange

6. F. Orange

7. G. Orange

8. H. Orange

9. I. Orange

10. J. Orange

Answers

1. N
2. G
3. T
4. R
5. P
6. B
7. K
8. D
9. C
10. Q
11. I
12. E
13. A
14. H
15. S
16. L
17. F
18. J
19. O
20. M

EXERCISE (NUMERALS)

- |                          |                          |                           |                          |
|--------------------------|--------------------------|---------------------------|--------------------------|
| 1. \$ $\overline{45.28}$ | A. \$ $45.28$            | 11. \$ $\overline{45.28}$ | K. \$ $\overline{45.28}$ |
| 2. \$ $45.28$            | B. \$ $45.28$            | 12. \$ $\overline{45.28}$ | L. \$ $45.28$            |
| 3. \$ $45.28$            | C. \$ $45.28$            | 13. \$ $45.28$            | M. \$ $45\frac{28}{100}$ |
| 4. \$ $45\frac{28}{100}$ | D. \$ $45.28$            | 14. \$ $45.28$            | N. \$ $45\frac{28}{100}$ |
| 5. \$ $45.28$            | E. \$ $45.28$            | 15. \$ $45\frac{28}{100}$ | O. \$ $45.28$            |
| 6. \$ $45.28$            | F. \$ $45\frac{28}{100}$ | 16. \$ $45\frac{28}{100}$ | P. \$ $45.28$            |
| 7. \$ $45\frac{28}{100}$ | G. \$ $45\frac{28}{100}$ | 17. \$ $45.28$            | Q. \$ $45.28$            |
| 8. \$ $45.28$            | H. \$ $45\frac{28}{100}$ | 18. \$ $45.28$            | R. \$ $45.28$            |
| 9. \$ $45.28$            | I. \$ $45.28$            | 19. \$ $45.28$            | S. \$ $45.28$            |
| 10. \$ $45.28$           | J. \$ $45.28$            | 20. \$ $45.28$            | T. \$ $45.28$            |

EXERCISE (NUMERALS)

Answers

1. T
2. P
3. K
4. G
5. C
6. A
7. M
8. L
9. B
10. O
11. E
12. J
13. S
14. D
15. H
16. N
17. I
18. R
19. Q
20. F

## ABOUT THE INSTRUCTOR

Larry C. Liebscher retired in 2003 from the City of Redding Police Department in California, following a 30-year career with that agency. During Larry's latter 17-years with Redding Police, he headed the Department's Financial Crimes Unit, inclusive of forensic handwriting and document examinations. Following police retirement, Larry continued into private practice at his *Forensic Handwriting Services* office/laboratory in Redding.

During active service, Larry was a recognized court-qualified document examination expert throughout the law enforcement, legal, judicial, business, and private sectors in Northern California. He graduated from the U.S. Secret Service Questioned Document Course at Homeland Security's Federal Law Enforcement Training Center in Glynco, Georgia. Larry held the earned designation of Certified Document Examiner with the National Association of Document Examiners and was a member of the American Society for Testing and Materials. Larry participated annually with Collaborative Testing Services based in Sterling, Virginia. CTS offered proficiency testing for numerous forensic science disciplines, inclusive of handwriting and document examinations.

During his term in private practice, Larry provided document examination services and training for city, county and state entities, criminal and civil courts, corporate, medical, and private interests throughout California and the United States.

Following over 43-years of continuous service, Larry retired "for real" in 2016. He and his wife, Teresa, live in El Dorado Hills, California with their three dogs, Kate, Charlie, and Winston.



LARRY C. LIEBSCHER  
Forensic Document Examiner (Ret.)  
El Dorado Hills, CA  
(530) 604.0314  
lcl164@yahoo.com