WASHINGTON STATE PATROL

QUESTIONED DOCUMENTS TECHNICAL PROCEDURES MANUAL

CRIME LABORATORY DIVISION

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TABLE OF CONTENTS

1.0 Introduction 3
1.1 Definitions 3
1.2 Training Aids 3
1.3 Reference Materials 4
2.0 Training Needed 4
3.0 Tools and Equipment 4
3.1 Stereomicroscope 4
3.2 Electrostatic Detection Apparatus (ESDA®) 4
3.3 Video Spectral Comparator (VSC5000®) 5
3.4 Photography 5
4.0 Procedures for Examining Questioned Document Cases 5
4.1 Procedures for Examining Handwritten Evidence 5
4.1.1 Handwriting 5
4.2 Procedures for Examining Non-Handwriting Evidence 5
4.2.1 Mechanical Impressions 5
4.2.2 Rubber Stamps 6
4.2.3 Physical Matches 6
4.2.4 Indented Writings 6
4.2.5 Papers, Inks, and Other Writing Instruments 7
4.2.6 Printing Processes 7
4.2.7 Alterations 7
4.2.8 Charred Documents 7
4.2.9 Liquid Soaked Documents 7
4.2.10 Miscellaneous Examinations 7
5.0 Procedures for Working Cases 8
6.0 Safety 8
7.0 Quality Assurance 8
Appendix A – Abbreviations 9
Appendix B – Case Note Symbols 11
Appendix C – Questioned Documents Procedures Manual History 12

1.0 INTRODUCTION

This manual defines the technical procedures for working most questioned document cases. Areas of study are defined under American Society for Testing and Materials (ASTM) E444-09 entitled “Standard Guide for Scope of Work of Forensic Document Examiners” and include the examination of handwriting, typewriting, mechanical or electronic imaging devices, inks and paper, and altered, charred, macerated or otherwise damaged documents.

The methods outlined in the ASTM standards and this manual require that they be used in association with adequate training in the specific subject area by qualified document examiners with the knowledge of how to interpret the results obtained. Each case is unique and the ASTM standards and the procedures outlined in this manual are not a complete summary of all techniques available. It should not be relied on exclusively to cover every aspect which the examiner may come across in casework. In all cases the skill, judgment, and experience of the examiner will make the final determination as to what is required in each case.

The ASTM standards used in this manual will be archived in the Forensic Laboratory Services Bureau (FLSB) Library and a licensed copy kept in the Questioned Documents section of the Spokane Crime Laboratory.

When conducting comparisons it is important to note that an adequate known document is needed for comparison to the questioned document. If an adequate known document is not available, qualified conclusions may be appropriate. For document authentication examinations, refer to section 1.3 of this manual.

Any update to this manual must follow the guidelines of the Washington State Patrol (WSP) Crime Laboratory Division (CLD) Quality Manual (QM) 2.1.

1.1 DEFINITIONS

The terms and definitions that are commonly used in the field of Forensic Document Examination are included but are not limited to those found in the second chapter of Scientific Examination of Questioned Documents by Ordway Hilton, the sixth chapter of Forged, Anonymous and Suspect Documents by A.J. Quirke, and the ASTME2195-09 entitled “Standard Terminology Relating to the Examination of Questioned Documents”.

Terminology for expressing conclusions reached in an examination are explained in ASTM E1658-08 entitled “Standard Terminology for Expressing Conclusions of Forensic Document Examiners”.

Additional terminology can been found in the individual ASTM standards listed throughout this manual.

1.2 TRAINING AIDS

For training aids used by the WSP CLD Questioned Documents (QD) section, refer to the QD Training Manual (TM) and the Forensic Laboratory Services Bureau (FLSB) Library.

The Questioned Documents section maintains items, or collections, that assist scientists in their training. These materials are to be considered training materials and are not to be used in casework.

1.3 REFERENCE MATERIALS

The Questioned Documents section has numerous reference materials including, but not limited to, certificates of vehicle titles, driver licenses, Haas Atlas, the U.S. Identification Manual, and New Zealand Police Document Examination Section Printing Process Manual. These reference materials are fully documented, uniquely identified, and properly controlled as outlined in the CLD QM 6.4.2 and 6.4.3.

These reference materials are to be used in casework to assist in determining class characteristics of an evidence item. Any future collected reference materials will be recorded with the date collected, source, form number (if applicable), and will be controlled and kept with the rest of the reference materials.

2.0 TRAINING NEEDED

Training will follow the guidelines of the WSP CLD QD TM.

3.0 TOOLS AND EQUIPMENT

The equipment used by the QD section is generally not used for identification or critical measurements, but are used as aids in conducting the examinations of questioned documents. At this time, critical measurements are not normally required in the questioned document cases submitted to this section. However, if critical measurements are required, a “NIST” (or other properly certified) traceable measuring device will be used. These devices can normally be found in the Firearms or Materials Analysis Sections of the laboratory. The QD section does not use critical reagents.

Specialized equipment used by the QD section includes:

3.1 STEREOMICROSCOPE

Microscopy yields information regarding the minute characteristics of handwriting. By using various magnifications and light sources, additional information might be obtained from questioned documents. That information includes, remains of pencil or carbon marks that might be evidence of tracings, torn paper fibers and abrasions, pen lifts, overlapping of lines, indentations, and stroke direction.

Microscopes will be serviced as necessary by qualified microscope technicians. Routine maintenance, such as a burned bulb or cleaning eye pieces, can be done by the scientist as needed.

3.2 ELECTROSTATIC DETECTION APPARATUS (ESDA®)

The ESDA® is manufactured by Foster and Freeman and is used for the non-destructive analysis of documents to find indented impressions.

No national or international standards exist to calibrate the ESDA®; therefore, the ESDA® shall be tested in accordance with the guidelines published in ASTM E2291-03 entitled “Standard Guide for Indentation Examinations.” A log will be maintained indicating the date the ESDA® was checked and any repairs or modifications that were performed.

The ESDA® will be operated according to the instruction manuals provided near the instrument and user guides provided by the manufacturer.

3.3 VIDEO SPECTRAL COMPARATOR (VSC5000®)

The VSC5000® is manufactured by Foster and Freeman and provides a convenient and comprehensive method for the non-destructive analysis of inks and papers. It is used for differentiation and not for identification purposes.

The VSC5000® will be maintained and operated according to the manufacturer's instruction manual and user guide provided near the instrument, and any repairs or calibrations will be noted in the instrument log.

The VSC5000® also has magnification capabilities and can be utilized instead of a microscope when appropriate.

3.4 PHOTOGRAPHY

Digital cameras provide a visual record of evidence. Digital images for casework documentation will follow the guidelines of WSP CLD Operations Manual (OM) 4.4.2.

Procedures for image capture and storage technology in forensic document examination are covered under ASTM E2765-11 entitled "Standard Practice for Use of Image Capture and Storage Technology in Forensic Document Examination."

4.0 PROCEDURES FOR EXAMINING QUESTIONED DOCUMENT CASES

Document examinations can be separated into two main categories: handwriting examinations and non-handwriting examinations.

The following procedures are intended as general guidelines for working a routine case in the QD Laboratory. The procedures will vary depending on the type of examination performed.

4.1 PROCEDURES FOR EXAMINING HANDWRITTEN EVIDENCE

4.1.1 HANDWRITING

Procedures for examining handwriting are covered under ASTM E2290–07a entitled "Standard Guide for Examination of Handwritten Items." The examination procedure is dictated by the objectives of the examination and by the case-specific characteristics of the writings.

4.2 PROCEDURES FOR EXAMINING NON-HANDWRITING EVIDENCE

4.2.1 MECHANICAL IMPRESSIONS

Mechanical impressions include typewriters, typeface elements, check writers, printers, and other mechanical devices.

Procedures for examining typewritten documents are covered under ASTM E2494-08 entitled “Standard Guide for Examination of Typewritten Items.”

Procedures for examining mechanical check writer impressions are covered under ASTM E2285-08 entitled “Standard Guide for Examination of Mechanical Checkwriter Impressions.”

Procedures for examining dry seal impressions are covered under ASTM E2286-8a entitled “Standard Guide for Examination of Dry Seal Impressions.”

Procedures for examining other mechanical impressions such as on typewriter ribbons are covered under ASTM E2287-09 entitled “Standard Guide for Examination of Fracture Patterns and Paper Fiber Impressions on Single-Strike film Ribbons and Typed Text.”

Procedures described in the ASTM standards may be applicable when examining lift-off and cover-up correction tapes, carbon paper, carbon copies, no carbon required (NCR) paper, or documents produced by non-impact printing devices such as a thermal imaging transfer ribbon.

4.2.2 RUBBER STAMPS

Procedures for examining rubber stamps and impressions are covered under ASTM E2289-08 entitled “Standard Guide for Examination of Rubber Stamp Impressions”.

4.2.3 PHYSICAL MATCHES

Procedures for reconstructing paper fragments are covered under ASTM E2288–09 entitled “Standard Guide for Physical Match of Paper Cuts, Tears, and Perforations in Forensic Document Examinations.”

4.2.4 INDENTED WRITINGS

Procedures for examining indentations on paper are covered under ASTM E2291-03 entitled “Standard Guide for Indentation Examinations.”

The terms ESDA®, ESDA®2 (Electrostatic Detection Apparatus) and EDD (Electrostatic Detection Device) are interchangeable. The term EDD as used in the ASTM standard refers to any device, including the ESDA® and ESDA®2 which perform~~s~~ the same task.

The EDDs are used in the QD section and will be operated according to the operation manual provided by the manufacturer. The results of control samples and evidence examination are documented in the EDD logbook.

When latent impressions (lifts or images) are developed, they will be preserved using the standard techniques explained in the operation manuals provided by the manufacturer. Preserved impressions and positive lifts (i.e. images of investigative value) are treated as items of evidence and returned to the submitter. A copy of the impressions and decipherment will be made for the case file and can be utilized as case notes.

If it is necessary to remove staples, self-adhesive notes, or pages that are attached together, then permission from the customer must be obtained and documented. The original condition of the evidence will be documented by photocopy or photograph.

4.2.5 PAPERS, INKS, AND OTHER WRITING INSTRUMENTS

Ink examinations are covered under ASTM E1789–04 entitled “Standard Guide for Writing Ink Identification” and ASTM E1422–05 entitled “Standard Guide for Test Methods for Forensic Writing Ink Comparison.” Paper examinations are covered under ASTM E2325-05e1 entitled “Standard Guide for Non-destructive Examination of Paper.”

4.2.6 PRINTING PROCESSES

Procedures for examining documents created by inkjet are covered under ASTM E2389-05 entitled “Standard Guide for Examination of Documents Produced with Liquid Ink Jet Technology.”

Procedures for examining documents created by toner processes are covered under ASTM E2390-06 entitled “Standard Guide for Examination of Documents Produced with Toner Technology.”

Procedures described in the ASTM standards may be applicable when examining documents created by other printing processes.

4.2.7 ALTERATIONS

Procedures for examination of altered documents are covered under ASTM E2331–04 entitled “Standard Guide for Examination of Altered Documents.”

If it is necessary to alter the document (e.g. remove obliterating material), permission from the customer must be obtained and documented. The original condition of the evidence will be documented by photocopy or photograph.

The specific examination procedure will be dictated by objective of the examination and by the characteristic or combination of characteristics which indicate that the document has been altered.

4.2.8 CHARRED DOCUMENTS

Procedures for examining charred documents are covered under ASTM E2710-11e1 entitled “Standard Guide for Preservation of Charred Documents.”

4.2.9 LIQUID SOAKED DOCUMENTS

Procedures for examining liquid soaked documents are covered under ASTM E2711-11 entitled “Standard Guide for Preservation of Liquid Soaked Documents.”

4.2.10 MISCELLANEOUS EXAMINATIONS

There are occasionally novel cases which do not follow established procedures. The reference books and technical papers should be reviewed for an appropriate procedure

or similar case. Any new procedure or modification of an existing procedure must follow the guidelines in CLD QM 8.3.

5.0 PROCEDURES FOR WORKING CASES

The following steps are intended as general guidelines for working a routine case in the Questioned Document Laboratory. The procedures will vary depending on the type of examination performed. All cases will be examined at minimum and report written as outlined in CLD Operations Manual 4.3, unless the case is cancelled by submitting agency (CLD OM 3.11).

Photocopies of the items of evidence are made and utilized as examination case notes and worksheets. Marking evidence will follow the guidelines of CLD OM 3.1. Marking case notes will follow the guidelines of the CLD QM 9.2. Items in question are marked with a “Q” and known items are marked with a “K”. Characteristics are marked by using Case Note Symbols (see Appendix B). Additional notes may be made in the form of sketches or written descriptions. The case notes are maintained in accordance with the CLD OM 4.4.

Case notes must sufficiently document start and end dates of examination, the foundation for conclusions, and limitations of the evidence. The start date is designated as the date evidence is received from the vault. The end date is designated as the date the examination is completed prior to technical review. The case notes must follow the guidelines established by the CLD OM 3.1 and QM 9.0.

New items of evidence will follow the procedures outlined in OM 3.4

Verifications of physical comparisons are required for physical match and cut-and-paste examinations. In these cases, follow the procedures outlined in the CLD QM 9.3.

Written reports and conclusions must be unbiased and accurately reflect the scope of the examinations, the strength or shortcomings of the evidence, and any limitations of the findings. Conclusions will follow the guidelines of the CLD OM 4.3. When appropriate, conclusions will follow ASTM E1658-08 entitled “Standard Terminology for Expressing Conclusions of Forensic Document Examiners.” A copy of form QD-STEC-8001 may be distributed with reports for clarification of conclusions. Completed cases are administratively and technically reviewed as specified in the CLD QM 9.4.5 through 9.4.7, and appropriately documented according to the LIMS manual.

6.0 SAFETY

Lab coats, gloves, and eye protection are available along with additional safety equipment as needed. All procedures and activities in the QD section will comply with the WSP Safety and Wellness Manual and the CLD OM 8.0.

7.0 QUALITY ASSURANCE

Measurements requiring an uncertainty of measurement assessment are not routinely performed in the QD section. If there is ever a reason for such measurement s the scientist should follow CLD QM 6.8,

Peer review will be conducted as outlined in CLD QM 9.4 and verifications of physical comparisons, as they apply to the QD section, should follow CLD QM 9.3.

APPENDIX A – ABBREVIATIONS

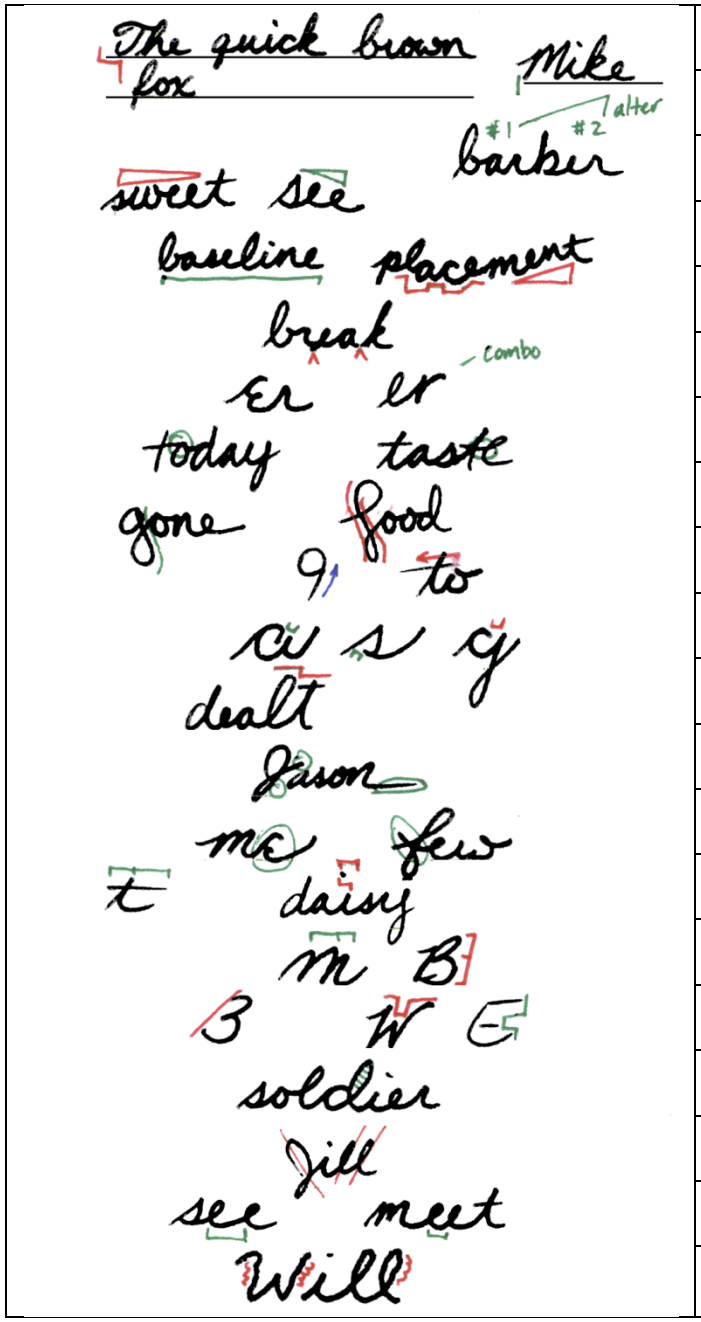
The following abbreviations may be used in the notes (Markings in green signify similarities, red indicate differences, and blue are neutral). Variations of these abbreviations are allowed if appropriately clear and available to the technical and administrative reviewer.

~	About
&	And
∠	Angle
@	At
√	Check
#	Number
∴	Therefore
Alter	Alternate
BK	Black ink
BL	Blue ink
BP	Ballpoint ink pen
Combo	Combination
Copy	Non-original
End	Endorsement
ESDA	Electrostatic Detection Apparatus
EX	Exclusion
Exam	Examination
FAX	Facsimile
Gel	Gel ink pen
H/P	Highly probable
HP	Hand printing
HW	Handwriting
ID	Identification
Inc	Inconclusive
Ind	Indications
IR	Infrared
K	Known

L	Left
LQ	Line Quality
Lqd	Liquid ink pen
NA	Not applicable or not available
N/C	No Conclusion
NCR	No carbon required
Neg	Negative
Orig	Original
Pos	Positive
PP	Pen pressure
Prob	Probable
Q	Questioned
R	Right
S	Suspect
Sig	Signature
Sim	Simulated
TLC	Thin Layer Chromatography
UV	Ultraviolet
V	Victim
Var	Variation
VSC	Video Spectral Comparator

APPENDIX B – CASE NOTE SYMBOLS

Markings in green signify similarities, red indicate differences, and blue are neutral (e.g. clarification of construction, missing letter, direction).



Alignment
Alternative construction / form
Ascending / Descending
Baseline placement
Break
Combination
Connections
Curvature
Direction
Gap / Opening
Height relationship
Introductory / Terminal strokes
Letter construction
Placement
Proportions
Relative lengths
Shape / Volume
Slope
Spacing
Tremor

APPENDIX C – QUESTIONED DOCUMENTS PROCEDURES MANUAL HISTORY

Questioned Documents Procedures Manual History		
Issuing Authority: Quality Assurance Manager		
Section & Comments	Date	Author/Reviewer
Entire Manual – Adopted (hard copy)		
Entire Manual – Adopted (electronic copy)		
Entire manual reviewed, revised, and adopted	10/14/08	B. Bishop, A. Sanzo, J. Tarver
09-002 (Rev. 1) November 17, 2009 Changes to TOC and throughout manual, corrections, additions, deletions	November 17, 2009	B. Bishop, A. Sanzo, J. Tarver
Revision 2 December 27, 2011 • Delete Appendix C entirely, use Form 8001	December 27, 2011	Tarver/Neilson
Revision 3 December 4, 2012 • Documented lab move from Seattle to Spokane • Changed several ASTM designations • Added second paragraph in 3.4 Photography • Revised section 4.2.8-Charred Documents; • New paragraph under 4.2.9-Liquid Soaked Documents	December 3, 2012	Szymanski/Tarver
Revision 4 March 17, 2014 • Section 5 – addition of start/end dates of analysis • Grammar/spelling corrections	March 17, 2014	Szymanski/Tarver
Revision 5 September 25, 2014 • Section 4.2 – Rubber Stamps and	September 25, 2014	Szymanski/Bishop/ Tarver

Indented Writing • Section 5 – Verification requirements		
Revision 6 April 25, 2016 • Section 3.1 – Servicing Microscopes • Remove hyperlinks	April 25, 2016	Szymanski/Bishop/ Riolo