

CHAPTER 12
ANALYSIS OF Y7, QI2, XF AND CERTAIN Q PRINTS

XF

1. The experts involved in Phase 1 of the comparative exercise have been asked to consider the identification of the mark XF (found on a Christmas gift tag in the living room of Miss Ross' house) as the right fore finger of Mr. Asbury.
2. The responses have been in the affirmative and, subject to any submission to the contrary, the inquiry team propose to treat those responses as determinative of the issue of identification.
3. However, in his Phase 1 response (FI 0130, page 15) Mr. Wertheim posed questions regarding the authenticity of the mark XF. These questions were expanded in his witness statement (FI 0118, pages 11-12) and clarified in a video conference call, the contents of which were confirmed in a letter to him dated 1 September 2009 (FI 0150).
4. The inquiry team has investigated these questions with the assistance of Dr. Steve Bleay of the Home Office Scientific Development Branch. For the reasons explained in his report (which will be produced) he has concluded that mark XF is of natural origin.
5. Dr. Bleay will be led as a witness at the inquiry.

Comparative exercise in relation to Y7 and QI2: materials

6. Witnesses have been required to address a standard set of images of Y7 and QI2.
7. The standard image set has been compiled from the following sources:

Y7: (a) the image of Y7 is a reproduction from the negative of the original image with manuscript writing on it (PS 0002h).

(b) the print is a scanned copy of the plain impression of the left thumb in the ten print form dated 6th February 1997 (ST 0004h).

Q12: (a) the image of Q12 is a scanned reproduction of the original image DB 0001h.

(b) the print is a scanned copy of the impression of the right forefinger in the ten print form Production 96, dated 10th January 1997 (DB 0142h).

8. The exercise was divided in to two parts.
 1. Phase 1 invited contributions from selected witnesses on each side of the argument to establish the principal details that required to be discussed.
 2. Phase 2 sought comments on the Phase 1 contributions from not only those involved in the Phase 1 exercise but also a number of other potential witnesses.

Phase 1 contributors

9. In Phase 1 of the exercise the 4 SCRO examiners who signed the court productions (Macpherson, Stewart, McBride and McKenna) were jointly asked to reproduce the points of similarity to which they referred in the court productions.
10. In the case of Y7 that required them to replot the points on productions 152 (ST 0006h), 180 (DB 0011h) and 189 (DB 0012h). The points were numbered in accordance with the numbering in the two earlier productions 152/180, with the substitute point relied on only in production 189 being numbered “17”. The numbering of the points can be reconciled by reference to Table 1.
11. In the case of Q12, the exercise relates to the points plotted on production 99 (CO 0207h and SG 0131), though it is to be observed that the inquiry has only a photocopy of that production.

12. Four of those who dispute the identifications (Wertheim, Zeelenberg, Macleod and Grigg) were each asked to mark the points that they regarded as being the principal differences inconsistent with an identification.
13. In addition to charting the relevant points on the images provided the Phase 1 contributors were required to complete brief tables giving details relative to the specific points.
14. The Inquiry Hearing Database references for the chartings and tables are given in Table 2A.
15. Mr. Wertheim also provided two appendices with narrative relating to his points of difference: Appendix 1 (FI 0130, PDF, pp. 16-23) for Y7; and Appendix 2 (pp. 24-27), dealing with QI2.

Phase 2

16. The Phase 1 contributors were then asked to comment on each other's contributions in Phase 2 of the exercise.
17. In addition, other potential witnesses were invited as part of Phase 2 to comment on the Phase 1 contributions. Phase 2 responses have not yet been received from all of those invited to participate. The inquiry hearing database references for those that are available are listed in Table 2B.

Summary of comparative exercise

18. The Phase 1 and Phase 2 material is summarised in Excel spreadsheets and will be placed on the inquiry hearing database at reference FI 0151. The spreadsheets will be updated as additional responses are received.
19. Study of the responses indicates that there may be a degree of overlap between the points of similarity and the points of difference. An indication of the possible overlaps is given in Table 3 (for Y7) and Table 4 (for QI2).

20. It is apparent from the spreadsheets that that there is little common ground between the opposing groups. The points in dispute are sufficiently clear from the terms of the responses and, therefore, the inquiry team has not sought further expert advice on the analysis of the comparative exercise material.
21. The inquiry will require to lead oral evidence from contributors to the comparative exercise to discuss the various points identified in the Phase 1 and Phase 2 contributions. The witnesses the inquiry team is currently minded to call are:
1. Mr. Wertheim;
 2. Mr. Grigg;
 3. Mr. Mackenzie;
 4. Mr. Dunbar;
 5. Mr. Swann;
 6. Mr. Leadbetter;
 7. Mr. Zeelenberg;
 8. Mr. Macleod;
 9. Mr. Bayle;
 10. Mr. McGregor;
 11. Mr. Macpherson;
 12. Mr. Stewart;
 13. Miss McBride; and
 14. Mr. McKenna.
22. The position of Mr. Halliday will be kept under review.

Different images and the impact on analysis

23. There are three issues that necessitate access to a range of images:
- (1) differences in characterisation of the same point;
 - (2) productions 152, 180 and 189; and

(3) the Rosetta characteristic.

Differences in characterisation of the same point

24. The inquiry has already heard evidence from Mr. Kent that before any question of expert interpretation of identified characteristics in a print or mark, there is a preliminary question relating to the clarity of the image and hence the proper identification of characteristics.
25. Evidence is available from Dr. Bleay that the appearance of characteristics can also be affected by the fingerprint development process applied. His paper on this point will be produced.
26. Study of the comparative exercise materials suggests that there is a dispute among experts, even between experts otherwise arriving at the same conclusion, about the proper characterisation of ostensibly the same point.
27. An example is point 4 on the SCRO Phase 1 charting on the fingerprint of Ms. McKie (FI 0106), which some witnesses refer to as a bifurcation and some say is a ridge ending.
28. To facilitate further consideration of this point it is considered helpful to have a rolled impression of Ms. McKie's left thumb available for the inquiry hearing. The contrast between the rolled and the plain impressions relative to point 4 is shown in the images below. The image of the rolled impression is taken from the elimination ten print form dated 6th February 1997 (ST 0004h). It will be added to the inquiry hearing database.



Productions 152, 180 and 189

29. The second issue requiring access to additional material relates to productions 152 (ST 0006h), 180 (DB 0011h) and 189 (DB 0012h).
30. In the Opening Statement it was indicated that the background to the preparation of the three productions 152 (ST 0006h), 180 (DB 0011h) and 189 (DB 0012h) would be explored. Table 1 shows the fifteen points common to these three reports. It is understood that the fingerprint of Ms. McKie used in productions 152 and 180 is a plain impression, whereas a rolled impression is used in production 189. Production 189 was prepared following examination of the fingerprints in production 187 (DB 0009h), taken when Ms. McKie was arrested on 6th March 1998.
31. The inquiry hearing database will include a rolled impression from production 187 (DB 0009h).
32. A number of specific questions have been raised about these reports leading to the assertion by the experts at the National Training Centre in Durham that, *in the absence of adequate explanation*, they are indicative of manipulation of evidence

and collusion (CO 1318). The specific questions are discussed in Mr. Sheppard's statement (FI 0082) and were the subject of examination when he gave evidence to the inquiry on 7th and 8th July 2009. These same points are also discussed by Mr. Wertheim in a precognition, which contains a helpful summary at paragraph 35 (FI 0118.76).

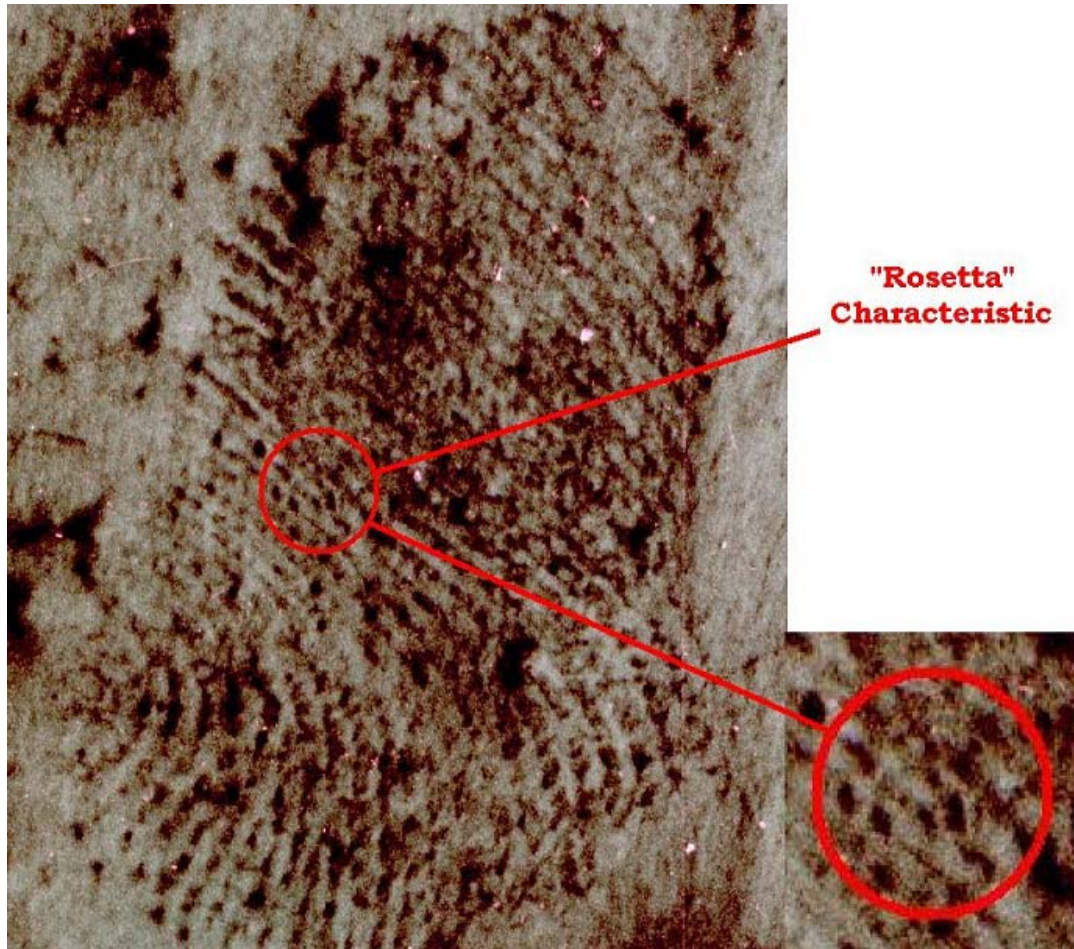
33. The specific points:
 1. The charted enlargements were prepared jointly by the 4 SCRO witnesses who signed the joint report.
 2. There are three reports, whereas normal practice would require only one.
 3. The third report (Production 189) uses a different inked impression.
 4. The charted enlargements do not reflect the “best evidence” in a number of respects (including specifically point 5 below).
 5. The images have been cropped.

34. The following response may be suggested for comment.
 1. Whatever the practice may be in other jurisdictions, the practice in Scotland is for fingerprint examiners to prepare a joint report and, at the time of the Asbury and McKie cases, that included the preparation of joint charted enlargements.
 2. Production 152 was prepared for the prosecution in HMA v Asbury. The Crown Office specifically instructed (CO 3928.2) a separate fingerprint comparison by reference to Miss McKie's arrest ten print form for the purposes of HMA v McKie and that accounts for Production 189. As regards Production 180, which was signed by only two of the four SCRO witnesses, there is evidence from Chief Inspector Laurence Wilson (FI 0078, paras 14-16) consistent with the proposition that it was prepared as part of his investigation of possible police disciplinary charges against Ms. McKie.

3. The fact that the Crown Office specifically instructed (CO 3928.2) the fingerprint officers to carry out a re-examination by reference to Miss McKie's arrest ten print form would account for the use of a different print in Production 189.
 4. The proposition that the charted enlargements do not satisfy the "best evidence" rule proceeds on a misunderstanding of the best evidence rule. In Scots Law the best evidence rule was satisfied by the production of full, unmarked photographic images of the marks in question and the inked prints of the relevant individuals. The charted enlargements were admissible secondary evidence to illustrate the points relied upon in the identification and were not represented to be the primary evidence by reference to which the identification was made.
 5. The images used for the charted enlargements were cropped and there is evidence that the charting PC would only produce such images. Be that as it may, there is evidence that the area selected for enlargement was not necessarily misleading. While the witnesses who contradict the identifications say that the cropped images excluded *additional* points of difference in other parts of the marks and prints, the fact is that they are able to indicate points of difference within the cropped areas. To take Mr. Wertheim as an example, his Phase 1 contribution on Y7 (FI 0164a) highlights 12 areas. One (area 1) may be discounted because it coincides with an agreed common point (SCRO point 3) but of his remaining 11 areas nine fall within the section of the print included in the cropped images (see Table 3).
35. The critical questions remain for the inquiry:
1. Was each of Y7 and QI2 correctly identified?
 2. If not, how did any misidentification occur?
 3. In particular, if there was any misidentification, how could four fingerprint examiners acting independently have made such an error?

The Rosetta characteristic

36. The feature in Y7 highlighted in the image below has come to be referred to as the “rosetta” characteristic.



37. It is understood that this feature, if Y7 is viewed as a single touch, is a point of difference between the mark and the print of Ms. McKie. Accordingly, for Y7 to be identified as the print of Ms. McKie this difference must be capable of satisfactory explanation. It is understood that those who identify Y7 as the mark of Ms. McKie say that the explanation lies in movement associated with it being the product of more than a single touch.

38. The description of this feature as the rosetta characteristic is understood to come from Mr. John Berry, who gave evidence to Justice 1 on 26th June 2006 (columns 3551-2). As matters currently stand the inquiry has no evidence from Mr. Berry.
39. However, this feature had been the subject of debate before this name was attached to it.
40. It is understood that the rosetta characteristic is the lowest of the green circled points of difference marked by Mr. Wertheim in his defence production 2 (DB 0172h) and discussed by him in evidence at the McKie trial: SG 0531, PDF pp. 180-2.
41. There is a number of references for Mr. Zeelenberg:
1. it is point 20 in Exhibit 5 to Mr. Zeelenberg's report dated 28th June 2000 (SG 0508/0714 or AZ 0044);
 2. it is point 11 in his Phase 1 inquiry chart 1Z (FI 0099); and
 3. Mr. Zeelenberg responded to evidence from Mr. Swann and Mr. Berry in a paper to Justice 1 (AZ 0006) (under the heading the "66 degree theory"); and the chartings A-E that he prepared for that purpose are AZ 0042.
42. The rosetta characteristic is shown in Charts C3 and E in Mr. Swann's PowerPoint (TS 0004). He deals with it in section 4.2 of his inquiry statement (FI 0149) at page 32 arguing that rotation is crucial to the analysis of Y7.
43. Mr. Mackenzie has highlighted this characteristic as point 38 in his marked up copy of Y7 (CO 0059, pp. 11 and 31) and on a plain impression of Ms. McKie's print (p.32).
44. The rosetta characteristic is one aspect of the broader question whether or not Y7 is the product of a single touch. The inquiry will explore this issue as an integral aspect of the wider dispute among the experts.

45. Historically witnesses have debated this point by reference to a variety of source materials. On 7th September 2009 Mr. Russell, on behalf of Mr. Swann and Mr. Leadbetter, made available to the inquiry team:
- (a) a copy of an article in the Daily Mail dated 24 October 2000, containing a fingerprint (TS 0006); and
 - (b) inked original fingerprints of Ms. McKie supplied to Mr. Swann by Levy & McRae under cover of a letter dated 3rd March 1999 (TS 0010).

Contemporaneous documents

46. For reasons of continuity it may be relevant to consider the earliest observations made by witnesses.
47. The evidence given at the McKie trial by Stewart, Macpherson, McBride and Wertheim can be read across to the comparative exercise chartings (with suitable adjustment for the changes in numbering shown in Table 1). The relevant Inquiry Hearing Database references are as follows:
- a. Charles Stewart on 4-6 May (SG 0525-7);
 - b. Fiona McBride on the same day (SG 0528);
 - c. Hugh Macpherson on 7 May (SG 0529); and
 - d. Mr. Wertheim on 11-12 May (SG 0530-1).
48. In relation to Mr. Macpherson, Mr. Stewart, Miss McBride and Mr. McKenna, their original chartings are:
- a. for Y7: productions 152 (ST 0006h), 180 (DB 0011h) and 189 (DB 0012h) - the inquiry holds the originals;
 - b. for QI2: production 99 (CO 0207h and SG 0131) - only a photocopy held.

49. Mr. Wertheim:

- a. The inquiry has contemporaneous notes prepared by Mr. Wertheim. His Y7 notes are DB 0170. His notes for the period in March 2000 when he studied mark QI2 are CO 1734 and he has some specific observations relative to production 99 in his report of 30 March 2000 (DB 0173).
- b. His charting for the McKie trial (defence production 2) is DB 0172h.
- c. Mr. Wertheim has not completed a detailed response to the SCRO Phase 1 charting of Y7. However, in his evidence at the McKie trial he did go through, one by one, the 16 points in the SCRO charting in production 189 (SG 0531, from PDF¹ page 189). He accepted that at most 5 points were, within tolerances, in sequence and agreement (page 189). It would seem that the 5 in question² were points 3, 4, 5, 8 and 14 (p.179), though he had doubts about points 4 and 14 (pp. 170-1 and 176-7) and seems ultimately to have viewed point 8 as not being in agreement (pp. 172-3). In this passage in evidence he gives reasons for disputing the remaining points. The page references are given in Table 8, which also converts the numbers in production 189 to the numbering used in the SCRO Phase 1 charting.
- d. He addressed separately the SCRO charting in production 152 in SG 0530 and Table 8 gives the transcript references (using PDF page numbers).
- e. In addition to testifying relative to the SCRO points of similarity he gave evidence of specific points of difference. Firstly he gave evidence in relation to four green circled areas marked over his image of Y7 in defence production 2 (DB 0172):SG 0531, from PDF page 179. He also gave evidence relative to four blue circled areas in Ms. McKie's known print: SG 0530, PDF, pp. 8-15 and see 25-26.

¹ The cross-references are to the PDF pages and not the original transcript pages

² Using the numbering in production 189

50. So far as is known, the earliest charting by Mr. Swann is that sent to Mr. Kent in July 1999 (HO 0103-5). That falls to be studied by reference to his comments in section 2 on page 29 and 4.1 on page 31 of his witness statement (FI 0149). Mr. Swann has also provided the inquiry with copies of his chartings A-K (TS 0003) and L-R (TS 0002).
51. Mr. Zeelenberg's first report (with charting) is dated 28th June 2000: SG 0508/0714 (or AZ 0044).
52. Mr. Macleod's reports:
- a. 2004:SG 0635;
 - b. June 2005: SG 0704; and
 - c. October 2005: SG 0705
53. Mr. Grigg is one of the signatories to the NTC report CO 2003.
54. Mr. Mackenzie and Mr. Dunbar:
- a. there are the Tulliallan materials (CO 0059);
 - b. Mr. Mackenzie prepared a charting of QI2 for Mr. Gilchrist in July 2001 (CO 2005h) and associated transparencies in February 2002 (CO 2004h).
 - c. In addition, Mr. Mackenzie and Mr. Dunbar prepared chartings of Y7 for the civil action. For Mr. Mackenzie: the charting is SG 0373h and there is a legend in SG 0715. For Mr. Dunbar: the charting is SG 0752h. The overlap between those chartings and the SCRO Phase 1 charting is shown in Table 5.
55. Mr. McGregor is one of the Phase 2 contributors. His current Phase 2 contribution (FI 0129) relates to Y7, that being the focus of the Aberdeen report (CO 0002). The same individuals also prepared a report on QI2 (DB 0651) and a Phase 2 response will be sought from him in relation to that print.

Presentations

56. The comparative exercise is not intended to be exhaustive. Witnesses have been advised that, subject to the control of the Chairman, they can give evidence to the inquiry in the form of a presentation using materials of their own choosing.
57. Mr. Mackenzie:
- a. He will give a presentation on Y7 largely based on his Tulliallan presentation in CO 0059. On pages 11 and 12 of that presentation there are marked up images of Y7 and the left thumb print of Ms. McKie. Some of the points charted are common to the SCRO Phase 1 charting. Those points are identified in Table 6.
 - b. For QI2 the presentation may make use of the charting (CO 2005h) and associated transparencies (CO 2004h).
58. Mr. Swann has provided copies of PowerPoint presentations (TS 0004).
59. Mr. Leadbetter refers to charts in his witness statement (FI 0148) and these are in a PowerPoint presentation (TS 0005).
60. Mr. Wertheim may prepare a presentation but, if he does so, it is unlikely to be available before 21st September 2009.
61. Mr. Zeelenberg is working on a presentation.

Display materials

62. The intention is to conduct the opinion phase of the inquiry using electronic images so far as possible. High resolution images of the Phase 1 material are on the inquiry hearing database at the references given in Table 2C.
63. The original comparative exercise chartings will be available to be consulted in the event of any doubt about an electronic image.

64. In addition, some of the material previously referred to at the inquiry has been rescanned to achieve optimum images for use in the opinion exercise. The rescanned material is listed in Table 9.

Asbury Q prints

65. The Danish experts Rokkjaer and Rasmussen were engaged by the Crown and provided a report dated 7 August 2000 (CO 0030).

- i. They accepted the identification of XF as the fingerprint of David Asbury.
- ii. They concluded that the part of QI2 attributed to Miss Ross was not her print.
- iii. They similarly contradicted the identification of QD2 as the print of David Asbury.
- iv. They concluded that the quality of three other photographs of marks identified as prints of Mr. Asbury was insufficient for identification, thereby contradicting SCRO: the three prints being (a) the part of QI2 identified as Asbury, (b) QE2 and (c) QL2. These have come to be referred to as “the Asbury Q marks”.

66. In a letter dated 1 February 2006 (DB 0200) Frank Jensen of the Danish National Police subsequently agreed the identification of QD2 as the print of David Asbury. His letter narrates that his department had been contacted by Mr. Zeelenberg who suggested that the original opinion to the contrary must have been mistaken.

67. Mr. Zeelenberg is quoted in that letter. He addressed this point in a submission to Justice 1 (AZ 0006, pp. 6-7).

68. The inquiry understands Mr. Rasmussen to be unavailable.

69. Mr. Rokkjaer has declined to attend the inquiry but has given a written response dated 29 July 2009 asserting that the image ostensibly of QD2 seen by him in the Kilmarnock Fiscal's office was not the print of David Asbury but that a photographic enlargement of the mark forwarded by Mr. Zeelenberg was. The English translation of that letter is DP 0002.
70. The inquiry is unable to pursue QD2 further given the unavailability of Mr. Rokkjaer.
71. The inquiry has taken the precaution of checking whether the images of the other three "Q" marks questioned by the Danish experts are of a quality suitable for fingerprint comparison. This was done by the Police Service of Northern Ireland and their findings were received on 21st September 2009.
1. There was insufficient ridge detail for a comparison to be made in relation to the part of QI2 identified as the mark of Mr. Asbury.
 2. Mark QE2 was borderline for comparison purposes.
 3. The mark QL2 has sufficient ridge detail for a comparison to be made.
72. Discussions require to take place to decide whether this matter requires to be taken further.

Chapter 12 Issues

1. Whether the analysis of fingerprints is affected by (a) the fingerprint development technique applied and (b) the quality of the image studied.
2. Whether Y7 and QI2 were correctly identified.
3. Whether XF is of natural origin.
4. Until further discussions take place the inquiry team cannot comment further on the Asbury Q marks.