

**CHAPTER 11**  
**THE NON-NUMERIC SYSTEM**

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Evidence of Scott Pattison

1. Mr. Pattison has provided a statement to the inquiry.
  1. In relation to past practice, Mr. Pattison casts doubt on the role played by the Crown in Scotland in the dire and crucial exception to the 16 point standard.<sup>1</sup>
  2. Crown Office had a Standing Committee on Expert Evidence from 1994 to 2001.<sup>2</sup> This Committee was responsible for:
    - (a) the Expert Evidence Manual, first published in 1995;<sup>3</sup>
    - (b) a review of the 16 point standard; and
    - (c) the preparation of draft Lord Advocate's Guidance.<sup>4</sup>
  3. The Expert Evidence Manual contained guidance on fingerprint evidence.<sup>5</sup>
  4. The first review carried out by the Standing Committee was in 1994<sup>6</sup>.
  5. The draft Lord Advocate's Guidelines were under consideration from 1995<sup>7</sup> but were never issued and subsequently were overtaken by events.<sup>8</sup>

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<sup>1</sup> 65

<sup>2</sup> Pattison, draft, paras 47, 49 and 57

<sup>3</sup> 48

<sup>4</sup> 59-

<sup>5</sup> 50

<sup>6</sup> 51-53.

<sup>7</sup> 60-63

<sup>8</sup> 64

6. In 1998 the Standing Committee considered the use of photographic enlargements.<sup>9</sup>
7. The proposed change to the non-numeric standard was reported to Law Officers in June 2000.<sup>10</sup> After the Standing Committee was stood down responsibility for considering the change to the non-numeric system was passed to the Crown Office Policy Unit.<sup>11</sup>
8. In 2002 a draft Scottish Fingerprint standard was under consideration.<sup>12</sup>
9. The non-numeric system was applied in Scotland from 4 September 2006, since when the Crown Office has set no minimum number of points.<sup>13</sup> This change was preceded by a meeting in Crown Office in July 2006.<sup>14</sup> Photographic enlargements are no longer routinely required.<sup>15</sup>
10. COPFS staff were provided with guidance on the non-numeric standard in circular COC 8/2009 in March 2009<sup>16</sup> and other internal guidance documents, including the Book of Regulations were revised.<sup>17</sup> A DVD and explanatory leaflet had been made available in 2006.<sup>18</sup>

#### 1994 Review of the 16 point standard

2. The 16 point standard was the subject of review by the Home Office in 1978 with a representative of Crown Office present as an observer.

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<sup>9</sup> 55

<sup>10</sup> 56

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<sup>12</sup> 58

<sup>13</sup> 4

<sup>14</sup> 10

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<sup>16</sup> 27 and 29

<sup>17</sup> 28-32

<sup>18</sup> 26

3. The background to the 1994 Scottish review of the 16 point standard included the reporting to Crown Office of a case under Summary Complaint in Wick in which 12 points in sequence and agreement had been found but SCRO witnesses were not willing to speak to an identification. The point may, however, have been raised with Crown Office earlier in that same year in another context: see memo by W.F. Torrance to the then Home Depute (now Lord) Bonomy.
4. The Standing Committee prepared a report to the Crown Agent in August 1994 and recommended:
  - (a) Where the prosecution relied on fingerprint evidence alone the 16 point standard should continue to apply.
  - (b) Where there was other evidence implicating the accused the police should be instructed to report to the PF any case in which 8 points of similarity were found and it would then be a matter for the PF to decide the evidential value of that finding and to assist the PF to make that assessment the police were to be encouraged “to report on the quality as well as the numerical quantity of the findings, and to indicate how rare/common they are”.
5. The 8 point lower threshold derived from the 1978 agreement among fingerprint experts that that was the number of characteristics sufficient to establish identity beyond reasonable doubt.<sup>19</sup>
6. The Standing Committee was critical of the unwillingness of fingerprint examiners to give evidence of identity to a standard lower than 16 points, in part arguing that this attitude was based on a misunderstanding of “the purpose and value of their evidence in cases where there is evidence from another source implicating the accused”.<sup>20</sup> The Committee also observed that

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<sup>19</sup> Para. 2.6

<sup>20</sup> Para. 2.8.

this had implications for disclosure to the defence,<sup>21</sup> presumably thinking of a case in which there were 8-15 points of similarity between the latent print and the fingerprint of, for example, a potential incriminee.

7. The report was the subject of internal discussion: see manuscript note of the Lord Advocate (Rodger) to memo by Home Depute dated 27 September 1994 and minutes of the meeting of the Standing Committee on Expert Evidence dated 5 May 1995.

#### 1995 draft Lord Advocate's Guidelines

8. Draft Guidelines had been produced by March 1995 and appear consistent with the 1994 report. In particular, the Guidelines would have required reporting of the finding of a smaller number of points of similarity than 16, noting that in some instances that evidence might be relevant to the defence and equally that in other cases the Crown might wish to use fingerprint evidence in order to show consistency or inconsistency of the source of the fingerprint impression.
9. In 1995 the 8 Scottish Police Forces and SCRO debated the draft guidelines and produced an agreed response confirming that all Scottish fingerprint bureaux were prepared to express opinion on marks yielding less than the existing standard and that more emphasis should be placed on the quality of the mark rather than the number of characteristics.
10. In that context there was a letter from SCRO to Crown Office dated 9<sup>th</sup> September 1996 that indicated that fingerprint officers would report "strong suspicion" if 12-15 points of similarity were found. That was confirmed in a SCRO letter dated 24<sup>th</sup> September 1998, which also confirmed that SCRO reported in accordance with the 10 plus 10 exception.

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<sup>21</sup> Para. 2.5

11. A sub-group of the Standing Committee worked on the revision of the draft guidelines and circulated a revised draft in March 1998. This revised draft primarily adopted a non-numeric approach:

*“The Lord Advocate now take (sic) the view that it is preferable to proceed on the basis that a comparison with a known fingerprint has been achieved when fingerprint officers are satisfied of this beyond any doubt, irrespective of the number of points of comparison noted.” (para. 3)*

However, it would also appear to have invited evidence to a lesser standard in paragraph 6:

*“Where fingerprint officers are not satisfied that a comparison exists but there are positive indications that one may exist and in particular no contra indications, they should express an opinion as to the likelihood of common origin of the questioned and known impressions.”*

There was no discussion of how fingerprint officers would assess “the likelihood of common origin”.

12. The Lord Advocate (Hardie) approved a draft on 2 September 1998.
13. The draft guideline was revised in 1999 and as drafted was supportive of the non-numeric approach. There was a comprehensive review meeting on 18<sup>th</sup> August 1999, the minutes of which are available. It includes the following statement:

*“A move away from the 16-point standard would .. require scientists to have a broader based expertise and be more open minded in their approach.”*
14. On 17<sup>th</sup> April 2000 Mr. Bell of SCRO wrote to Crown Office on the subject of change to the non-numeric system and reported that SCRO had taken cognizance of the willingness of Crown Office to accept evidence which did not meet the 16 point standard and that some cases had been reported on that basis.

15. A comprehensive review paper was prepared for submission to the Lord Advocate in June 2000.
16. An internal Crown Office memo dated 17 August 2001 notes that the Lord Advocate accepted the need to move to the non-numeric system but notes that though the latest draft of guidelines had been approved by the Lord Advocate they were not issued “*because of the SCRO investigation and it was felt that the time was not right to be issuing new guidance about the presentation of fingerprint evidence*”.

#### Expert Evidence Manual

17. The inquiry team has been provided with a copy of the Expert Evidence Manual prepared by the Standing Committee on Expert Evidence. Though the precise date of this copy being unclear (it may be 1995 or 1997) it would appear to have been current at the time of the trials in Asbury and McKie.
18. The Manual is based on the 16 point standard, and says of evidence to that standard that “In practical terms it is infallible” (para. 2.4).
19. A manuscript note on the copy provided indicates that it was regarded as out of date by October 2000.

#### Dire and Crucial exception

20. Mr. Pattison says that the Crown in Scotland had no role in designating marks or cases as dire and crucial but he seems to accept that in some instances evidence of an identification not complying with the 16 point standard was submitted to the prosecution.<sup>22</sup>
21. That is consistent with the History section of the 1999 draft Lord Advocate’s Guidelines:

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<sup>22</sup> 65

*“There have been a few cases, however, where identification fell below the 16 point standard, but the print was of such crucial importance that it was led in evidence.”*

22. It is also consistent with the narrative in the Implementation Plan for the changeover to non-numeric evidence produced by SCRO in June 2005 which argued that the proposition that 16 points were necessary to the presentation of evidence in court “has never been a reality”, supporting that contention in part by citing the fact that in 1983 the Home Office guidance was amended “*to include identifications with less than 16 characteristics where that evidence was deemed to be ‘dire and crucial’*”.
23. Mr. Pattison is clear that COPFS played no role in the designation of marks or cases as dire and crucial. What is left uncertain is by whom the decision was taken that the evidence was “dire and crucial” and what discussions preceded it.

#### HMICS report

24. The HMICS report (SG 0375) included some recommendations and observations on fingerprint practice and procedures.
25. The matters covered included:
  - Verification processes
  - The need for standards
  - Working practices associated with non-numeric identifications
26. Verification: The report noted that the number of officers involved in the identification/verification process had been reduced from 4 to 3 as from February 1999 and that that was consistent with national practice (5.16.1). The report notes that there were robust quality assurance checks, including dip sampling (6.2.1). However, the report did contain adverse comment on the

practice of passing findings from one officer to another during the verification process, in particular from a senior to a junior officer, as not being conducive to a “truly independent” verification process (paras 5.9 and 8.15.2).

Recommendation 23 was that practice be reviewed with a view to increasing independence during the identification/verification process.

27. Standards: In discussing the need for standards HMICS proceeded on this proposition:

*“The application of a standard is very important to maintaining a safe and reliable method of fingerprint comparison. Experience and expertise enables a fingerprint expert to ‘know’ that a mark has been made by a certain finger but it is necessary that a standard is applied to translate that view in to a reasoned argument on which the conclusion can be based. The application of a recognised and accepted standard protects the fingerprint expert from inappropriate pressures and influences and allows the generation of safe and positive conclusions”.* (8.1.1.)

To that end HMICS recommended the production of a national Guidance Manual on Fingerprint Standards and Procedures (Recommendation 12).

28. Recommendation 15 was that management of the change to the non-numeric standard should be addressed at a very early point by the ACPOS Presidential Review Team. Ancillary observations were made on the changes that might be required in the event of a move to non-numeric identification evidence. HMICS suggested that court reports might require to contain greater detail regarding the fingerprint officer’s opinion (6.10.2), with a high standard of documentation being kept (8.1.8). In particular there was seen to be a need to keep working notes (8.16.3) recording the expert’s findings and reasoning, all in the interests of transparency and accountability (8.1.9-10).

ACPOS

29. The ACPOS Presidential Review Group, Change Management Review Team, reported in October 2000 (SG 0522) and broadly echoed the conclusions of the HMICS report.
30. One innovation was that in picking up the recommendation that the verification process be as independent as possible, the Change Management Review Team recommended that the processes of identification and verification be separated, with the creation of a dedicated verification team who, thought they would know the result of the identification phase, would not know the identity of those involved: para 13.4.12-13.

#### 2002 draft Scottish Fingerprint Standard

31. In April 2001 and April 2002 a draft Scottish Fingerprint Standard was forwarded to Crown Office by Fife Constabulary for consideration. This adhered to the 16 point standard, supplemented with exceptions for 10 plus 10 and dire and crucial cases.
32. Though the DCA (Gilchrist) was broadly supportive, he argued that fingerprint officers should still report instances where the mark was consistent with the accused's fingerprint even if there were insufficient characteristics to enable an identification.

#### Introduction of the non-numeric system

33. On 4 December 2003 the Justice 2 Committee wrote to the Lord Advocate regarding the implications of a move to the non-numeric system and in February 2004 the Lord Advocate approved a draft response including the following statement:

*“Although the decision to adopt such a standard would be a matter for SCRO, clearly, any such move would require to be made in close consultation with the Lord Advocate, who would require to be satisfied that he would be entitled to rely on fingerprint evidence prepared using that standard.”*

34. In the same month the DCA (Gilchrist) reported that the Scottish Fingerprint Service was ready to go live with the non-numeric standard, adding:

*“The Crown Office position has always been one of supporting the introduction of the non-numeric standard. If it had not been for the controversy over the Shirley McKie case, the standard would almost certainly have been introduced by now.”*

35. In June 2005 SCRO submitted to Crown Office a draft implementation plan for the move to the non-numeric fingerprint standard in Scotland anticipating that the Lord Advocate’s approval would be required to implement the change. The implementation plan canvassed the rationale for the change and identified the key messages to be conveyed when the change was made:

- *“Non-numeric is a robust process for fingerprint identification based on quality, processes and procedures, people and training*
- *The fixed 16 point standard has never been a reality since 1983 when it was permitted to present fingerprint evidence on single identification showing fewer than 16 characteristics if that evidence was considered ‘crucial’ and ‘of dire importance’ to the case.*
- *Evidence is available if required on every occasion where identity has been established*
- *More detail and information is included with reports / statements offered by SFS experts. The new format will include information about all marks on the case*
- *Experts are able to offer a fuller and more detailed explanation and information on how they come to their conclusions in the identification process when required to do so resulting in a more professional approach*

- *More easily understood for the court and in particular the jury.*
- *Non-numeric brings to the fore the scientific basis for the uniqueness of fingerprints and the methodology employed by experts when analyzing and comparing fingerprints.*
- *Non-numeric is the accepted format for presenting fingerprint evidence in England and Wales and many countries are the world.*
- *SFS is now fully prepared and ready to adopt the non-numeric standard.”*

36. The O’Dowd report (PS 0036) was completed on 24<sup>th</sup> March 2006 and that report agreed that Recommendation 12 of the HMICS report – the need for a national procedures manual – had been discharged by the combination of the provision of a National Procedures Manual and a Scottish Fingerprint Quality Assurance Manual and the securing of ISO accreditation. As for Recommendation 15 – the management of the change to the non-numeric standard – O’Dowd concluded that that had yet to be discharged. Arrangements were in hand but the decision rested with the Lord Advocate as to when this system would be introduced and not decision had (as at that date) yet been made.
37. The Scottish Fingerprint Service published its Action Plan for Excellence in April 2006. That plan anticipated the change to the non-numeric system by the end of August 2006 (para. 4.9). Incidentally that document records that the Glasgow Bureau alone operated the anonymised system of independent verification recommended by The Change Management Review Team (SG 0522); but this was to be reviewed (para. 3.15).
38. A meeting took place at Crown Office on 4 July 2006 and the inquiry has minutes of that meeting. That meeting discussed, among other issues, the

format of reports to court. It did not discuss the methodology to be applied in fingerprint comparisons nor the standard that was to be applied.

39. Crown Office circular 8/2009 (CO 4109) states that the changeover to the non-numeric standard was made with the agreement of COPFS, ACPOS and the Scottish Government.
40. There is no contemporaneous documentation provided to the inquiry showing the agreement of the Lord Advocate (or COPFS) to the changeover. Mr. Pattison advises the inquiry that the Lord Advocate had indicated in 2005 that he was content, in principle, to accept reports based on the non-numeric system.

#### SPSA

41. SPSA was set up under the Police, Public Order & Criminal Justice (S) Act 2006 and has operated since 1 April 2007.

#### Verification

42. In February 1999 the total number of officers involved in identification and verification at the Glasgow Bureau was reduced from 4 to 3. Ms. Tierney says that, following consultation with the international panel of experts, the number was further reduced, for *eliminations*, to a total of 2, with effect from February/March 2009.<sup>23</sup>
43. The Change Management Review Team (SG 0522) had recommended anonymity at the verification stage. The Action Plan for Excellence envisaged review of the verification arrangements. This was carried out by a consultant, Roger Shearn, and his original scoping report (DB 0650) reports that the anonymised arrangements were viewed as an insult to the Glasgow Bureau as part of the continuing fall-out from the McKie case. His report in December 2006 (DB 0649) states that only the Manchester Police used a similar system

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<sup>23</sup> Tierney, 43-46

and he recommended that it be abandoned in favour of an open and transparent verification process in accordance with practice in most UK Fingerprint Bureaux.

44. Evidence of SPSA working practices comes from Mr. Nelson and Ms. Tierney. Both confirm that the system of anonymised verification was abandoned on advice.<sup>24</sup> Instead, the independence of those involved in the verification process is being promoted through a change in the culture of the organisation:

*“Efforts are being made to ensure that there is a culture of transparency where experts feel able and indeed compelled to challenge opinions.”<sup>25</sup>*

45. Ms. Tierney states that where one officer involved in the verification process, though not positively saying that there has been a misidentification, is doubtful whether observed common characteristics are of sufficient quality to justify an identification, he could have a discussion with one of the identifying officers and, by implication, if agreement was reached the matter would rest at that.<sup>26</sup> A Questioned Identification Procedure applies only where two officers are in disagreement about the identity of the fingerprint rather than the quality of the fingerprint.<sup>27</sup> These processes would not be automatically disclosed to the Crown, though in many instances they culminate in the print being considered too poor for further identification. The process could be disclosed through precognition.<sup>28</sup>

#### Photographic enlargements

46. The use of photographic enlargements was raised in November 1998, the reasons for dispensing with them being that Glasgow was the only bureau

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<sup>24</sup> Tierney, 80-85

<sup>25</sup> Nelson, para. 96; Tierney, 80-85

<sup>26</sup> Tierney, 35-37

<sup>27</sup> Tierney, 30, 36-37.

<sup>28</sup> 38

producing them but they served no purpose because the identification was never challenged.

47. In that context there was a letter from SCRO to Crown Office dated 9<sup>th</sup> September 1996 that indicated that fingerprint officers would report “strong suspicion” if 12-15 points of similarity were found.
48. A letter from the Scottish Fingerprint Service dated 1 August 2006 indicates that it had been agreed following discussions with the Deputy Crown Agent that the preparation of marked up enlargements would cease from the end of that month. This had been raised at a meeting with Crown Office on 4<sup>th</sup> July 2006. However, it is noted that in anticipation of the dropping of photographic enlargements, the DCA (Mr. Brisbane) posed the following consequential question in an internal email dated 3 July 2006:

*“How would they intend to explain their findings to the court?”*

#### Crown Office circular and other materials

49. A draft Crown Office circular was in preparation by August 2006.
50. The final circular, 8/2009 (CO 4109), was issued in March 2009 along with consequential changes to the Book of Regulations, Practice Manuals and Precognoscer’s Handbook. Excerpts from the Book of Regulations, Practice Manuals and Precognoscer’s Handbook are CO 4110-4.
51. Paragraph 6 of the circular (CO 4109) states that the change did not affect the manner in which a fingerprint officer makes an identification, the difference being that now a fingerprint officer who has made an identification can give evidence in court irrespective of the number of points of comparison.
52. Paragraph 7 records three key features of the non-numeric system:
  - *“Experts no longer need to establish a fixed number of points of comparison.”*

- *Experts can focus on the quality of any points of comparison, rather than the quantity.*
- *Experts should be able to offer a much fuller explanation of the way in which they arrived at their conclusions.”*

53. Despite the third of those points, the report that the experts now prepare (Annexe A to the circular) contains no detail beyond the expression of a conclusion as to identity. No photographic enlargements are provided and, instead, it is explained in the circular that the detail is to be secured through precognition of the expert.

54. It may be that it is envisaged that the fuller explanation will be obtained during the precognition of the case. Mr. Pattison confirms that precognitions, as such, are not routinely disclosed to the defence,<sup>29</sup> though he points out that the Crown is obliged to disclose any information that arises at precognition which meets the disclosure test.

#### Standards

55. The inquiry has been provided with a copy of an SPSA presentation made to Crown Counsel on 20 June 2009 (CO 4118) which says, in the context of the evaluation phase, that it is “Subjective, based on one’s knowledge and ability”.

56. It is understood that in following the ACE-V methodology:

- SPSA examiners begin with a comprehensive assessment of the latent and mentally note (but do not record) the potentially significant characteristics in the latent before examining the known prints.
- They then compare only those identified potentially significant characteristics in the latent against the known.

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<sup>29</sup> Pattison, para. 6

- They do not work in reverse, that is to say by identifying a potentially significant characteristic in a known print and examining whether that is to be found in the latent.

57. Ms. Tierney's Statement covers the operation of the non-numeric system.

1. The judgment is ultimately subjective.<sup>30</sup>
2. There is currently no requirement for fingerprint officers to document their thinking.<sup>31</sup> Though FSS does document findings<sup>32</sup>, SPSA is consistent with the practice of other UK Police Fingerprint Bureaux. It is understood that SPSA's position is that it has not yet been established that such documentation is necessary to meet the accreditation standard in ISO 17025.<sup>33</sup> In part the absence of a requirement to maintain a record of thought processes and findings is justified by Ms. Tierney by reference to the decision by COPFS to dispense with enlargements.<sup>34</sup>
3. Ms. Tierney argues that the lack of recording does not inhibit the ability of the expert to give evidence in court, arguing that what is critical is that their conclusions are consistent, not that they can document the route by which they originally arrived at that conclusion.<sup>35</sup>
4. The quality of characteristics (as opposed to quantity) is central to the non-numeric system, but there are no specific guidelines relating to the weighting or significance which should be attributed to particular characteristics or factors in a mark in the quality assessment of marks.<sup>36</sup>
5. Her discussion (from para. 71) of the criteria applied in assessing quality culminates in this conclusion:

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<sup>30</sup> 26

<sup>31</sup> Tierney, 53

<sup>32</sup> 55

<sup>33</sup> 65-67

<sup>34</sup> 57-65 and 68-69

<sup>35</sup> 60

<sup>36</sup> Tierney, 21 and 75

*“The non numeric standard moved the emphasis away from a specific focus on counting points and as a consequence the criteria espoused by Ashbaugh came much more to the fore. Whether or not this is a science in some way misses the focus of the exercise and is more of a philosophical question. It is a thought process and analysis which is results and process driven.” (para. 79)*

6. Ms. Tierney says that it is the verification process which gives fingerprint evidence its reliability as a means of human identification: the validity of the first examiner’s conclusion is demonstrated by consistent results from different examiners.<sup>37</sup>

7. Her evidence is that examiners may reach the same conclusion by different routes and less significance attaches to differences between them as to the number or nature of common characteristics, the critical issue being whether they agree in the conclusion.<sup>38</sup>

8. Ms. Tierney discusses the certainty with which fingerprint findings can be expressed from para. 86, culminating in the following statement:

*A fingerprint expert can claim to be 100% confident in their findings and also be 100% confident that every other expert comparing the impressions in question would come to the same conclusion. But this is all we can say.” (92)*

58. Ms. Tierney says that a more detailed report covering the analysis was offered to the Crown but rejected.<sup>39</sup> Documentation could be done if required by the Crown, although the amount of work would be significant.<sup>40</sup>

59. Mr. Pattison says that Crown Office did not have an input in to the SPSA policy on the documentation of expert thinking: letter of 2 September 2009 (Chapter 11, para. 57).

Mr. Zeelenberg

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<sup>37</sup> 93

<sup>38</sup> 94-96 and 103

<sup>39</sup> 28

<sup>40</sup> 29

60. Mr. Zeelenberg has provided a statement to the inquiry.
1. He says, under reference to the Evett & Williams report that the practice in Holland is to begin the analysis stage by deciding what all the usable features in the (latent) mark are before turning to a comparison of the known print.<sup>41</sup> Any points that are identified must come from this analysis stage and not from comparison with the known.<sup>42</sup>
  2. They follow a method close to that described by the Interpol European Expert Group on Fingerprint Identification, a combination of quantitative and qualitative analysis. The quantitative standard is a minimum threshold of 10-12 coincident points.<sup>43</sup>
  3. The advantage of the application of this standard is that the process is more readily capable of verification and is more transparent and controllable.<sup>44</sup>
  4. He cites the OIG Mayfield report.<sup>45</sup>
  5. Mr. Nelson and Ms. Tierney have given evidence that SPSA is reinforcing its verification process by instilling a culture of transparency and willingness to challenge the views of others. That is one of the lessons that Mr. Zeelenberg says the Dutch learned from the Schiedammer parkmoord case (a DNA case).<sup>46</sup> He refers to it as a culture of “counter-argumentation”<sup>47</sup> and is reinforced by recognition of the potential for bias<sup>48</sup> and an emphasis on full disclosure.<sup>49</sup> However, Mr. Zeelenberg

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<sup>41</sup> Zeelenberg, 123 and 139

<sup>42</sup> 140

<sup>43</sup> 126-134

<sup>44</sup> 134 - 137

<sup>45</sup> 136 and 142

<sup>46</sup> 167-174

<sup>47</sup> 172

<sup>48</sup> 173

<sup>49</sup> 174

questions whether the required cultural change can occur without the McKie case having been properly addressed.<sup>50</sup>

61. Mr. Nelson says that he is aware that there are a number of interpretations of Y7 and QI2 but based on his scientific background and given that the benefit of the doubt must be given to the accused, “*it is SPSA’s view that these are both unsafe identifications*”.<sup>51</sup> However, SPSA has no view as to the source of the misidentification.<sup>52</sup> Further, he acknowledges that there may be differences of view within the organisation about Y7, but says that these do not affect the day to day operation of the service and, as such, the ‘divisions’ previously identified no longer exist.<sup>53</sup> The SPSA strategy has been to reduce the impact of the issue by not focusing on it.<sup>54</sup>

#### Forensic Science Service – Mr. Chamberlain

62. Mr. Chamberlain of Forensic Science Services Limited has provided a statement.
1. FSS broadly follows ACE-V.
  2. At the assessment stage examiners examine each mark to assess overall quality, locate features that may be used in the comparison, assess the reliability of those features and determine if the mark is comparable. This is generally documented briefly in the case file, with more extensive notes being taken if the mark is of particular evidential value, for example, if it is of inferior quality.
  3. Comparisons are done using hard copy images, magnifying glass and comparator, with photographic enlargements and digital imaging software being used as required. The results of the comparison are recorded in the

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<sup>50</sup> 176-239

<sup>51</sup> 97 and 104 (a)

<sup>52</sup> 104(b)

<sup>53</sup> Nelson, 5

<sup>54</sup> 104(c)

case file and signed. Written notes and drawings may be made and a “Feature Map” is prepared, which is an annotated digital image showing the corresponding features.

4. The case file is then passed to a second examiner for verification. The FSS does not currently require blind verification but is considering the associated issues. The second examiner re-examines the mark independently and produces his own Features Map, which is added to the case file. A third examiner also re-examines the mark, but the third examiner does not produce Features Map.
5. Where there is a difference of opinion between two examiners it must be drawn to the attention of the National Scientific Lead.
6. National Academy of Sciences has highlighted the need for a more rigorous validation process and this is being studied by the International Association for Identification Standardisation II Committee.
7. He has also been involved in the development of probabilistic methods for fingerprint evidence with the software being currently in the final stages of internal validation prior to trial in a field study in the USA.

#### The OIG report on the Mayfield case

63. The report by the (USA) Office of the Inspector General in to the Mayfield case was published in March 2006 and was therefore available to the Scottish authorities prior to the change to the non-numeric standard in September 2006. The FBI Laboratory had itself conducted an investigation. These were reviewed by the OIG. The OIG’s report proceeded against the background of an acknowledged misidentification of a fingerprint and looked at the causes of the error in that case and reviewed the recommendations made by teams commissioned by the FBI Laboratory.
64. The OIG report supports a number of recommendations including:

1. research in to fingerprinting, including research aimed at developing and testing the validity of minimum quantitative thresholds (pp. 196-7);
  2. the development of more objective criteria(197);
  3. greater definition of each phase of ACE-V, including defining the “quality” and “quantity” aspects of the examination and minimum latent print quality considerations (197-8), an INTERPOL document being cited as a relevant example;
  4. the need for certainty in relation to the explanation for points of difference (199);
  5. greater definition of the degree of clarity required before level 3 detail can be used in an identification (199);
  6. the need for new examiners to conduct a complete ACE-V analysis where one fingerprint lab disagrees with another (199-200);
  7. documentation of the phases of the examination, including the initial assessment of the latent print (Recommendations 10 and 11, pp 201-203);
  8. the inclusion of an element of “blind” verification (Recommendations 12 and 13, pp. 204-205).
65. There are elements of this report consistent with the Scottish HMICS report, including the need for standards and the requirement for documentation of workings. Ms. Tierney says that, as far as she understands, the findings of the OIG report were not considered specifically when SPSA’s policies were formulated.<sup>55</sup> Similarly, Mr. Pattison says that there is nothing in the Crown Office files to indicate that the OIG report was specifically considered by COPFS prior to the introduction of the non-numeric standard: letter 2 September 2009, commenting on Chapter 11, para. 63.

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66. The non-numeric standard was introduced in Scotland in tandem with a reduction in the content of the joint report (including dropping photographic enlargements charting the points of identity) and without the need for documentation of the observations made at each phase of the examination.
67. Mr. Pattison states that the Crown's position is that the disclosure of working notes is not essential to verification of fingerprint analysis, either at Crown precognition, or by the defence: letter to inquiry dated 2 September 2009.

#### National Academy of Sciences

64. The report of the National Academy of Sciences Committee on the Needs of the Forensic Science Community (2009) picks up familiar themes.
  1. Fingerprint identification is subjective, based on human interpretation (p. 139);
  2. The ACE-V method does not specify particular measurements or a standard test protocol (p. 139);
  3. Not even a numerical standard is truly objective because it is still based on the subjective judgment of the examiner regarding the features that are discernable and whether they are truly in agreement (p. 141).
  4. Available statistical modelling is of limited assistance because it does not yet take the clarity of identified features in to account (p.141).
  5. Claims of a zero error rate are not scientifically plausible (p. 142; and see p. 143).
  6. There is a distinction between the general premise that fingerprints are unique and the specific proposition that someone can reliably discern whether or not two friction ridge impressions were made by the same person (pp. 143-4).

65. The report concludes that ACE-V is too broad a framework, does not guard against bias and lacks transparency (p.142). The report notes that currently there is no requirement (in America) for examiners to document which features support their reasoning and conclusions and argues that there is a need for better documentation of each step in the ACE-V process, with at least sufficient documentation to reconstruct the analysis, if necessary (p. 143). Documentation is considered important to transparency and to providing the court with additional information on which to assess reliability (p. 143). However, overall the conclusion is that there is a need for scientific research to support the “intuitive knowledge” that examiners gain through experience (p. 144):

*“Formal research could provide examiners with additional tools to support or refute distortion explanations. Currently, distortion and quality issues are typically based on ‘common sense’ explanations or on information that is passed down through oral tradition from examiner to examiner. A criticism of the latent print community is that the examiners can too easily explain a ‘difference’ as an ‘acceptable distortion’ in order to make an identification.” (p. 145)*

#### Authorisation under section 280 of the Criminal Procedure (S) Act 1995

66. The Recommendations in the HMICS report (SG 0375) included support for a competency based standard for expert qualification (Recommendations 5 and 21). Beyond that the report questioned the authorisation process as a formality (para. 3.5.4) and recommended that it be given further consideration (Recommendation 6).
67. Authorisation was discussed at a meeting of the Standing Committee on Forensic Science Services in Scotland on 24<sup>th</sup> October 2000. Firstly it was noted that there was a variation in practice in labs across Scotland with some permitting scientists to give evidence even if they did not hold an authorisation. That said, there was recognition of the need to tighten up the authorisation process and membership of the CRFP was being viewed as a pre-condition of eligibility for authorisation.

68. Following the ACPOS Presidential Review Team report, Detective Superintendent Munro wrote to Crown Office on the subject of authorisation in April 2001.
69. A Crown Office memo dated August 2001 describes the authorisation process as rubberstamping and therefore ripe for review. In July 2002 the Scottish Executive sought representations to move the criteria for authorisation from 5 year experience to competency.
70. Authorisation was changed to a competency based criterion by circular 1/2003 and in March 2006 the O'Dowd report agreed that Recommendations 5 and 6 of the HMICS report (SG 0375) had been discharged by that change and some additional measures, including extensive take up of membership of the CRFP.
71. The current position is summarised in a statement provided to the Inquiry by Christie Smith, Deputy Director of the Police Division of the Scottish Government. Authorisation is relative to set criteria and the Scottish Government does not represent itself as assessing the competency of forensic scientists: see answer 3. More generally Mr. Smith writes:
- “Authorisation under section 280 is simply the process of authorising witnesses to sign written reports. It is not in itself intended to provide accreditation or certification that a person is an ‘expert witness’ and witnesses can be called to give ‘expert’ forensic evidence in court independently of this process, in which case expertise and qualifications must be established in oral evidence to the satisfaction of the court.”*
72. This is in conflict with the Scottish Fingerprint Service Action Plan for Excellence (April 2006) which addresses authorisation as a form of accreditation of practitioners: see paras 3.7-8.

## Chapter 11 issues

1. What was the status of the 16 point standard in Scottish practice in 1997-1999?
  - In what circumstances, if at all, did SCRO examiners testify to an identification if fewer than 16 points in sequence and agreement were observed by them?
  - Did the dire and crucial exception operate in practice in Scotland and, if so, how did it operate?
2. Is there any “standard”, as such, underpinning the non-numeric system of identification as practiced in Scotland?
  - Is there any standard of “quality” of observed characteristics?
  - Is there any standard or formula for assessing the combination of specific characteristics in common between a latent and known print in order to determine whether they are consistent with a unique identity?
  - Alternatively, is the judgment ultimately a subjective one for individual examiners?
3. How robust is the non-numeric system?
  - What degree of definition is there to each of the phases of the ACE-V method as practiced in Scotland?
  - How is the assessment phase carried out and to what extent and in what circumstances can an examiner take into account a characteristic first observed in the known print (i.e., not seen in his initial assessment of the latent)?

- To what extent does a proper “verification” process require independence on the part of the examiners, what does “independence” in this context mean, and how is independence of verification secured?
4. Is the non-numeric system suitably verifiable by (a) the Crown at the precognition stage and (b) the defence in the absence of documentation of the initial workings by fingerprint examiners?
  5. Does the changeover to the non-numeric standard enable fingerprint examiners to offer a much fuller explanation of the way in which they arrived at their conclusions if (a) there is no objective standard being applied and the judgment remains essentially subjective and (b) there is no statistical evidence of the incidence of particular combinations of common characteristics?
  6. Is it acceptable that the statutory authorisation system does not entail any element of independent accreditation?