

The views expressed in the report are the views of three Fingerprint Experts working in the Aberdeen Fingerprint Bureau, and are not intended to reflect the views of either the Scottish Fingerprint Service, the Chief Constable of Grampian Police, or of that organization.

*Extracts from the Scottish Fingerprint Service
Quality Assurance Manual*

“The Scottish Fingerprint Service Management has created a culture which encourages the interchange of ideas together with the freedom for any member of staff to challenge the accuracy, effectiveness and efficiency of any process employed in the Scottish Fingerprint Service.”

“The mission statement of this Scottish Fingerprint Service to be a world class supplier of fingerprint identification and verification service and create a centre of excellence of fingerprint expert witness provision” has inherent within it the need to establish and maintain common workplace practices across fingerprint bureaux in Scotland. This will provide the basis for an equitable, balanced and resilient mechanism within which the nation demands for fingerprint services will be more effectively managed.”

“The combination of a scientific approach, detailed procedures and unimpeachable standards are of paramount importance in protecting the integrity and independence of fingerprint evidence and in sustaining the vital role, which it has to play in the criminal justice system.”

“The procedures contained within this manualaim to reflect best practice within the context of HMCIC’s Recommendations and Suggestions, the need to ensure integrity and a transparent process.....”

Background

- **January 1997.** Detective Constable Shirley McKie, a murder enquiry officer, is accused of leaving her fingerprint in the home of murder victim Marion Ross having been instructed not to enter the house. She denies that the fingerprint is hers.
- **May, 1999.** Shirley McKie unanimously cleared of charges of Perjury. The Jury accept the evidence of American Defence experts that the SCRO identification was wrong.

On Tuesday 10 May 2005, we were visited by Ewan Innes, Head of the Scottish Fingerprint Service. On his visit he had a meeting with the staff of the Aberdeen Bureau. Mr Innes circulated to us a letter which he had brought with him from SCRO, which had been written by Mr David Russell, a Solicitor, on behalf of his client, Mr Peter Swann, an Independent Fingerprint Expert with regard to comparisons in the Shirley McKie case (*Appendix 1*).

http://shirleymckie.com/documents/SCROANDPETERSWANN4_002.pdf

This letter was addressed to Colin Boyd QC, The Lord Advocate. Mr Innes was questioned about the facts of the case. He told us, he did not know if the mark was indeed ident or not, but informed us that after the civil case, cited for the Court of Appeal in February 2006, that “the truth would come out”.

We asked if it was possible for us to view the marks for ourselves, but Mr Innes said despite the fact he would have liked us to have been able to see them, it was not possible as the Crown Office and the Justice Minister had blocked their release, and was out of his hands.

He also said that due to Ms McKie being found not guilty at her Trial in 1999, and in accordance with laws in Scotland, her fingerprints had been destroyed. SCRO did no longer have the fingerprints of Shirley McKie. He also said that any copy of the fingerprint that had been used in any previous presentation by his staff had also been destroyed. We realised given this information at this time we would never have the opportunity to see any presentation by staff of SCRO.

He did inform us that a further five experts in his office had also confirmed the original identification carried out during a “blind test” within SCRO. SCRO had taken the decision to circulate the Swann report among their staff, although he did admit that the majority of his staff had never been shown the fingerprints.

We have been aware of various images which have appeared on web sites with regard to the case, so we all were familiar with the marks in the case.

Recently a member of staff retired from the Fingerprint Bureau. When their belongings were being cleared two photographs (*copied below*) were discovered. On examination they appeared to be of the marks which we had seen on the Internet with regard to this case. As you will be aware this case has attracted much publicity towards the Fingerprint profession over the last few years. As Fingerprint Experts, who take professional pride in the integrity of the Science of Fingerprints, we decided that, if indeed these were actual copies of the marks, we would carry out our own unbiased comparisons.

As none of us had ever seen “original” material, we deemed before we could carry out our own independent comparisons of the marks, we needed confirmation that the images we held were indeed the actual marks from the case in question. To confirm this, we contacted Pat Wertheim, a Fingerprint Expert from America, who had been involved in this case previously. He was sent copies of the mark, and was asked if he could confirm that the photographs we had were genuine images. His response was:

I am fascinated by the images you sent because they are indeed the original crime scene mark from the bathroom door frame in Marion Ross' house, directly above where her body was found, and an inked left thumbprint of Shirley McKie.

You can confirm these images by going to www.onin.com/fp and pulling up the page on "problem idents." On that page you can scroll down and find images scanned directly from my negatives. I made my photographs using a Nikon FE-2 camera with a Nikkor 55 mm Micro lens and T-Max 100 film. The images on the internet were scanned with a Nikon negative scanner.

Thank you for contacting me.

Warmest regards,

Pat A. Wertheim

We were satisfied beyond doubt that we were in possession of genuine marks from the case. Mr Wertheim offered to send us actual Inked Impressions (*copied below*) which he had taken personally from the left thumb of Shirley McKie in 1999, to aide us with our comparisons.

The photographs had been originally sent to our retired officer by the Head of an English Fingerprint Bureau many years ago, and had remained undiscovered in the Bureau until very recently. How the photographs came into the possession of the English Bureau is unknown.

Because of any possible legal implications in having a copy of Ms McKie's fingerprint in our possession, we decided to contact the McKie family directly to ask their permission for us to use the photographic image of the fingerprint and also the inked sets for our comparison purposes. We did at NO time indicate to the McKies what our feelings about the marks were, as no comparisons had taken place at this point.

Mr McKie's response to us was:

Thank you for contacting me re fingerprints in your possession purporting to relate to my daughter's case.

I am aware of the legal position re the retention of fingerprints and am naturally surprised that you have these photographs.

That said providing the fingerprints you have are validated by Pat Wertheim who has knowledge of the case productions, I have no objection to your carrying out whatever comparisons you wish. I anticipate that steps will be taken to ensure that individual experts are allowed to independently come to their own conclusions free of any other expert influence.

This is the first time Scottish experts have made an offer to openly make a comparison and for this reason I view your request as extremely important. I accept that your request is made in good faith with the aim of coming to your own independent view of the SCRO assertion that their identification of my daughter's print is correct.

Permission to carry out the comparison is dependent on my being given a copy of your findings at the same time as any other individuals and agencies.

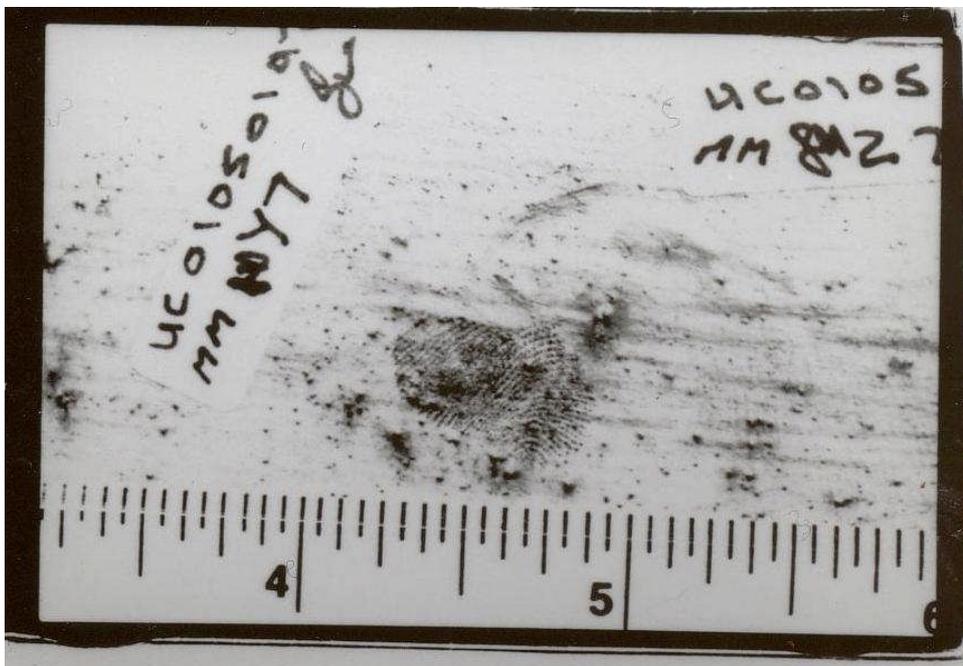
I continue to believe that the vast majority of Scottish experts are efficient and effective and act with honesty and integrity

It would be useful to know when you anticipate completing your report. Please do not hesitate to contact me if I can be of further assistance.

*Yours sincerely
Iain McKie*



Photograph of inked Left Thumbprint of Shirley McKie



Photograph of Crime Scene Mark



Inked fingerprints taken from the Left Thumb of Shirley McKie

Inked prints of
Shirley McKie's
Left Thumb
taken by me,
PAT A. WERTHEIM,
24 March 1999,
in Glasgow.



Signed statement of Pat Wertheim

COMPARISONS

We felt confident we could legally carry out a comparison of the photographs, and also as to the genuineness of the items we were examining. We felt it was extremely important for us, as Experts within the Scottish Fingerprint Service, to carry out a comparison of these marks to substantiate or refute the original identification, given the seriousness of this case to the whole future of the Fingerprint Service in Scotland.

All the Fingerprint Experts within the Aberdeen Bureau were approached and asked if they wished to view the images, but a number declined to do so, for various reasons.

We were aware that Scottish Experts from another Bureau had previously offered opinions on the marks, and how they had subsequently been treated. Despite this, the three of us were committed to the comparison.

THE IDENTIFICATION PROCESS

The following offers a brief description as to the processes adopted by ourselves during the comparisons of the marks in this case.

For over 100 years, thousands of fingerprint experts and scientists have compared billions of fingerprints and although not all have been compared, no one has yet found or reported an instance where two areas of friction skin from different sources had the same configuration, and could not be differentiated. The pioneers of fingerprints have quantified and qualified the uniqueness of the fingerprint. The system for fingerprint identification has evolved from this research and has stood the test through many lifetimes of experience.

The process used for carrying out fingerprint comparisons is referred to by the acronym **ACE – V**, which stands for ***Analysis, Comparison, Evaluation and Verification***.

This is a methodical and systematic process that ensures all of the mark and print are analysed and compared in progression. Because the arrangement of friction ridge detail is sufficiently different to consider every individual as unique, the orientation, location and interrelationship of the features can determine whether two prints were made by the same individual, eliminating anyone else as a possible donor.

ANALYSIS

The mark (i.e. scene of crime mark) is initially analysed in order to ascertain and establish the amount of friction ridge detail that is present. Because of the elasticity of the skin and the various different surfaces that fingerprints can be left on, the quality of the mark can vary significantly and some can reveal far more detail than others.

Before the mark is compared, it is orientated such that the skin area or digit that created the mark can be decided. Pattern types and their frequency of occurrence on a particular finger also helps in determining which finger made a mark.

COMPARISON

When the mark has been orientated, the detail revealed on both the unknown mark and known print is compared systematically to determine if they are at least similar. The overall **fingerprint pattern** however does not have sufficient uniqueness to individualise, and only functions to narrow the number of possibilities of donors.

At this stage of the comparison, differences in the pattern type may be sufficient to eliminate the mark from the print.

If however the pattern in both the mark and the print are found to be similar then the comparison moves to the next level.

This level includes the comparison of the ridge characteristics. Ridge characteristics (i.e. bifurcations and ridge endings) are individual features with the potential to make each print capable of being differentiated from any other print. The specific ridge path of the mark is compared to that of the print to ascertain if the characteristics are in agreement.

This part of the identification process is known as the ‘**coincident sequence**’ of friction ridge characteristics within the pattern that are unique to the individual. This is when the ridge characteristics are:

The same

In the same order

Bear the same relationship to each other in both impressions under comparison and with sufficient in agreement and none in disagreement.

EVALUATION

Comparison of the pattern type and the ridge characteristic sequence will be sufficient in most cases to individualise or exclude.

The final **Evaluation** therefore is an amalgamation of **all** of the information contained within the comparison. This encompasses all the features available from the analysis including pattern family/type, digit determination, ridge flow, creases, scarring and ridge characteristics.

VERIFICATION

The identification undergoes an internal, independent verification process by going through a 'checking' system. Two other experts must examine the unknown mark, re-working the comparison. There must be agreement with the identification by these experts before the notification of the identification is to be made.

If an unknown mark is clear, there will usually be an ample volume of unique detail present to individualise. However, scene of crime marks are not always so obliging, they may lack clarity or contain insufficient detail to individualise. In such cases it may not be possible in every instance to identify the mark.

With regard to any fingerprint comparison there are only THREE possible results. The mark WAS made by the individual, the mark WAS NOT made by the individual, or the mark contained insufficient detail to individualize. There cannot be any other result.

RESULT OF COMPARISONS

We undertook the comparisons in the knowledge that our findings would be collated and produced in this report. We did not have any preconceived ideas as to what our findings might be prior to us starting our comparisons, despite being handed Peter Swann's report from the Head of The Scottish Fingerprint Service.

It is important to note that we carried out these comparisons in our own time.

We examined the marks independently of each other, keeping a diary page, on which we recorded our findings. We did not know of each others findings till the comparison had been completed. At this stage the results were compared, and we were aware for the first time what the conclusion was.

CONCLUSION

We all concurred that the actual scene of crime mark contained sufficient detail for us to individualize. The mark did appear consistent with being on a white painted wood surface. The mark is black, consistent with having being developed with black fingerprint powder. There are a number of clear ridge characteristics visible in the mark. Although there are signs of pressure having been applied at the time the print was originally left, there are no obvious signs that there is a “double touch” in the mark.

The second print is consistent with being an inked impression on paper. It is consistent with being a left thumb print. The pattern is a loop pattern. It contains sufficient detail for us to individualize.

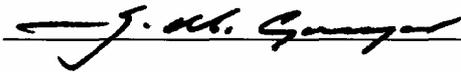
We compared the two prints to see if they could have been made by the same finger. **We all independently concluded that the scene of crime mark was NOT made by the finger which appeared on the photograph. There are a significant number of ridge characteristics which DO NOT appear in coincident sequence.**

We are satisfied beyond any reasonable doubt that the mark disclosed on the Crime Scene photograph was NOT made by the Left Thumb of Shirley McKie.

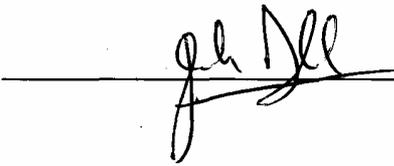
We have been faced with a huge personal dilemma as a result of our findings, but we do realise we are unable to remain silent on what is matter of extreme importance to the future of our profession in Scotland, and indeed to the future of the Fingerprint Service worldwide. We are all experienced Fingerprint Officers, and take personal pride in the work we carry out in the Identification of individuals by means of fingerprints. We believe integrity and openness are absolutely paramount to the future of any Scottish Fingerprint Service.

The extracts quoted at the start of this report taken from the Scottish Fingerprint Service Manual allow us, as members of that Service to question the accuracy of this identification. It also allows us to try and protect the integrity and the independence of fingerprint evidence in Scotland.

As Experts we believe that there should be an External Investigation carried out, by fingerprint personnel from outwith the UK, who can review the Case and prepare an Independent and unbiased report. Only when the results of any such Enquiry are known and accepted, can the Scottish Fingerprint Service move on and become the “world class supplier of fingerprint identification and verification service and create a centre of excellence of fingerprint expert witness provision”.



JOHN MCGREGOR
Fingerprint Expert
23 Years experience



JOHN DINGWALL
Fingerprint Expert
17 years experience



GARY DEMPSTER
Fingerprint Expert
14 years experience

Report copied to:

Mr Colin Boyd QC, Lord Advocate

Mr Ewan Innes, Head of the Scottish Fingerprint Service

Mr David Donaldson, Head of Fingerprints, Aberdeen Bureau

Mr Colin McKerracher, Chief Constable, Grampian Police

Mr Iain Mckie