

Scientific Examination Report

prepared by:
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Subject of report: Evaluation of crime scene and fingerprint evidence and examinations in the murder investigation of Inge Lotz; Special attention to the analysis of "lift #1," also known as "Folien #1," and comparison of latent fingerprints on lift #1 with the inked fingerprints of Fred van der Vyver.

Items considered in conducting this examination:

1. Copies of crime scene photographs from the flat of Inge Lotz.
2. Copies of two foliens with latent fingerprints.
3. Copies of nine tape lifts with latent fingerprints and palm prints.
4. Original inked fingerprints and palm prints of Fred van der Vyver.
5. Copy of report of Daan Bekker to Adv. P. J. De Bruyn, 20 Feb 2006.
6. Copy of report of Director RH Botha, 19 Dec 2005.
7. Various drinking glasses used for experimentation.
8. Various DVD cases used for experimentation.
9. Various fingerprint equipment and supplies used for experimentation.

Facts, observations, experiments, data, and conclusions:

1. I was employed by the Kerrville, Texas, Police Department from 1973 – 1975 and, after a six-month hiatus, again from 1976 – 1979. My job duties in part consisted of examining evidence and scenes of crimes for latent fingerprint marks. During the last three years of my employment in Kerrville, my primary assignment was as Identification Officer. I processed all major crime scenes, including photographing and sketching the scenes, collecting evidence of all types, and developing latent fingerprints at scenes of crimes and on evidence. I also compared latent fingerprints to inked fingerprints. I first testified to fingerprint identifications in 1978.
2. I was employed by the Plano, Texas, Police Department from 1980 through 1989. During all except the first two months of my employment, my duties included photographing and sketching scenes of crimes, collecting evidence of all types, and processing the scenes and evidence for latent fingerprint marks. I also compared latent fingerprints from scenes and evidence with the inked fingerprints of known persons. From 1986 through 1989, I served as supervisor of the Identification Unit for the department. My duties included supervising and training identification technicians and property custodians. I also taught courses in crime scene examination and fingerprint comparison at the Tri-Cities Police Academy and at the North Central Texas Regional Police Academy. I testified numerous times to fingerprint identifications and was frequently requested by the District Attorney to examine fingerprints and testify in cases other than those of my own agency.
3. I was employed by the Arizona Department of Public Safety (DPS) Southern Regional Crime Laboratory (SRCL) from 1989 through 1997. My duties consisted of examining scenes of crimes and evidence for latent fingerprint marks, comparing and identifying any latent prints found with the inked prints of known persons, and testifying to my conclusions. In addition, I instructed classes frequently in fingerprint related matters and prepared proficiency tests for other latent print examiners in the crime laboratory.
4. I was employed by Lightning Powder Company, Inc., from March 1997 through March 1999 as the company vice president. My primary job functions were to create a training section for the company, coordinate classes, and instruct in topics of fingerprint identification to police agencies and officers throughout the United States.
5. From April 1999 through July 2001 I was self employed as a trainer in the subject of latent fingerprint comparison and identification.

As a self-employed instructor of fingerprint comparison, I taught classes throughout the United States, as well as in the Caribbean, New Zealand, the United Kingdom, and the Netherlands. In addition, I served as an independent consultant in fingerprint matters.

6. From August 2001 to present I have been employed again by the Arizona Department of Public Safety Southern Regional Crime Laboratory in Tucson. My duties consist of examining evidence and scenes of crimes for latent fingerprint marks, comparing and identifying any marks found with the inked prints of known persons, and testifying to my conclusions. In addition, I am occasionally asked to prepare proficiency tests for other latent print examiners in the agency and to instruct in fingerprint related matters.

7. I have attended all of the training courses in fingerprint classification, comparison, and identification offered by the Texas Department of Public Safety at their Training Academy in Austin, Texas. I have also attended all of the training courses offered by the Federal Bureau of Investigation in the comparison and identification of latent fingerprint marks, both courses taught regionally and at the FBI Academy in Quantico, Virginia. In addition, I have attended numerous other training courses, conferences, and symposia related to fingerprints.

8. I have taught numerous courses in advanced latent fingerprint comparison and I am widely recognized as an expert in the comparison and identification of fingerprints. I have also taught numerous courses in crime scene examination and I am recognized as an expert in that field, as well.

9. I have studied all of the available literature on fingerprint forgery and fabrication and have conducted numerous experiments on those topics dating from February 1992. I have published numerous articles, given numerous talks, and taught numerous classes on the topic of fingerprint forgery and fabrication. I am recognized as an expert in the detection of forged and fabricated fingerprint evidence.

10. I was awarded status as a Certified Latent Print Examiner by the International Association for Identification in 1981 and have maintained my certification continuously since that time. I was most recently tested and certified in December, 2005.

11. I was awarded status as a Certified Senior Crime Scene Analyst by the International Association for Identification in 1996 and served as Chairman of that Certification Board for several years.

12. From time to time, I continue to teach advanced courses in fingerprint related matters as a private instructor outside my employment responsibilities at Arizona DPS. I also lecture and teach workshops on fingerprint topics at regional and international conferences. Since resuming full time employment at Arizona DPS in 2001, I have taught weeklong advanced courses independently in Wales (UK), Australia, American Samoa, and several states in the United States.

13. From time to time, I instruct in topics of crime scene examination, crime scene photography, evidence collection, and other crime scene related investigation techniques. Also, I am occasionally called upon to advise police officers from other police agencies at scenes of major crimes.

14. From time to time, I also serve as an independent consultant in fingerprint matters. I do so as a private individual and not as an agent of DPS. Such consultations take place outside of the facilities of the DPS and are done on my own time. Any conclusions I reach in any such consultation are mine alone and do not represent any official position of DPS. DPS assumes no responsibility for any conclusions I might reach in any such consultation. This report is prepared as a result of private consultation and is in no way supported or sanctioned by DPS. The views and conclusions presented in this report are mine and have not been reviewed or sanctioned by DPS.

15. A copy of my curriculum vitae has been provided for inspection. (Appendix A.)

16. Fingerprint "forgery" is the planting of a fingerprint on a surface so that the fingerprint appears to have been left by the finger or fingers of the person to whom it can be identified. In a forgery, the person who is represented by the fingerprint has never actually touched the surface on which his fingerprint has been planted or "forged." Forgery implies the planting of a fingerprint on a surface by a criminal in an attempt to mislead the police. In reality, fingerprint forgery is so rare as to be virtually nonexistent.

17. Fingerprint "fabrication" is the fabrication of evidence by police. In a case of fingerprint fabrication, the fingerprint never actually existed on the surface from which it is alleged to have come. Unfortunately, fingerprint fabrication by police is not so rare. Latent fingerprint fabrications by police have been detected and reported since the 1920s. Of the hundreds of reported cases of fingerprint fabrication I have studied, all fabrications fall into one of the three following categories: 1. Fingerprints lifted from inked or known fingerprints and represented as having come from evidence; 2. Staged photographs in which fingerprints appear to be on surfaces where they do not actually exist; and 3. Mislabeled fingerprint lifts in which the fingerprints were lifted from different surfaces than those claimed by the police.

18. In fingerprint forgery, a fingerprint actually does exist at the scene of a crime or on a piece of evidence although the person whose print it is never actually touched the evidence at all. In fingerprint fabrication, the fingerprint never existed on the evidence in the first place but came from a different surface and has been misrepresented by the police.

19. A copy of my in depth article, "Forgery and Fabrication of Latent Fingerprint Evidence," originally published in the Journal of Forensic Identification in the May/June 1994 issue has been provided for inspection. (Appendix B.)

20. A copy of a second article I wrote, "Latent Fingerprint Fabrication," written in 1997 for submission to numerous regional newsletters and trade publications and published in a number of forums including the internet, has also been provided for inspection. (Appendix C.)

21. Photographs, notes, and reports of the South Africa Police Service (SAPS) regarding the murder of Inge Lotz were studied as part of the examination in this case. The murder was very brutal and excessive force was used by the killer. Clubbing and stabbing appears to have continued after the death of Ms Lotz. Blood appears to have been dripped and smeared in areas and in rooms other than where the murder occurred. This would indicate that the killer spent considerable time in the flat and would probably have left substantial evidence of identity.

22. The initial crime scene examination by SAPS leaves much to be desired. In regard to the processing of surfaces for latent fingerprints, it seems highly likely there would have been more than eleven identifiable fingerprints on surfaces inside the flat. The fact that only eleven lifts were taken indicates either that the flat and all contents were phenomenally clean or that only a superficial effort was made to locate fingerprints. The extremely low number of surfaces examined and lifts taken implies the latter.

23. In a review of the crime scene work of the SAPS, a blatant deficiency was noted in the quantity and quality of the crime scene photographs made available to me. Good crime scene photography consists of three levels of photographs, all taken before any evidence is moved or fingerprinting begun. First, overall photographs of the scene should be taken that overlap each other and show the entire scene, even things believed at that time to be of no evidentiary value. Overall photographs begin outside a building or crime scene, proceed in through the doors and hallways, and arrive at the actual scene with a series of views that a person entering the scene would see. Overall photographs then move around each room that might be part of the crime scene in the building and are taken in overlapping fashion. Second, midrange photographs should be taken that show all items of evidence with attention to inclusion of background, other pieces of evidence, and overall relationships between the scene and the specific items of evidence. Third, close up photographs should be taken of each and every piece of evidence in its original position from at least one direction, more if appropriate. Included in the close up photographs should be photographs of the latent prints prior to lifting. In a major crime such as murder, film is cheap but evidence is priceless. A good series of photographs that includes overall photographs, midrange photographs, and close up photographs is indispensable to a continuing, thorough investigation. Such a series of well done photographs tells a complete story – the story of the crime. Taking too few pictures in the first stage of the investigation leaves unanswerable questions after items of evidence have been moved. Such is the situation in this case.

24. Although it appears no photographs were taken of any latent fingerprints prior to lifting, photographs of the eleven lifts (two foliens and nine tape lifts) were provided for examination. The latent prints disclosed by the SAPS are listed as follows:

#1 – A photograph of a folien (black gel lifter) containing two latent fingerprints of value for comparison, believed to have been dusted with aluminum powder. An additional photograph was provided in tone and position reversal. The back side of the folien states the lift was taken ". . . from a DVD disk Holder which was found on coffee table in lounge and show's sideway to the left . . ."

#2 – A photograph of a folien containing several latent prints of value for comparison; a photograph was also provided in tone and position reversal. The back side of the folien states the lift was taken ". . . from water glass which was found on coffee table and show's upwards . . ."

#3 – A photograph of a lift believed to have been powdered with black powder, lifted with clear cellophane tape, and placed on a white or light colored lift card, containing one latent palm print of value for comparison. The back side of the lift states the lift was taken ". . . from wash basin in bathroom and show's upwards and is ± 0.700 mm from floor . . ."

#4 – A photograph of a lift believed to have been powdered with black powder, lifted with clear cellophane tape, and placed on a white or light colored lift card, containing one latent print of value for comparison. The back side of the lift states the lift was taken “. . . from security gate telephone in kitchen and show's upwards . . .”

#5 – A photograph of a lift believed to have been powdered with black powder, lifted with clear cellophane tape, and placed on a white or light colored lift card, containing two latent fingerprints of value for comparison. The back side of the lift states the lift was taken “. . . from security gate at front door and show's sideway's to the right and is ± 0.900 mm from floor inside . . .”

#6 – A photograph of a lift believed to have been powdered with black powder, lifted with clear cellophane tape, and placed on a white or light colored lift card, containing one latent fingerprint of value for comparison. The back side of the lift states the lift was taken “. . . from security gate at front door and show's sideway's to the left and is ± 0.900 mm from floor inside . . .”

#7 – A photograph of a lift believed to have been powdered with black powder, lifted with clear cellophane tape, and placed on a white or light colored lift card, containing one latent fingerprint of value for comparison. The back side of the lift states the lift was taken “. . . from security gate at front door and show's sideway's to the left and is ± 1.000 m from the floor outside . . .”

#8 – A photograph of a lift believed to have been powdered with black powder, lifted with clear cellophane tape, and placed on a white or light colored lift card, containing friction ridge detail. The back side of the lift states the lift was taken “. . . from security gate at lounge Balcony door and show's sideway's to the right and is ± 0.500 mm from the floor outside . . .”

#9 – A photograph of a lift believed to have been powdered with black powder, lifted with clear cellophane tape, and placed on a white or light colored lift card, containing two latent fingerprints of value for comparison. The back side of the lift states the lift was taken “. . . from security gate at lounge Balcony door and show's sideway's to the right and is ± 0.800 mm from floor outside . . .”

#10 – A photograph of a lift believed to have been powdered with black powder, lifted with clear cellophane tape, and placed on a white or light colored lift card, containing friction ridge detail. The back side of the lift states the lift was taken “. . . from security gate at lounge Balcony door and show's sideway's to the right and is ± 0.900 mm from floor outside . . .”

#11 – A photograph of a lift believed to have been powdered with black powder, lifted with clear cellophane tape, and placed on a white or light colored lift card, containing friction ridge detail. The back side of the lift states the lift was taken “. . . from security gate at lounge Balcony door and show's downwards and is ± 1.200 mm from floor inside . . .”

25. Photographs of the eleven lifts are not best evidence because the detail is somewhat blurred under magnification. The latent prints in photographs of lifts 1, 2, 3, 4, 5, 6, 7, 9, and 10 are suitable for comparison. Ridge detail is visible in lifts 8 and 11 which may be suitable for comparison in the original lifts, but is not suitable in the photographs. A comprehensive examination would have to be made of the original lifts to determine actual suitability of the latent prints for comparison purposes.

26. These eleven lifts were taken from only six surfaces in the flat. The six reported surfaces were a DVD case, a water glass, the bathroom wash basin, the security gate telephone in the kitchen, the security gate at the front door, and the security gate at the lounge balcony door. It is hardly conceivable that these were the only six surfaces in the flat that would have yielded latent fingerprints. It can only be concluded that other surfaces suitable for latent fingerprints were simply not examined or were overlooked altogether.

27. It is alarming that in a brutal murder such as the murder of Inge Lotz, no more than eleven lifts were taken. This fact leaves a number of questions unanswered. Was the kitchen examined for latent fingerprints? Was the bedroom examined for latent fingerprints? Were items in the rubbish bins examined for latent fingerprints? Was any telephone other than the security gate telephone examined for latent fingerprints? Were any of the doors and door frames in the flat examined for latent fingerprints? Were the water faucets on the various sinks and shower examined for fingerprints? Were both bathrooms examined thoroughly for latent prints? Another important question is whether there were any lifts other than these eleven taken and, if so, what has become of them? Are there other lifts in existence that have not been disclosed? Have any lifts been destroyed, thus denying the defense the opportunity of examining them?

28. Latent fingerprints on lifts #1, #3, and #7 are marked as having been identified to Fred van der Vyver. The designated latent prints on these three lifts were compared to the inked prints provided for Fred van der Vyver and the identifications were verified as follows:

Lift #1 – Identified as having been made by the left index finger (finger #7).

Lift #3 – Identified as having been made by the right palm (RP).

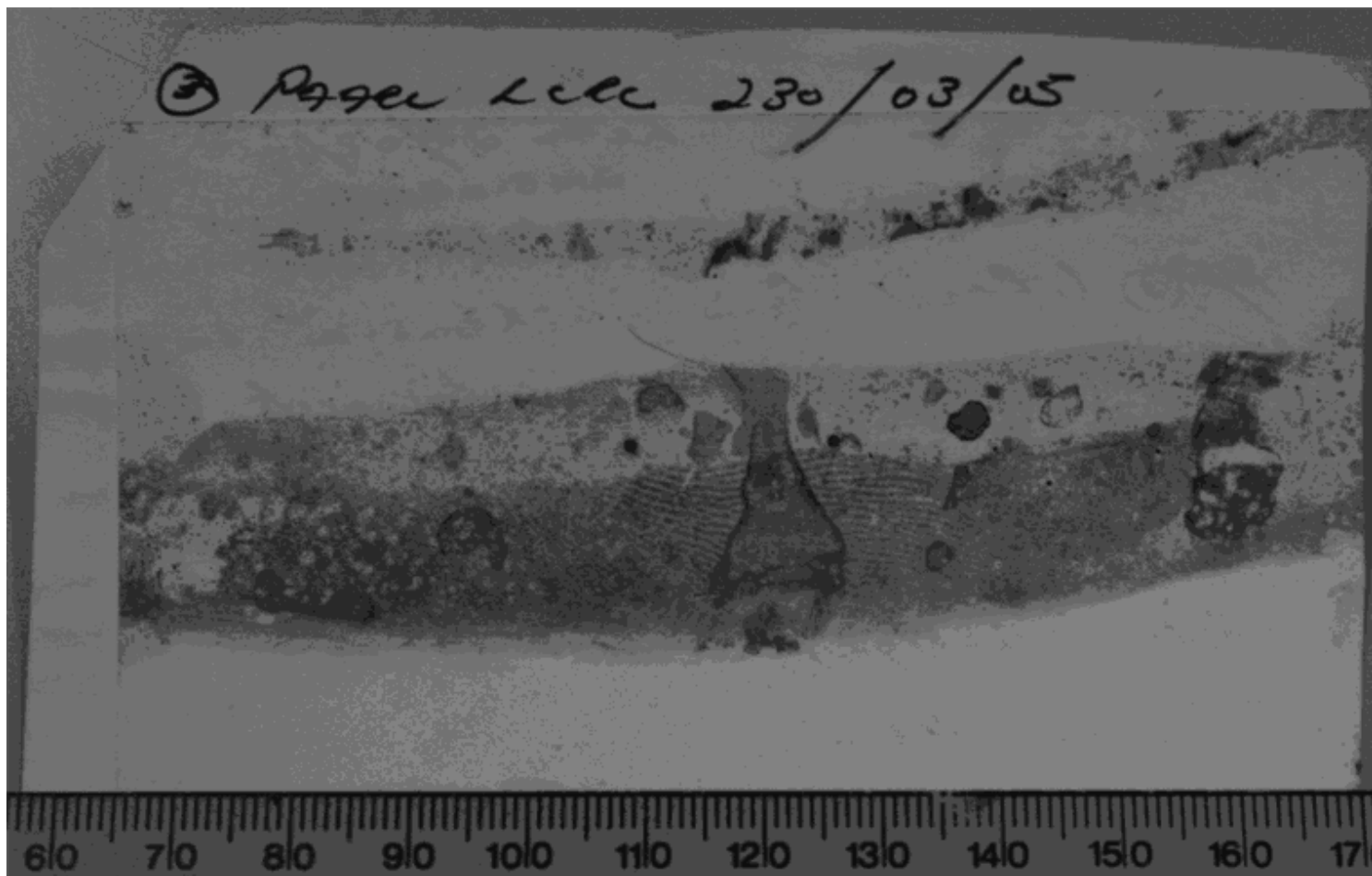
Lift #7 – Identified as having been made by the left index finger (finger #7).

29. In addition to the identifications marked by the SAPS as having been identified to Fred van der Vyver, one additional latent print on lift #1 was identified as having been made by the right thumb of Fred van der Vyver.

30. It should be noted that latent prints of value for comparison exist on at least lifts 4, 5, 6, 9, and 10, but these latent prints remain unidentified. Might some of these latent prints have been left by persons who never had legitimate access to the flat? We do not know what effort has been made to identify these latent prints. To whose known fingerprints have these latent prints been compared?

31. The latent partial palm print in lift #3 purports to have been taken from the edge of the wash basin in the bathroom. Examination of

the crime scene photograph of the wash basin provides sufficient consistency of background to support this wash basin as the substrate from which the lift was taken. (NOTE: Photographs reproduced in this report are presented for context only and may lack fine details. For examination of the finer details in these photographs, the original lifts and lift photographs should be consulted.)

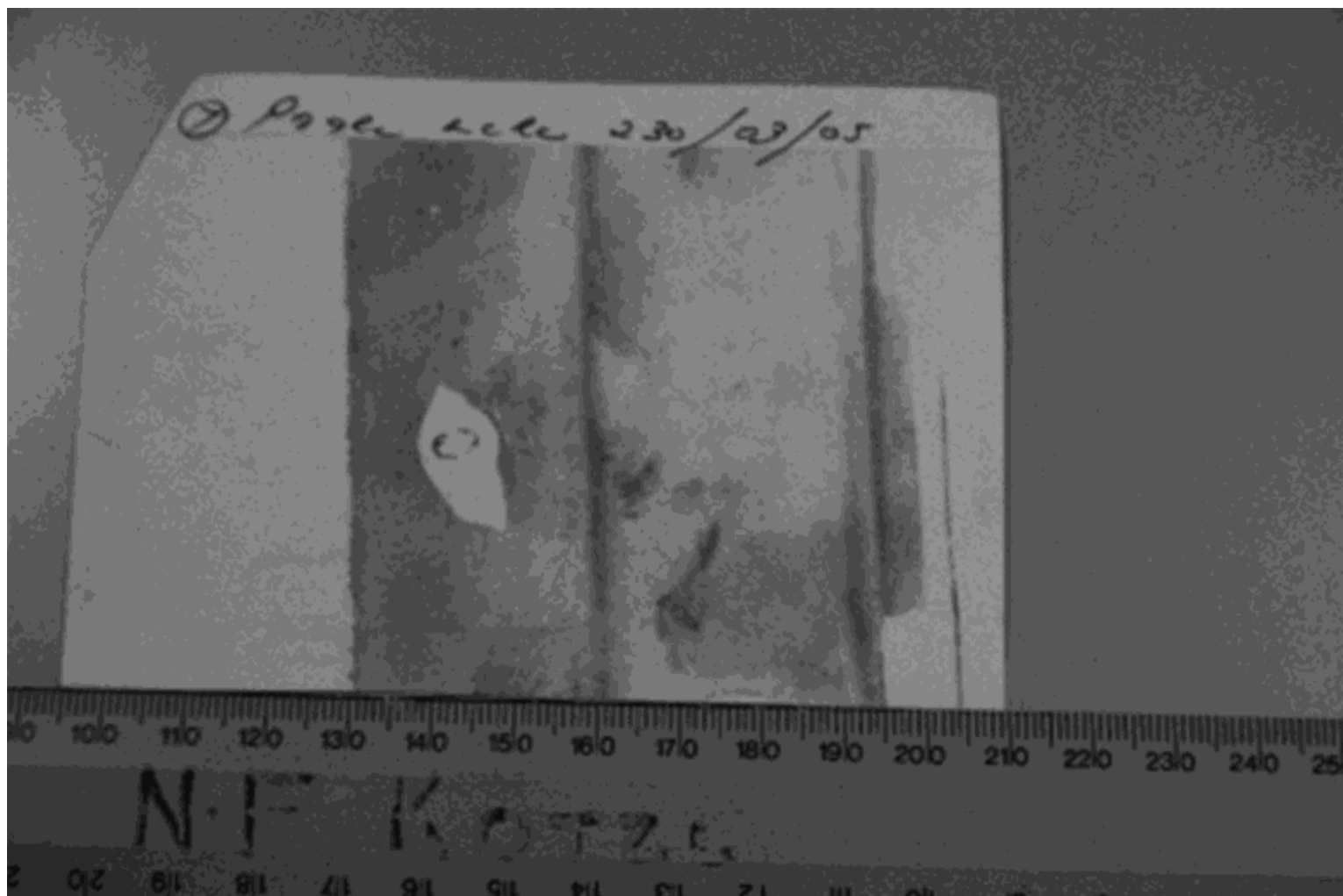


LIFT3

3.7MB [Lift3-Original.bmp](#) (to download the full res version, right-click the link and "save target as" to your computer)

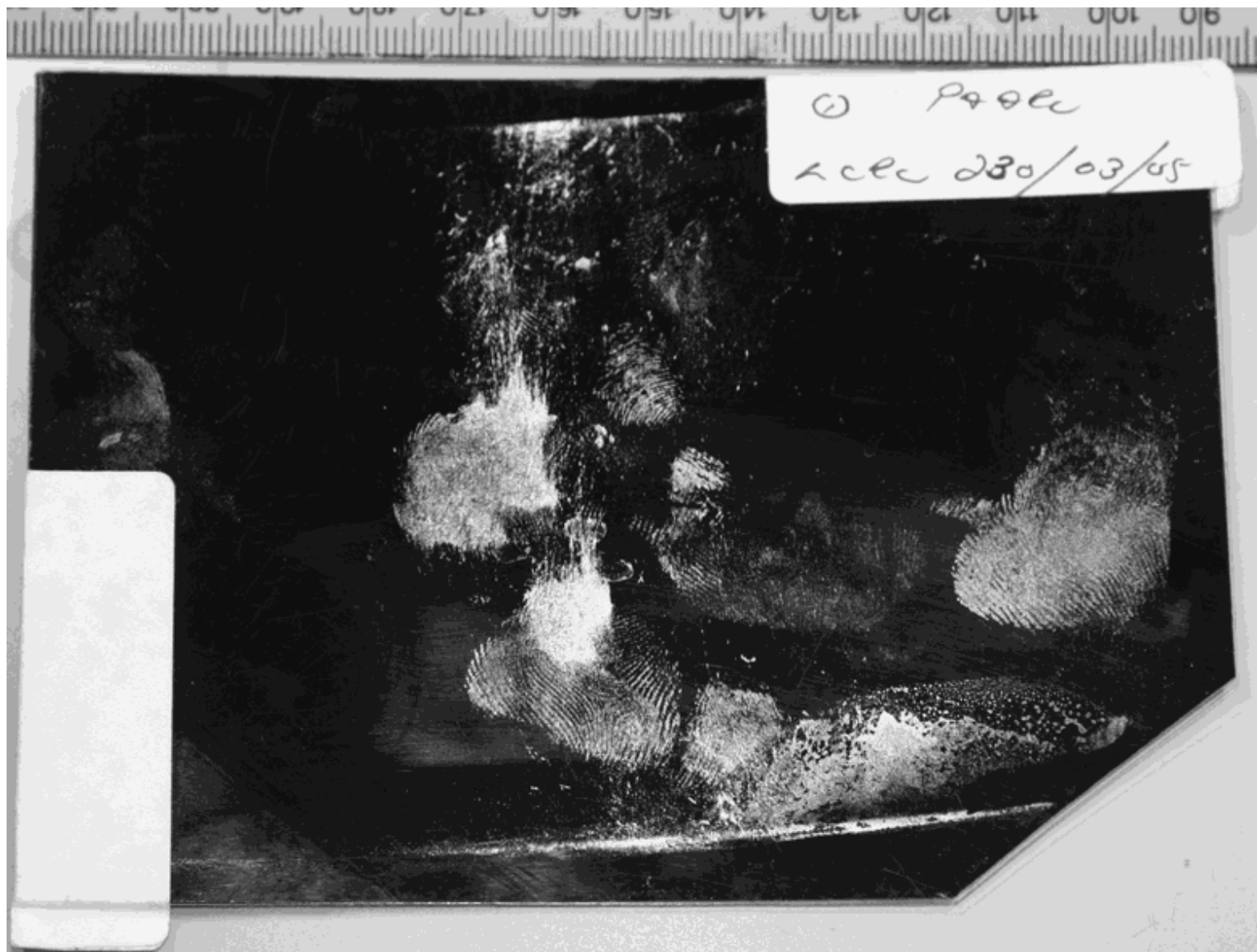
32. At least two spots of liquid were splashed onto the partial palm print in lift #3. In these two areas of splashed liquid the ridges have been washed away, indicating the liquid was splashed onto the latent print at some time after the print was deposited. The liquid had dried before the print was powdered (dusted). The composition of the liquid cannot be determined but no evidence of reddish tint is present that might visibly indicate blood. If blood was present in the liquid, there may be sufficient biological material in the lift itself to profile the DNA of the blood donor.

33. The lift in #7 is purportedly from a security bar or gate. Nothing in the lift suggests otherwise. The background in the lift is consistent with a security bar or gate component.



LIFT 7

34. Lift #1 (also referred to as folien #1 and hereafter referred to occasionally only as "#1") was examined with special attention to consistency with the substrate designated by SAPS. The back of #1 states ". . . lifted from a DVD disk Holder which was found on coffee table in lounge and show's sideway to the left. . . ." (NOTE: Photographs reproduced in this report are presented for context only and may lack fine details. For examination of the finer details in these photographs, the original photographs should be consulted.)



LIFT 1

3.3MB [Lift1-Original.bmp](#) (to download the full res version, right-click the link and "save target as" to your computer)

35. It is inconceivable that in a murder investigation, a critical item of evidence of negligible monetary value should be returned to the store from which it was rented by the victim in one of her last living acts. In this case, many pieces of evidence are no longer available for examination. The crime scene itself was not protected between the several examinations by various investigators. Contamination of the scene cannot be refuted by the police because the crime scene was not maintained in a secure fashion. People not associated with the investigation were allowed into the scene to remove things. These people were not trained in crime scene procedures and were not supervised by police personnel. Others may have entered the scene unknown to the police before the final examination by the police.

36. Elements of lift #1 include the following:

A – Two distinct apparent edges of the substrate, parallel approximately 80 mm apart and slightly curved.

B – The side of a fingerprint with an apparent pattern of left slope loop (identified in paragraph 28 above as the left index finger of Fred van der Vyver). The relationship between the first and second phalanges shows a degree of curvature.

C – Two adjacent latent prints lacking sufficient value for comparison, but having physical characteristics consistent with simultaneous impressions of fingers #8 and #9

deposited contemporaneously with #7 of Fred van der Vyver (no firm conclusion of simultaneity could be supported through identification of the fingerprints themselves).

D – A latent fingerprint that has the characteristics of a right thumb located "below" the latent adjacent to van der Vyver #7, pointing in the same general direction as the other latent prints and subsequently identified as the right thumb of Fred van der Vyver as reported in paragraph 29 above.

E – An elongated semi-elliptical latent mark without ridge detail that appears to have been deposited while wet or damp, but was dry at the time it was powdered, adjacent to the latent identified as van der Vyver #7 and parallel to the curved edge of the substrate. This latent mark, deposited while wet or damp, is consistent in size, shape, and location with a lip print.

F – Assorted other fragments of ridge detail lacking sufficient quantity and quality to be of value for comparison.

G – At least two areas approximately one centimeter across, one of which overlaps the latent identified as having been made by Fred van der Vyver, finger #7, appear to have been wet at the time the surface was powdered (dusted) for fingerprints.

The two areas are completely occluded with powder and show striations bordering the areas that most likely represent brushing by the fibers of the brush used to apply the fingerprint powder. The conclusion is that there were at least two drops of liquid on the substrate at the time it was powdered for fingerprints. If the drops were contemporaneous with deposition of the latent prints, this would indicate that the latent print was powdered and lifted a relatively short time after deposition of the prints.

H – While there are the two spots where there were apparently wet droplets of water at the time the surface was powdered for lift #1, there are also several shapes in the lift that are conclusive for completely dried droplets on the surface at the time it was powdered.

I – There was little deposition of powder in the general background of the lift between areas of specific development, such as the edges of the substrate, the latent fingerprints, and the apparent drops of wet and dried liquid. This indicates a very clean surface with no propensity to attract or hold powder on its own.

37. Several major points of concern were recognized in the analysis of #1 with respect to the purported substrate.

A – First, and of primary importance, there is no photograph of a fingerprint on the DVD case itself. There is not even a sketch showing the location of the latent print on the DVD case. Was it on the outside surface of the cover? Was it on the inside? It is implied by the SAPS and I will assume for purposes of this report the latent print was developed on the outside of the DVD case. It should be noted that there is not even a good crime scene photograph showing any detail of the DVD case on the coffee table.

B – Parallel edges of the substrate are visible in the lift. These parallel edges are curved, not straight as one would expect to see on a lift from a DVD case.

C – The distance between the parallel curved edges of the substrate is approximately 80 mm, not a dimension present on any known DVD case. Both edges of the substrate are more heavily developed than the interior of the lift from the substrate, indicating a solid edge of the substrate rather than a mere edge of the contact between the folien and the surface.

D – The edge of a DVD case is stamped and has a groove running along the edge, which produces a black line (absence of powder) in a lift on a folien. No such line representative of the groove at the edge of a DVD case is noted in lift #1.

E – The latent fingerprint in #1 identified as having been made by the left index finger of Fred van der Vyver is on the side of the finger outside of the delta and has a general curvature of the latent, both traits normally produced in the handling of a curved surface but inconsistent with having been deposited on a flat surface such as a DVD case. The adjacent latent print demonstrating consistency with simultaneity also shows curvature consistent with having been deposited on a curved surface.

F – In particular, it is highly unusual for a flat surface to record the side of the fingerprint, as on a flat surface the central portion of the finger usually presses against the surface. Likewise, it is unusual for the fingerprint to be curved in its entirety as whole prints of fingers are usually straight on a flat surface. A print showing curvature of the finger and the side of it are almost always associated with curved surfaces. I have lifted many hundreds of latent fingerprints from both flat surfaces such as flat window glass and from curved surfaces such as coffee mugs and bottles under controlled circumstances in the preparation of training exercises. The latent print of the index finger on lift 1 is not consistent with a flat surface, but is consistent with having come from a curved surface.

G – Putting lift #1 aside for the moment, all latent prints from all surfaces in the flat were lifted with tape except the water glass on the coffee table. Since a DVD holder is a flat, smooth surface, tape would have been the most economical and efficient means of taking a lift from it. Foliens, because of expense and because of less control and visibility during the lifting process, would be expected to be reserved for use on curved surfaces, convoluted surfaces, or textured surfaces.

38. Factors listed in 36 and 37 above appear to be inconsistent with the lift having come from a DVD case as reported by SAPS.

39. The reports of Daan Bekker and Director RH Botha were studied. Mr. Bekker's analysis is logical and his conclusions are valid. The experiments Mr. Bekker relates and demonstrates with photographs in his report support his conclusions. The report is transparent and well documented with photographs. I repeated Mr. Bekker's experiments and conducted further experiments of my own, which will be discussed in detail later in this report. I concur with Mr. Bekker's conclusions as set forth in his report.

40. Mr. Botha's report seems to ignore facts and reaches unsupportable conclusions as follow:

A – In section 4.1.2. of the Botha report, a claim is made that a new or clean DVD case does not have static electricity that would cause aluminium powder to coat the surface, thus a lift or folien taken from a new or clean DVD case powdered with aluminium would appear clean, as if lifted from glass. I conducted experiments with DVD cases and aluminium powder, using both very clean DVD covers and well handled DVD cases, and using both tape and foliens to make lifts. There was little discernable difference in the background coating of aluminium powder between the lifts from clean DVD cases and well handled DVD cases. My experience with many surfaces over thirty years in the business is that some surfaces, especially certain types of plastic, always have a tendency to hold a thin coat or layer of powder, possibly due to static electricity or possibly due to chemical components of the plastic. The

experiments I conducted with aluminium powder and DVD cases leads me to conclude that the clear plastic cover of DVD cases is a material that will retain such a thin coat of powder as background noise, and such a thin background coat on a lift is a characteristic consistent with a DVD case. A lift or folien without this thin coat as background noise is inconsistent with having come from a DVD case.

B – Sections 4.1.3 through 4.1.9 of the Botha report present a rather convoluted theory of how water condensation from a drinking glass dripped onto a magazine cover and, without soaking into the magazine paper, was transferred to the DVD cover when it was placed onto the magazine. According to this theory of Mr. Botha, there was tight contact between the DVD cover and the magazine, which prevented the water droplets from evaporating. Somehow, although unexplained, is the fact that, if this theory is true, the water droplets did not soak into the paper of the magazine cover, but stayed as wet droplets pressed between the plastic and the magazine. Then when the DVD cover was powdered with aluminium, the water droplets were smeared, resulting in the smears in the lift that are attributed to water. In my experience, this sequence of events is highly unlikely and the explanation for water droplets on the surface from which the prints were lifted is highly improbable.

C – Of additional and related concern is the fact that if Mr. Botha's theory of the wet droplets of water is true, then it would have been unlikely that some of the droplets would have dried while others remained wet. Yet there are dried droplets in lift #1 along with the wet droplets. If Mr. Botha's theory were true, then either all of the droplets should have been wet or they all should have been dry. The presence of both wet and dry droplets argues against his theory.

D – In section 4.2 of the Botha report, it is stated that the width of the lift on the folien, approximately 80 mm, is because there was a first lift from the DVD cover that narrowed the width from which powder could be measured in the second lift. That second lift, according to the Botha report, is lift #1 in this case. If this is so, what happened to the lift taken first, before lift #1? If a lift was, in fact, taken before lift #1, why is there no reference to it in the notes and, more importantly, why was it not saved? Perhaps it had no fingerprints in it, but then why was it lifted? Even if this theoretical lift had no fingerprints of value for comparison in it, other lifts were saved that also lack fingerprints of value for comparison. There is no record of this theoretical first lift, much less the lift itself to show that it ever existed.

E – But there is a fundamental flaw in Mr. Botha's first lift theory. If there had been a first lift and if one edge of the second lift represents the boundary with the first lift, then there would not have been a heavier line of powder deposition along that boundary representing the edge of the first lift. The boundary with the hypothetical first lift would be a simple absence of powder without a heavier line of demarcation. A heavy line at the edge of a lift represents an edge of the surface from which the lift was taken. The heavy lines on both sides of lift #1 are completely inconsistent with one edge of the lift having been a boundary with Mr. Botha's theoretical first lift. In lift #1, there is a heavy line on both sides of the 80 mm strip of the lift, a clear and solid indication that the surface itself was 80 mm across and the two lines represent the two parallel curved edges of the surface that was powdered.

F – Section 4.3 of the Botha report states, in effect, that a lift taken from a flat surface with a straight edge will have a curved edge when the tape or folien is wrapped around the edge. This is preposterous. A straight edge reproduces as a straight edge. Wrapping the folien around the edge or pressing it against the edge in the manner Mr. Botha hypothesizes may yield a thicker edge line in that part of the lift, but it cannot turn a straight edge into a curved edge. The curvature on the two edges of lift #1 is completely inconsistent with wrapping the tape around the edge of a DVD case. These curved edges on both sides of the 80 mm strip of latent print lift are consistent only with the lift having come from a curved surface.

G – In section 4.5 of his report, Mr. Botha states, in effect, that the obvious foreshortening and curvature of the latent print in lift #1 is a result of heavy pressure of the finger on the surface at the time it was deposited. Again, this is preposterous. Pressure such as described by Mr. Botha would result in smudging and smearing of a fingerprint on a flat surface, not in the foreshortening and curving of the print of the finger. Such foreshortening and curvature is the result of the finger being wrapped around a curved surface. The shortness and curvature of the total fingerprint identified as Fred van der Vyver's right index finger is consistent and would be expected from a print lifted from a curved surface. This shortening and curvature is completely inconsistent with a latent print deposited and lifted from a flat surface such as a DVD cover.

41. One of the primary considerations in evaluating a latent print when there are suspicions it may not have come from the surface on which it was purportedly developed is the consideration of "normal handling." In this case, Mr. Botha states section 5.7 of his report that it is the "typical position" to hold one's index finger flat against the side of a DVD case and along the edge while opening it. This, again, is preposterous. "Normal handling" (or, to use Mr. Botha's phrase, "typical position" of the fingers while opening a DVD case) would be to put one's thumbs into the slot on the front edge of the cover and one's other eight fingers along the back spine of the cover with one hand on the front of the DVD case and the other hand on the back. This has the fingers across the back of the DVD case, not on the face of the case parallel with the front edge of the case. With maximum efficiency, one can open the DVD cover in the manner for which it was designed. To open it any other way is unnatural, clumsy, and difficult. Latent fingerprints across the spine of the DVD case would be consistent with normal handling of a DVD case. The latent fingerprints in lift #1 are completely inconsistent with the normal opening or handling of a DVD case.

42. After consideration of the reports of Mr. Bekker and Mr. Botha, a series of experiments was designed to test the hypotheses of both.

43. Four DVD cases were provided for experimentation purposes. These DVD cases were brought from South Africa and were

represented to be similar in materials and manufacture to the DVD case from the scene of the crime. Two of these DVD cases were dusted with aluminum powder and lifts were taken using foliens. The other two DVD cases were dusted with black magnetic powder and lifts were taken with clear frosted tape and placed on normal 8½ X 11 inch white printer paper. Black magnetic powder was used because, of the various powders available for experimentation, it is metallic flake powder most closely resembling aluminum powder in its sensitivity.

44. All four test lifts from DVD cases reproduced straight edges on the sides of the DVD covers. No curvature of the edges could be induced onto the lift through pressure differences in pressing the foliens or the tapes onto the DVD covers.

45. All four lifts from DVD cases showed significant background development in areas between areas of specific development. Mr. Bekker states that such general background development may result from a charge of static electricity on the surface of the plastic DVD cover. Another possibility is that the general background is a result of chemicals in the plastic holding the aluminium powder. Whatever the reason, it is a fact that on a plastic surface such as a DVD case, there is a thin general background coating of aluminium powder. This background noise is a characteristic of a lift from a DVD case. The absence of this background is inconsistent with a lift from a DVD case.

46. All four lifts from DVD cases showed numerous latent fingerprints apparently resulting from repetitive handling by different people without cleaning between times. Most latent fingerprints represented straight touches in the center of the pattern areas of the fingers rather than the sides of the fingers.

47. The parallel curved lines on the substrate in lift #1 are most closely associated with a curved surface. Such edge lines occur on lifts from items in the shape of a truncated cone. The substrate would not have been a straight cylinder, as the lines on the top and bottom would have been straight and parallel, not curved. The substrate would not have been spheroidal, as such a shape also produces curved creases in the lift, which were completely absent in #1. A common item possessing a conical shape that would produce a substrate image such as that in #1 is a drinking glass with straight sides, slightly tapered from top to bottom.

48. Ten assorted drinking glasses were procured with heights (measurement along the exterior side of the glass from top to bottom) on the order of 80 mm. The ten drinking glasses had varying degrees of conical aspect, ranging from a straight cylindrical glass to a very sharply cone shaped glass. The ten glasses had a variety of top and bottom diameters. This assortment of glasses was chosen for the purpose of experimenting with foliens and lifts to give a range of dimensions and edge curvature in the resulting lifts. The objective of such experimentation was to approximate the dimensions and curvature of the edges of the substrate as demonstrated in #1. The ten drinking glasses in order of assigned numbers are shown herewith:



49. The approximate dimensions in millimeters (± 2 mm) of the ten glasses are as follows:

	Height	Top Diameter	Bottom Diameter
Glass #1	82	74	67
Glass #2	82	79	64
Glass #3	82	77	59
Glass #4	90	92	53
Glass #5	81	50	35
Glass #6	80	75	69

Glass #7	90	75	64
Glass #8	80	71	45
Glass #9	85	52	40
Glass #10	71	70	36

50. A series of initial experiments were done on the ten glasses. It was noted that in the normal method of picking a drinking glass up with the left hand, the left index finger is placed a short distance below the top rim of the glass. It is normally curved and rolled slightly to the outside.

51. An experiment was conducted to demonstrate the position of the left index finger holding a glass of water with the left hand. Drinking glass #6 was filled with water. The glass was grasped with the left hand and the index finger was observed and photographed through the water. It was noted that the finger is slightly curved, the distal phalange (pattern area or finger tip) contacts the glass on the outer side of the finger, and a compressed region of the finger tip runs diagonally across the pattern and through the delta. (NOTE: Photographs reproduced in this report are presented for context only and may lack fine details. For examination of the finer details in these photographs, the original photographs should be consulted.)



Note: Finger is curved and there is compression of ridges along line running diagonally through delta (line added).

52. In lift #1, a slight smudge line is noted running diagonally through the delta and across the latent print identified as the left index finger of Fred van der Vyver. In the photographs taken of a left index finger holding a glass of water, taken by focusing on the finger through the water, it is interesting to observe that a slight line of distortion that might result in smudging of the latent print is observed in the friction ridge skin itself. If lift #1 were taken from a drinking glass, this line of distortion in the skin is consistent with the actual smudge noted in lift #1.

53. While the presence of both wet water drops and dry drops on a DVD case under the theory presented by Mr. Botha is highly unlikely, the presence of both wet and dry droplets of water on a drinking glass is common. The appearance of both droplets on lift #1 is inconsistent with having come from a DVD case but is consistent with having come from a drinking glass.

54. In a series of experiments with the drinking glass, it was confirmed that the elliptical shape referred to in paragraph 36.E. above was consistent with a lip print on the glass. More experiments were conducted by drinking from glasses, then lifting the lip prints. Test lip prints deposited in the manner of normal drinking, then powdered and lifted, showed consistency with the elliptical shape on #1.

55. A series of experiments were done in which each of the glasses were held with the left hand while water was poured into the glass from a pitcher held in the right hand. In each experiment, the glass and the water pitcher were then put down. The glass was then picked up with the right hand and the water was drunk from the glass. The glass was once again put down.

56. Each glass was then processed with aluminum powder. In each case, a lift was then taken with clear tape and placed on a black

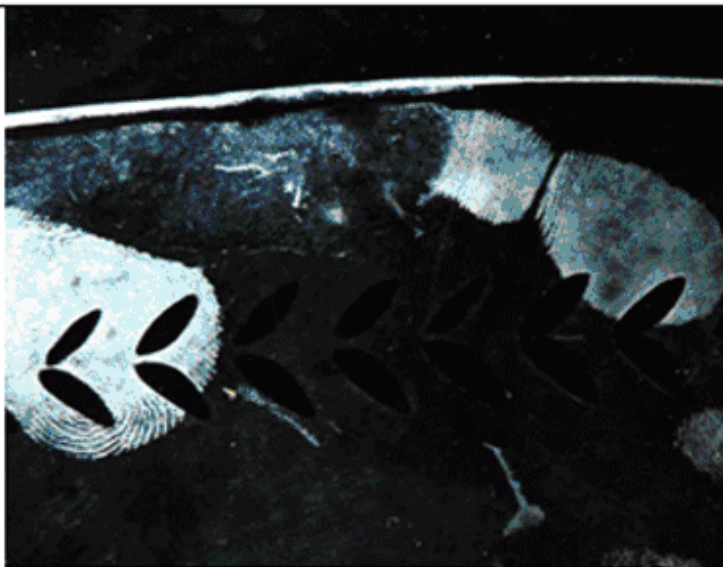
lift card.

57. The lifts taken from the ten glasses after handling in the manner described in paragraph 55 above were compared with folien #1. All ten experimental lifts showed the same relative position of the left index finger print, the right thumb print, and the lip print. The curvature and separation of the edge lines in folien #1 most closely matched the curvature and separation of the edge lines in the lift from glass #2.

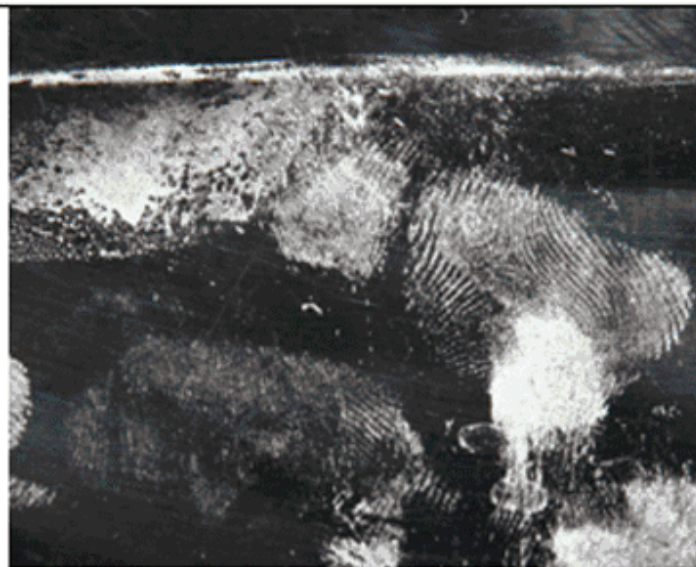
58. More experiments were conducted with glass #2. It should be noted that glass #2 has an etched leaf or flower petal design around the circumference of the glass approximately 21 mm to 35 mm from the top lip of the glass. This design can be seen on glass #2 in the photograph of the ten glasses in paragraph 48 above. This etched design is clearly visible as background noise in all lifts taken from glass #2 but does not materially affect the relative positions of the fingerprints or the lip prints, either on the glass itself or in the lifts taken from the glass. The etched design merely adds background noise that differentiates lifts from this glass with lifts from other glasses.

59. In the additional experiments on glass #2, handling and drinking was done in the manner described in paragraph 55. The glass was powdered with aluminum powder and lifts were made with foliens. An uninterrupted video clip was made of one performance of this experiment and is available for review.

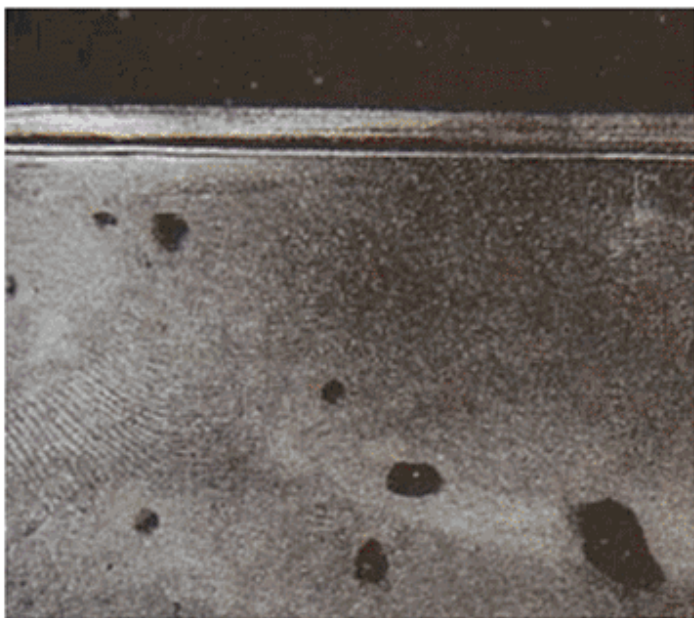
60. A close inspection of the edges of test lifts from DVD holders shows a black line near the edge of the surface. This black line was produced by a groove along the edge of the DVD holder. These lines are present in test lifts taken from DVD holders with both tape and with foliens. These lines are missing from both lift #1 test lifts on a drinking glass.



Test lift from glass – note absence of black line in edge of lift and curvature to the edge.



Lift #1 – note absence of black line in edge of lift and curvature to the edge.



Test lift from side of DVD holder – note black line in edge and straightness of edge.



Test lift from top of DVD holder – note black line in edge and straightness of edge.

LIFT COMPARISONS

.2 MB [LiftFromGlass-Original.jpg](#)

.5 MB [LiftFromDVDcover-Original.jpg](#)

61. These test foliens from glass #2 were compared to folien #1. The relative positions of the left index finger, the right thumb, and the lip print with respect to each other and with respect to the top and bottom edges of the glass are completely consistent between the test lifts from glass #2 and the actual lift in folien #1.

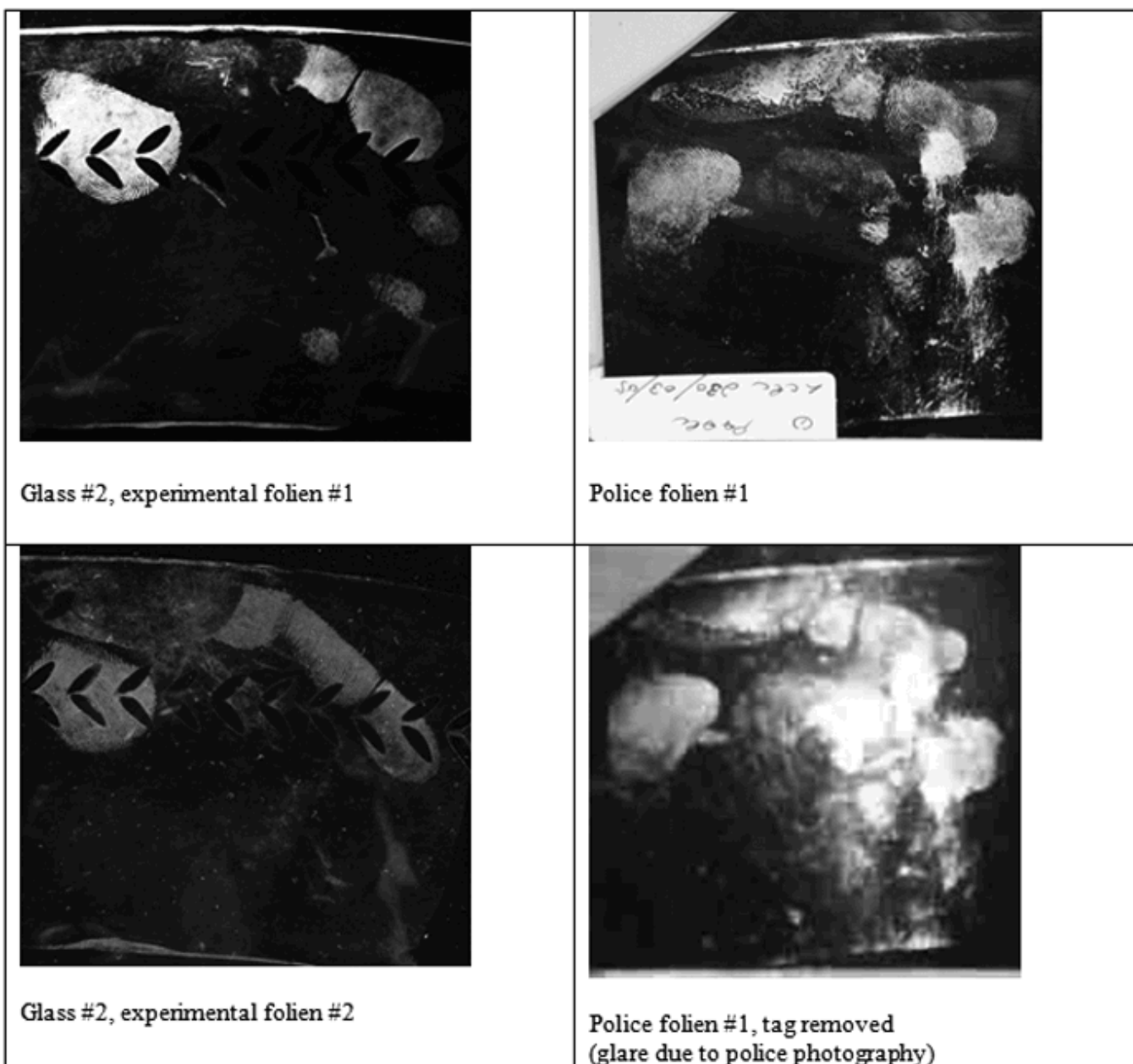
62. The relative locations of the critical elements of lift #1 and an experimental lift from glass #2 are shown in the two photographs below. The curved upper and lower edges are not marked in the photographs but are clearly visible. The left index fingerprint in each

lift is marked in green, the right thumb print is marked in red, the lip print is marked in blue, and the presumed left middle, ring, and little fingers are marked in yellow. (NOTE: Photographs reproduced in this report are presented for context only and may lack fine details. For examination of the finer details in these photographs, the original photographs should be consulted.)

.3MB [LiftShapeCompare.jpg](#)

63. This sequence of the latent print components in lift #1, matching the exact sequence of similar components in the test folien on glass #2, combined with the curved edges of the top and bottom of the glass, is the strongest of proof that police folien #1 (lift #1) came from a drinking glass and NOT from a DVD case. The series of actions leading to the deposition of the right thumb print, the left index fingerprint, the lip print, and the simultaneously deposited traces of the left middle, ring, and little finger prints is a completely natural and very common series of actions. Any series of actions leading to a similar series of latent print components on a DVD case is definitely NOT normal handling.

64. Note relative positions of left index finger print, right thumb print, lip print, curved top edge of glass, curved bottom edge of glass, and even left middle, ring, and little fingerprints when present, in photographs below representing two repeats of the experiment of pouring liquid into a glass, then drinking from the glass. (NOTE: Photographs reproduced in this report are presented for context only and may lack fine details. For examination of the finer details in these photographs, the original photographs should be consulted.)



65. As discovered by research I have conducted and reported in articles I have written, there are a number of common characteristics

of fabricated fingerprint evidence. As related to mislabeled latent print lifts, these common characteristics include background noise inconsistent with the surface from which the latent print is reported to have been lifted, latent fingerprints deposited in a manner inconsistent with normal handling, and the absence of supporting documentation to corroborate the evidence.

66. Supporting documentation corroborating the source of the lift might include some of the following:

A – Photographs of the latent print in situ prior to lifting.

B – Thorough, complete crime scene notes taken contemporaneously with the lifts from a crime scene that include every surface examined, all of the methods of development used on each surface, and the results of the examination for each surface.

C – Witnesses to each lift, whose signature or initials appear on each lift they observed being developed and lifted.

D – Artificial background noise, such as the fingerprint officer's initials, date, and lift number placed on the surface prior to lifting so that the writing is visible in the lift and remains on the surface as well.

E – Prenumbered lift cards or foliens with unique serial numbers, used in order and recorded in the crime scene notes, which prevents substitution of different lifts at a later date.

F – Preservation of the latent print on the surface, normally accomplished by fuming with cyanoacrylate (Super Glue) prior to dusting and lifting.

G – Review, either technical or administrative, by a supervisor soon after completion of the scene processing.

67. In this case, every characteristic of a mislabeled lift is present in lift #1 on the folien reportedly taken from a DVD case. Every observable fact related to the lift is inconsistent with a latent print from a DVD case. Every observable fact in lift #1 is completely consistent with the lift having been taken from a drinking glass approximately 80 mm in height and slightly wider at the top than at the bottom.

A – The background noise (curved edges of the lift, 80 mm width of the lift) is inconsistent with a lift from a DVD case, but is completely consistent with a lift from a drinking glass with dimensions described above.

B – The distinctive black line along the edge of the surface of a DVD case, which was present in all lifts taken from DVD cases, is missing in lift #1. Such a black line never appeared in test lifts from glasses. The absence of that line in lift #1 is inconsistent with a lift from a DVD case, but is consistent with a lift from a drinking glass.

C – Shape of the latent (curved, on its side, and foreshortened) is inconsistent with a lift from a DVD case, but is completely consistent with a lift from a drinking glass with dimensions described above.

D – The blotch overlapping the latent print of Fred van der Vyver's left index finger is inconsistent with a simple damp spot on a DVD case, but is completely consistent with a damp lip print on the edge of a glass.

E – While there have been reported cases of lip print identifications based on the fine skin wrinkles in the lip, such latent lip prints require a moist but not wet lip print that reproduces those fine wrinkles in the latent lip print. The blotch in lift #1 is consistent with a lip print but because of excessive moisture on the lip at the time of deposition that prevented the latent lip print from reproducing the fine wrinkle marks, it cannot be positively identified as the lip print of Fred van der Vyver.

F – The location of the latent left index fingerprint, the location of the latent right thumb print, and the blotched area recognized in all probability as a lip print, all three fall into virtually the exact positions of the left index finger, right thumb print, and lip print on the test glasses used in the experiments conducted. The relative positions of several additional latent prints lacking sufficient detail for positive identification are also consistent and in agreement for the left middle, ring, and little fingers.

G – The experiments conducted by picking up drinking glass #2 with the left hand and pouring liquid into the glass with the right hand, then drinking from the glass, all resulted in consistent position of the lip print in relation to the left index finger. When the glass was put down and released from the left hand, then picked up with the right hand to drink, the lip print overlapped the latent print from the left index finger. The position of the wet smudge in lift #1 also overlaps the latent left index fingerprint. This overlap is consistent with a lift from a drinking glass, but has no equivalent in normal handling of a DVD case and is inconsistent with a lift from a DVD case.

68. A summary of the observed characteristics of lift #1 and a comparison of the consistency with either a DVD case or a drinking glass is presented in the table below:

Observed characteristics in Lift #1 (Folien #1)

	Observed characteristics in Lift #1 (Folien #1)	CONSISTENT	
		with DVD?	with Glass?
1.	Two parallel lines 80 mm apart representing edges of surface	NO	YES
2.	Curvature to the lines that represent the edges of the surface	NO	YES
3.	Absence of thin black lines just inside the edges of the surface	NO	YES
4.	Clean areas absent presence of powder between elements of lift	NO	YES

5.	Presence of both wet and dry droplets of liquid	NO	YES
6.	Angle of finger (rolled onto its side)	NO	YES
7.	Curvature of finger from joint to joint	NO	YES
8.	Position of finger relative to edge of object	NO	YES
9.	Line of slippage in fingerprint	NO	YES
10.	Possible lip print over left index fingerprint	NO	YES
11.	Relative positions of all fingers to each other and to lip print	NO	YES

69. After a thorough examination of the photographs of the folien, lift #1, after reading and evaluating the reports of Mr. Daan Bekker and Mr. Botha, and after numerous experiments with DVD cases and drinking glasses, it is my firm scientific conclusion that lift #1 did not come from a DVD case, but could only have come from a drinking glass. Every characteristic examined is utterly inconsistent with a lift from a DVD case but every one of these characteristics is absolutely consistent with a lift taken from a drinking glass 80 mm high and slightly wider at the top than at the bottom.

70. If there were a latent print lift in this case that was consistent with having come from a DVD case but mislabeled as having come from a drinking glass, we might accept that the two lifts were simply mixed up and cross labeled. But in the absence of any such lift that may have in reality come from a DVD case, we can only conclude that the presentation of lift #1 as having come from a DVD case is an intentional fabrication of evidence.

71. In summary, after a thorough analysis of lift #1, the folien represented as having been lifted from a DVD case, after evaluating lift #1 in light of the reports of Mr. Bekker and Mr. Botha, and after numerous experiments on a variety of drinking glasses, it is my conclusion that lift #1 was taken from a drinking glass and was intentionally mislabeled as having come from a DVD case. Lift #1 has all of the characteristics of fabricated fingerprint evidence and, in my opinion, is intentionally fabricated fingerprint evidence.

Respectfully submitted,

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