

## Cold case investigations

LGC offers a complete case review service to support all stages of an investigation and in particular, specialises in unsolved homicide cases, missing person cases and sexual offences. We have a dedicated cold case team consisting of scientists with a range of expertise and a combined experience of over 150 years in forensic science. Scientists work closely with the investigating team to review work previously undertaken, exploiting new technologies and

alternative approaches to unlock that crucial piece of evidence.

### Flexible approach

LGC offers a flexible approach to assist police review teams in all types of enquiries - ranging from facilitating the retrieval of retained materials from the forensic archive, through to detailed and thorough staged forensic reviews. A case review specialist adviser is assigned to each case and, depending on requirements, will devise and agree a strategy to be executed by LGC's select team of case review practitioners in conjunction with the investigative team.





## Specialist knowledge

LGC has invested significant resources in research and development to determine the best way to deal with archived material. We have developed specific protocols regarding the optimum methodologies for the examination of slides and tapings; especially in relation to DNA, but also taking into consideration the many other valuable evidence types that can be present within such materials.

In addition to advanced technical capabilities, LGC's strengths lie in the expertise and knowledge of their case review specialists. These individuals:

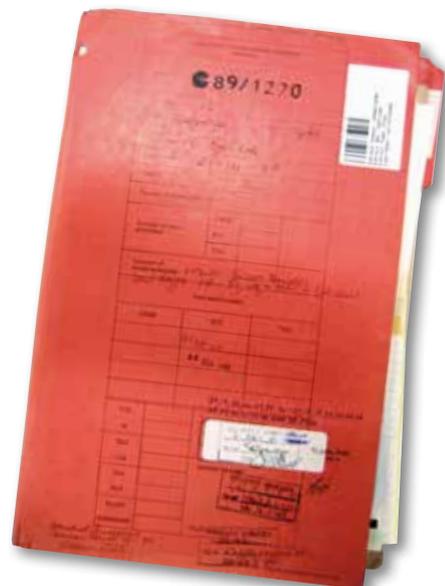
- Have extensive in-depth knowledge of historic examination methods; this can be absolutely crucial when setting forensic strategies and interpreting new findings.
- Employ a range of techniques not commonly required in live casework, including the use of microscopy as a search tool and a wide range of presumptive testing capabilities.
- Consider a wide range of evidential materials; from fibres and other traces through to the latest DNA advances.
- Work on the basis that there is always the chance of finding vital evidence no matter how often the item has been examined before.

The strategy is tailored to the needs of the investigation throughout, and any results obtained will be interpreted and re-assessed accordingly.

Acting as a single point of contact, the specialist advisor provides regular updates and continued advice, and is ideally placed to identify new opportunities as they become apparent, or indeed to stop a particular line of enquiry if it is deemed no longer beneficial to the case.

As well as undertaking individual reviews, LGC has developed a service specifically to assist forces in the management and delivery of large-scale historic sex offence projects. This service includes the collation of all relevant case information, including the review, case progress and results into a customised case review database which can produce tailor-made reports.

Authoritative advice is offered relating to historic case reviews, such as continuity, integrity of materials, contamination, the findings of original scientists, assisting with interview strategies for victims and suspects and the presentation of cases to court. Forensic awareness and training can be included and is often vital in helping the police team and the CPS tackle key issues regarding the review of historic offences.





- Challenge and re-interpret original findings in the light of research and new information.
- Understand the workings of the forensic archive and how retained materials for various cases came into being.



- Understand original DNA processes, and particularly the labelling of extracts.
- Are fully aware of continuity, packaging and integrity issues regarding historic materials and exhibits; including the impact of storage on evidential items in the intervening time.
- Are patient, meticulous and thorough lateral thinkers, and creative problem-solvers.
- Have received awards and commendations from the criminal justice system and the monarchy in recognition of their contribution to forensic case reviews.

With such a wide range of examination types available in-house, we are able to combine different aspects of our expertise in imaginative

ways; being part of a larger scientific organisation with an emphasis on innovation, quality and customer service puts us at the forefront of scientific delivery in forensics.

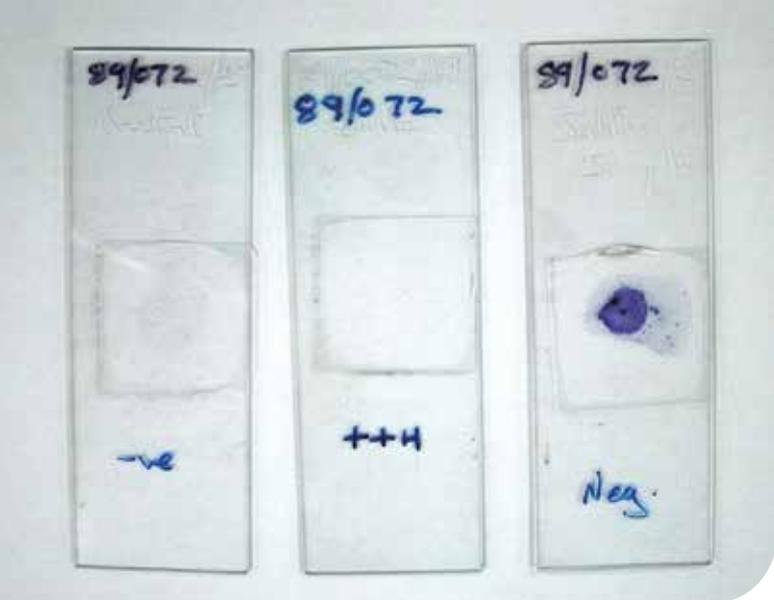
### Case examples

#### Lateral thinking

A complex four year investigation involving four murders and a number of sexual assaults resulted in the re-examination of hundreds of pieces of evidence; for example:



- A shotgun linked to the suspect and painstakingly re-examined was found to bear blood beneath a recently painted surface; this blood matched one of the victims.
- A minute blood stain was found near to a hand-stitched hem of a pair of shorts. This was unpicked revealing further blood which matched the daughter of one of the victims.
- An extensive network of fibre links was established between the suspect and the victims and various scenes.



## Microscopic re-examination

LGC has been involved in several cases where a different approach to re-examining items has resulted in the finding of blood. For example, four new microscopic bloodstains were found in the re-examination of items from a murder in 1995. Two of these stains have been tested using DNA17 and have given useable profiles.



## Connecting crimes

Microscope slides bearing semen in two separate, but similar, rapes of a 14 year old and a 15 year old in 1979 were DNA tested and the resultant profiles found to match each other, and matched an individual on the National DNA Database. This individual was a suspect at the time, however there was insufficient evidence in 1979 to proceed with a prosecution.

In a further example, a DNA profile was obtained from semen on a microscope slide in a case involving the rape of a nurse following a break-in at a nurses' home in 1979. This profile also matched semen on tapings in a case from 1981 with a completely different MO - involving the abduction and rape of an 11 year old girl who was waiting for a bus mid-afternoon. The profiles matched an individual on the National DNA Database who was subsequently convicted.

For further information on how LGC can assist with cold case investigations, please call: +44 (0)844 2641 999, or visit: [www.lgcgroup.com/forensics](http://www.lgcgroup.com/forensics) [www.lgcgroup.com/enquiries](http://www.lgcgroup.com/enquiries)

