Forensic Science Regulator

Overseeing Quality

QUALITY MANAGERS CONFERENCE

4th February 2014

Birmingham

https://www.gov.uk/government/organisations/forensic-science-regulator

Forensic Science Regulator

Overseeing Quality

Quality Mangers Conference Breakout Session 2

Unexpected item in the reporting area		Chair: Dr. Roger King
13:10	Review of quality failures	Simon Iveson
13:40	Can a wrong be made right?	Martin Hanly
14:10	Data Integrity for the National DNA Database with DNA-17	Adam Shariff
14:25	Managing quality failings and moving to a mature quality model, aka Solutions	Andrew Rennison
14:40	Discussion	
14:50	Route to Innovation: Awareness, Communication, Partnership	Ali Anjomshaa
15:05	Archaeology Standard	Robert Janaway

Home Office

Forensic Science Regulator
Overseeing Quality

Review of quality failures

Simon Iveson

February 4th 2014

13:10 - 13:40

Definitions of quality

Three definitions:

1. The totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs
2. The quality of a product (article or service) is its ability to satisfy the needs and expectations of the customers[1]
3. Fit-for-purpose

[1] Bergman and Klefsjö (1994) Quality: from customer needs to customer satisfaction, McGraw-Hill.

Quality failures

- Shigeo Shingo

  Was a Japanese industrial engineer strongly associated with Just-in-Time manufacturing, and was the inventor of Poka-Yoke (mistake proofing) system.

- Relevant to this talk?
  - He distinguished between “errors”, which (although can be reduced) are inevitable, and “defects”,
  - when an error reaches a customer, it is a “defect”

Role of the Regulator in investigating quality failures

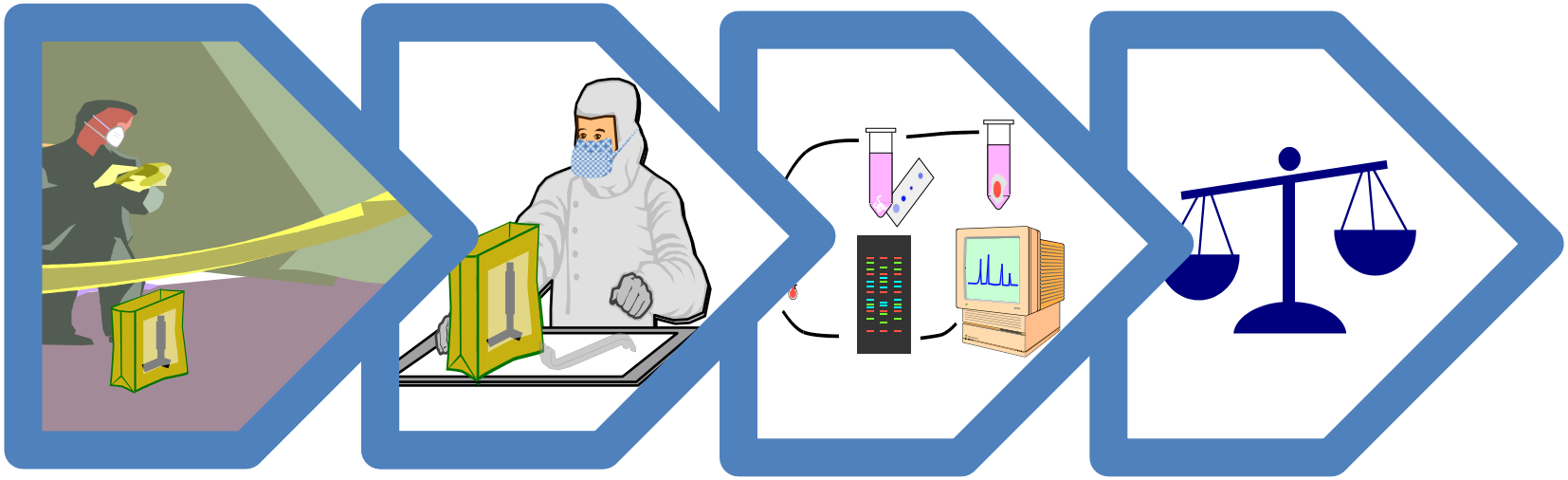
- The Forensic Science Regulator has many roles, but one is of course to:
  - Deal with complaints from stakeholders and members of the public in relation to quality standards in the provision of forensic science services.
  - A complaint could be about a problem in quality standards delivered by a provider or practitioner; in the use of a method; or a process that is part of the delivery of forensic science services.

Role of the Regulator in investigating quality failures

- A complaint to the Regulator cannot:
  - amount to an allegation of the commission of a criminal offence within the UK,
  - fall within the jurisdiction of the IPCC,
  - refer to an investigation/prosecution which is still active,
  - amount to a collateral challenge to the judgment of a court, or
  - amount to an appeal against the judgment of any other person or body

Case Flow

Preparation → Scene → Selection → Lab → Case Prep. → Trial

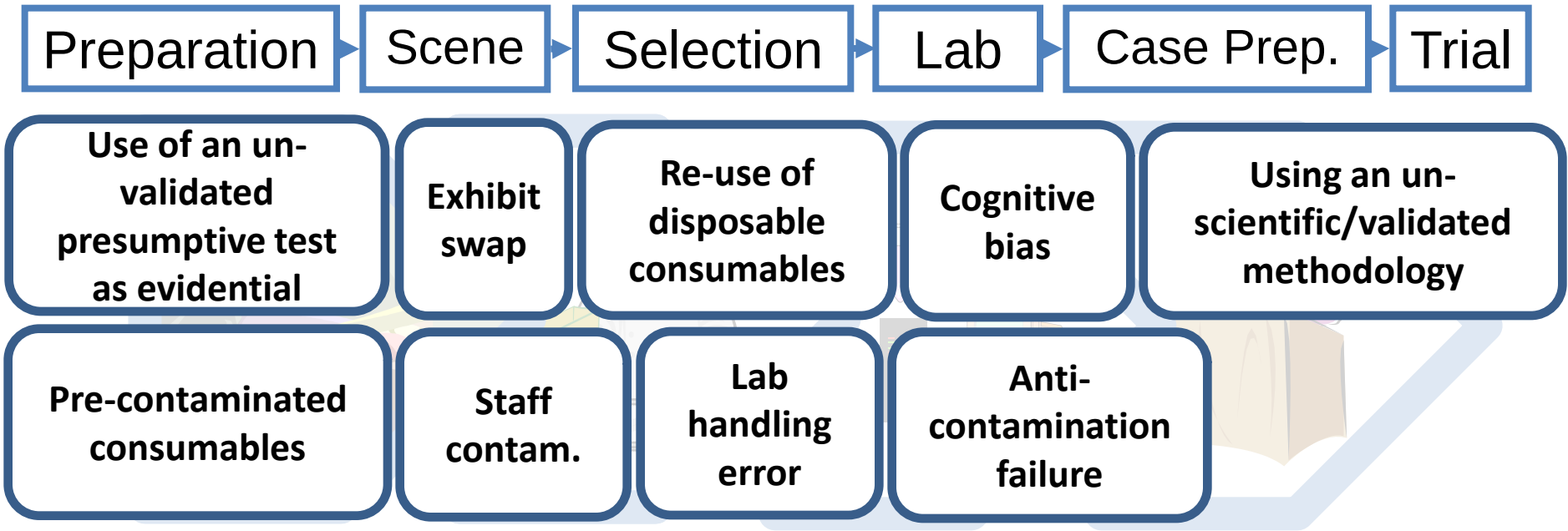


Potential for Contamination

Continuity & Security

Competence

Case Flow



Potential for Contamination

Continuity & Security

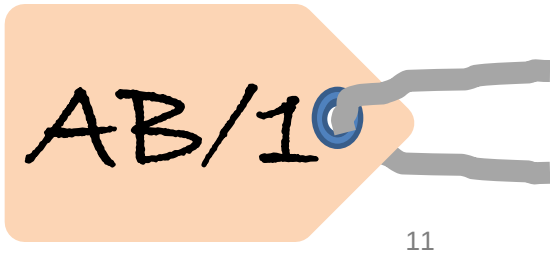
Competence

Exhibit swap

- A forensic science provider contacted a force to note discrepancies in a submission about:
  a. The nature of the sample provided; and/or
  b. The information on the exhibit packaging.
- The provider was instructed to continue, a profile was obtained, loaded and matched to an individual who was subsequently arrested.
  – The officers were concerned, and the individual was released without charge.

Exhibit swap

- The root cause of this error:
  - an incorrect exhibit was bagged with the paperwork by the force and whilst a mistake was picked up by the examiner at the lab, neither the examiner nor the force realised the full implication of that error.
- The error was facilitated by the use of an exhibit identifier which was not unique.



What do the Codes say…

Providers should have acceptance procedure for the handling of recoverable irregularities or rejection of an exhibit for examination arising from, but not limited to:

- a missing exhibit label
- inconsistency between the details on an exhibit label and what the exhibit actually is
- illegibility in the identification information on an exhibit label
- there being more than one label on an exhibit
- appropriate control samples not submitted
- duplicate exhibit labels
- inadequate, untimely packaging or sealing
- previous handling, storage or evidence of tampering
- insufficient material for meaningful analysis

Lab handling error

- Scene 1
  - Over the weekend of 17-18 March 2012 a solicitors premises suffered damage to a window.
  - On 19 March a scene of crime officer attended the premises and two swabs were taken.
- Scene 2
  - Over the same weekend a wholesaler's premises a sliding door was damaged
  - On 19 March a different scene of crime officer attended the premises and two swabs were taken.

Lab handling error

- Both cases were submitted to the same provider, DNA profiles were obtained from one sample in each case and loaded to the National DNA Database®
- On 24 April a man was arrested and charged in relation to both incidents.
  - He conceded that he was present at scene 1, had caused the damage as result of an accident resulting from inebriation
  - …but denied being present at the other scene

Lab handling error

- Following a defence examination, concerns were raised that results obtained could be the consequence of contamination
- As a result of escalating the concern the second sample in the disputed case was processed and subsequently matched another individual

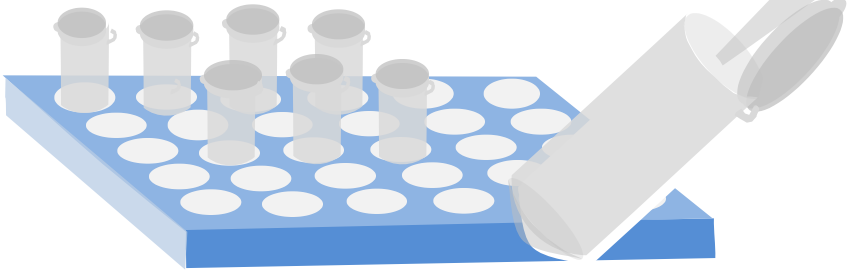
A sampling handling error had occurred, but where?

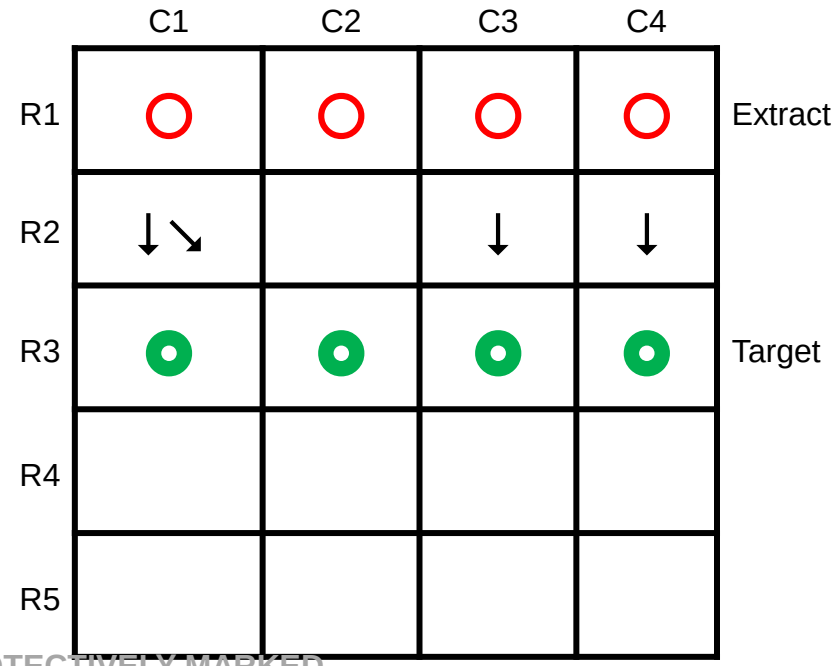
Lab handling error

- Re-profiling showed that the extract tubes related to the cases contained the correct extracts, so:
  - The problem could not have occurred before the amplification stage (i.e. polymerase chain reaction or PCR)
  - The sample required the dilution at amplification stage, it is concluded that this is probably where the problem occurred

Lab handling error

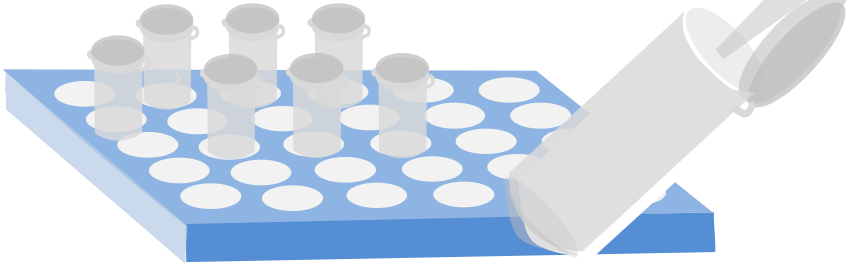
- Believed fluid movement during PCR and/or dilution

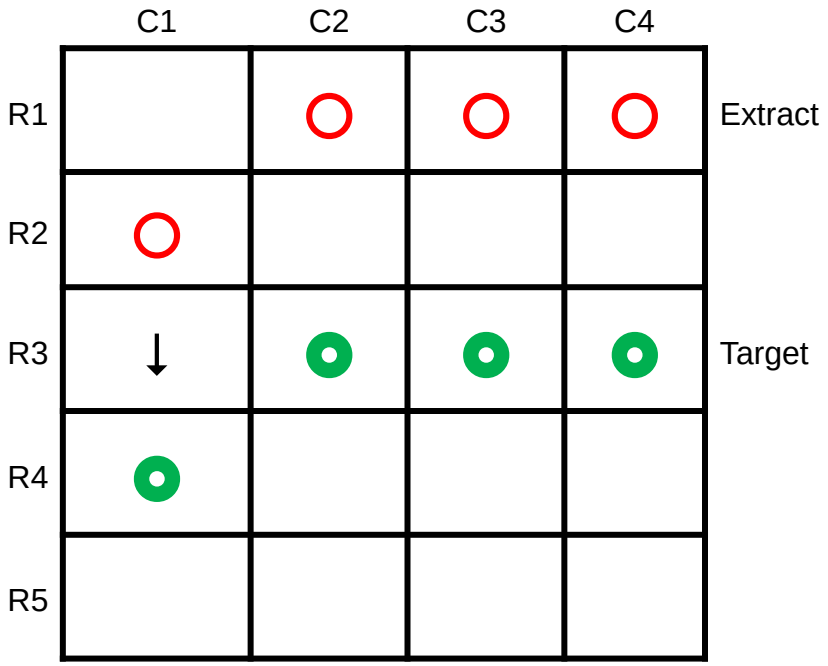




Lab handling error

- Change to fluid/tube movement during PCR and/or dilution following review





Lab handling error

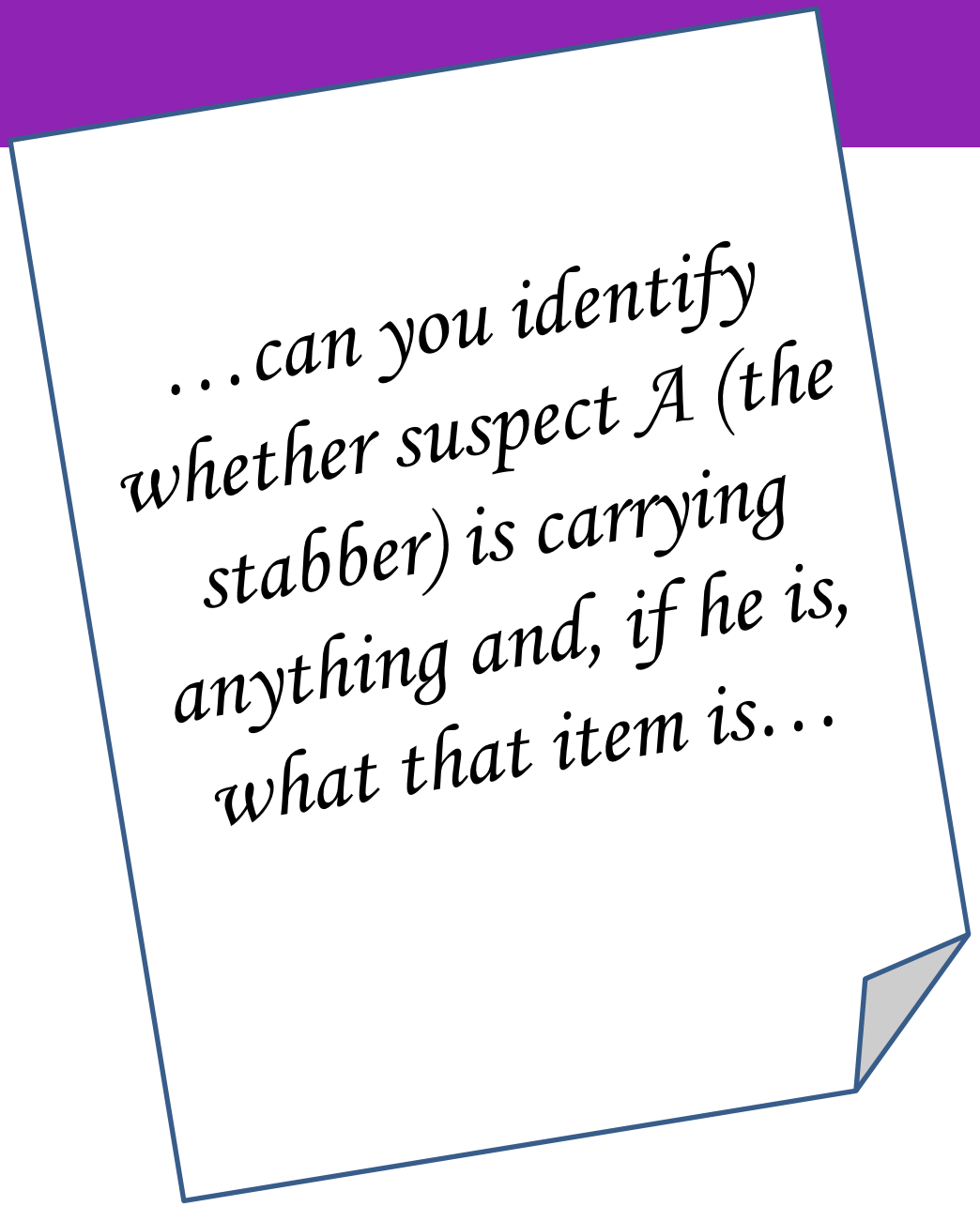
- Since the error:
  - The dilution process has been modified.
    - The target tubes are now being labelled with printed labels to avoid the risk of transcription errors – even though this was not thought to be an issue in this case.
    - The use of sequential dilution has been abandoned.
    - The extraction and target tubes will be moved.
    - The dilution process will be witnessed.

Cognitive bias

"many observer effects in the human mind, some of which can lead to perceptual distortion, inaccurate judgment, or illogical interpretation."

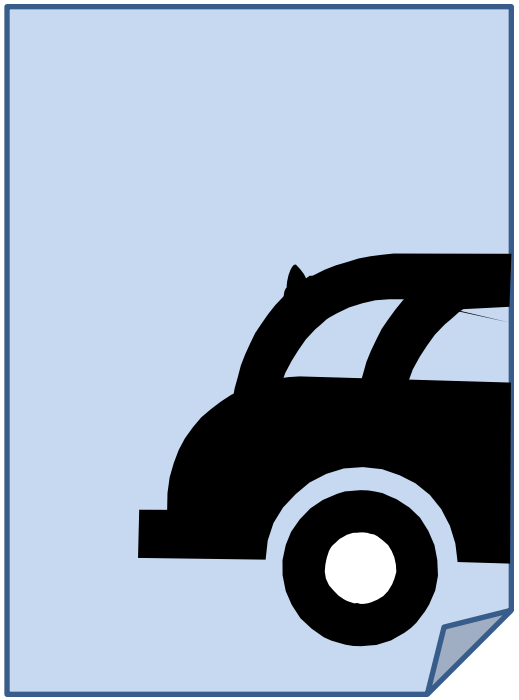
Kahneman, D. and Tversky, A. (1972): Subjective Probability: A Judgment of Representativeness. *Cognitive Psychology, 3:430.*

Cognitive bias



Cognitive bias

- An expert was asked to compare images from various CCTV camera with images of a seized car registration number [redacted]

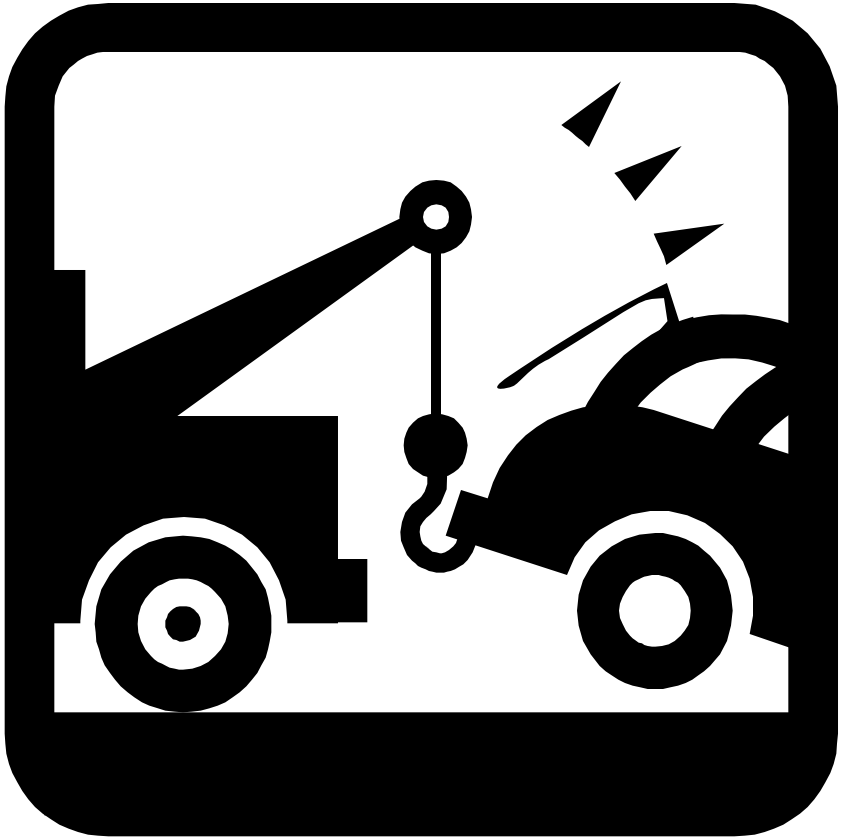


Cognitive bias

- Identification was on many partial features, estimation of the partial number plate, trim etc.
- But
  - …statement said it was unlikely the aerial was present

Cognitive bias

- Identification was on many partial features, estimation of the partial number plate, trim etc.
- But
  - …statement said it was unlikely the aerial was present..[in the footage]
- Yet the aerial had been broken during recovery
  - Still being investigated…



Using an un-scientific/un-validated methodology

- CCTV Height estimation
  - The science behind photogrammetric techniques is well understood
  - All measurements have a level of uncertainty or inaccuracy
  - Reports which omit them or fail to acknowledge them are, in my opinion, un-scientific – but they look comprehensive and precise…precision implying accuracy

Using an un-scientific/un-validated methodology

- Questions are being currently being raised about:
  - Estimation of height of suspects/perpetrators;
  - The determination of vehicle registration numbers;
  - The determination of vehicle make/model;
  - Identification of features on vehicles;
  - Facial comparison;
  - Determination of colour; and
  - Comparisons of other similarities between images.
- The Regulator is particularly interested in knowing how valid these methods really are

Summary

- Quality failures are often where errors are not caught or dealt with correctly
- In cases that went wrong, the quality control stages were often in place - but failed
- A mature quality environment does not hide or patch errors, it deals with the root cause and feeds back into the method i.e. continuous improvement
- The majority of cases in the CJS are error free, quality failures are rare, but when they occur, can and do have a serious impact

Can a wrong be made right?

Martin Hanly

4 February 2014

Science
for a safer world

Position statement

The customer doesn't expect everything will go right all the time; the big test is what you do when things go wrong.

Sir Colin Marshall (ex CEO and Chairman of British Airways)

The brief

Speak for up to 25 minutes on how accredited organisations respond to quality issues – focussing very much on correction and constant improvement.

The ethos

"I've failed over and over and over again in my life. And that is why I succeed"

Michael Johnson

The ethos

"I've failed over and over and over again in my life. And that is why I succeed"

Michael Johnson

My ethos

Its not necessarily the failure that counts – its the action and learning you take to resolve and prevent it for the future.

Governance and reason

Not only is responding to Quality issues vital to good business practice it is vital to Accreditation which drives improvement and good practice:

ISO/IEC 17025:2005

- **4.8 Complaints**

  The laboratory shall have a policy and procedure for the resolution of complaints received from customers or other parties. Records shall be maintained of all complaints and of the investigations and corrective actions taken by the laboratory (see also 4.11).

- **4.9 Control of nonconforming testing and/or calibration work**

  4.9.1 The laboratory shall have a policy and procedures that shall be implemented when any aspect of its testing and/or calibration work, or the results of this work, do not conform to its own procedures or the agreed requirements of the customer. The policy and procedures shall ensure that……

- **4.10 Improvement**

  The laboratory shall continually improve the effectiveness of its management system through the use of the quality policy, quality objectives, audit results, analysis of data, corrective and preventive actions and management review.

Governance and reason – Codes of Practice

- **13. Complaints (ISO 17025:2005 ref. 4.8)**
- 13.1. The provider shall have policies and procedures for dealing with complaints. These procedures shall define what constitutes a complaint in relation to the work undertaken by the provider, and shall ensure that appropriately thorough investigations are instigated on receipt of any complaints.
- 13.2. The Forensic Science Regulator shall be informed at the earliest opportunity about any complaint if it has significantly disaffected the customer such that it could attract adverse public interest or lead to a miscarriage of justice. The policies and procedures relating to complaints shall also indicate the escalation criteria and the individual responsible for notifying the Regulator.
- 13.3. Complaint investigations shall include examination of the potential impact on any work that has already been undertaken by the provider. In the event that it is shown that there could have been an impact on any work this should be dealt with through the non-conforming work process (see **14. Control of non-conforming testing).**
- 13.4. Records shall be retained of all complaints and of the subsequent investigations and outcomes.
- 13.5. Complaints may be received from many sources including customers, victims of crime, police forces, and other departments within the same provider (e.g. laboratory, scene of crime unit, investigation unit) and the judicial system (including adverse court decisions pertinent to the work).

Quality failure happens in Forensics.....

LGC Forensics has Quality failures – we have had to develop, grow, learn and improve how we respond and we are still learning.

1. Incident logged and communicated to all parties.
2. Containment actions undertaken.
3. Quality Team decide if the incident meets the criteria of an 8D (i.e. customer complaint/high level).
4. 8D template forwarded to the Quality Investigator by the Quality Team.
5. The Quality Investigator has 4 weeks to investigate and identify the root cause**s**.
6. Account managers are the Voice of the Customer – they MUST be present!
7. The completed 8D will be provided to the Quality Team for review.
8. The Quality Investigator, along with the Sponsor, must implement and communicate all corrective actions.
9. Evidence must be supplied to the Quality Team along with the completed 8D before the actions can be closed.
10. In the case of customer complaints, the Account Manager/Quality team will close the incident out with the customer.
11. Verification of actions will take place by the Quality Team.

Critical communication

- Communication is critical throughout the investigation.
- Is escalation needed to UKAS and/or the Forensic Regulator?
- The Account Manager is the customer contact and advocate within LGC.
- Communication of the timeframe for investigation (LGC has an Internal standard) should be communicated.
- LGC aims to complete investigations into complaints and high level Incidents within one month.

The Investigation

LGC Forensics follows 8D Problem Solving which is a quality management tool and is a vehicle for cross-functional teams to articulate thoughts and provides scientific determination to details of problems and provides solutions. The 8D provides excellent guidelines allowing us to get to the root of a problem and ways to check that the solution actually works. Rather than healing the symptom, the illness is cured, therefore, the same problem is unlikely to recur.

- It is termed the 8D process because there are 8 disciplines:
- D0 - The planning stage
- D1 - Establishing the Team
- D2 - Problem definition/statement & description
- D3 - Developing interim containment actions
- D4 - Identifying & verifying root causes
- D5 - Identify permanent corrective actions (PCA)
- D6 - Implementing & validating permanent corrective actions (PCA)
- D7 - Preventing recurrence
- D8 - Congratulate your team

Root Cause

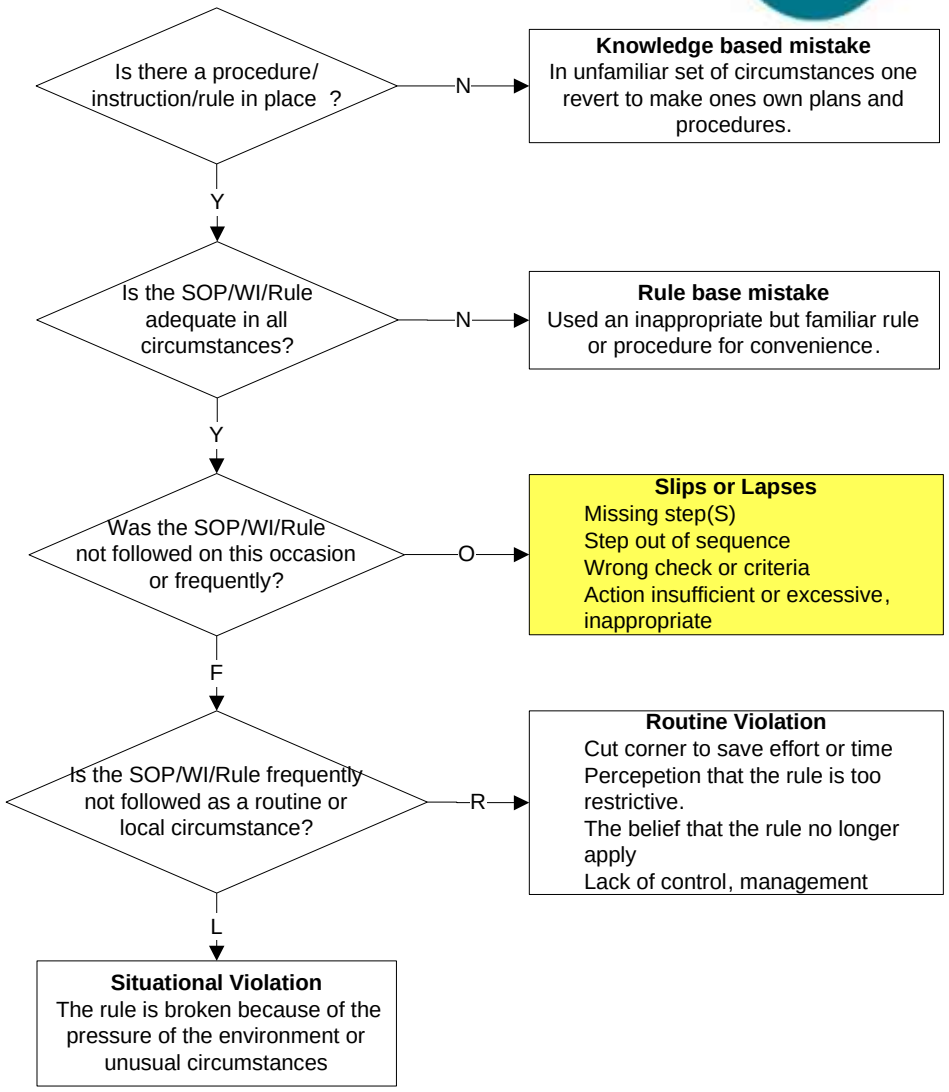
Organisation factors: these causes are grouped into 6 major categories which are :

- *People*
- *Methods*
- *Machines*
- *Materials*
- *Measurements*
- *Environment*

Do not forget to follow through to the root cause by asking several questions as to “how could it have happened?” or “why did it happen?”

Root Cause

Human factors: this is a Consequence rather than a cause. We cannot simply say “such and such was caused by human error”. The investigator needs to understand what caused the human failure.



Actions and close out

Containment actions: these are the immediate/temporary actions which should be put in place to contain the problem and “fix it” until permanent correction is in place

i.e. a leaking pipe – the issue is contained by placing a bucket under the leak.

Permanent Corrective Actions (PCA): these must be solutions that address and correct the root cause and the solutions determined to be the best of all the alternatives.

It is important to verify the PCA to ensure that the corrective action does “what it is supposed to do.” Any undesirable side effects should be documented and if necessary return to the root cause analysis.

i.e. the leaking pipe – the PCA is repairing the leak and the verification ensuring the repair is fit for purpose and has permanently stopped the leak.

Actions and close out

Communication, communication, communication: Learning and sharing across teams is essential to organisational development and constant improvement.

It may not be possible for the exact issue to happen in a different team but the principles of activity may be the same i.e. an investigation into a misplaced item.

Verification: it is important to confirm and prove the action has achieved the requirement.

Incident closeout: select the appropriate means to suit the issue to be closed out i.e. formal letter, presentation etc.

Quality monitoring – tools/techniques

Correction and constant improvement does not just relate to corrective actions.

Other tools as part of the Quality process can offer distinct benefit:

- **Failure Modes and Effects Analysis (FMEA):** this is a methodology for analysing and examining the steps within a process for all the things that could go wrong so you can work to prevent the most pressing issues.

- **Pareto chart:** this can be used to identify issues that cause a disproportionate amount of quality problems.

- **Work flow/work instructions:** Map and compare the work instructions against the actual actions taken. If the correct procedure is not being followed this can cause the process problem invariably due to the instructions being simply out of date.

Quality monitoring – tools/techniques

- **Plan, do, check, act cycle.**

- **Audit:** maintain an annual program and spot checks for processes and activities including actions from Quality Incidents to verify the process meets the standards, ensuring compliance and finding further opportunity for improvement.

- **Proficiency Testing (PT) and Science Leads:** PT provides the infrastructure to monitor and improve the quality of routine analytical measurement and practice including opportunity to improve the performance of the participant. LGC Forensics has newly appointed Science Leads who are integral to this process.

Final Comment

Quality, correction and constant improvement is the responsibility of everyone.

Science
for a safer world

Data Integrity for the National DNA Database with DNA-17

Forensic Science Regulator's Quality Managers Conference

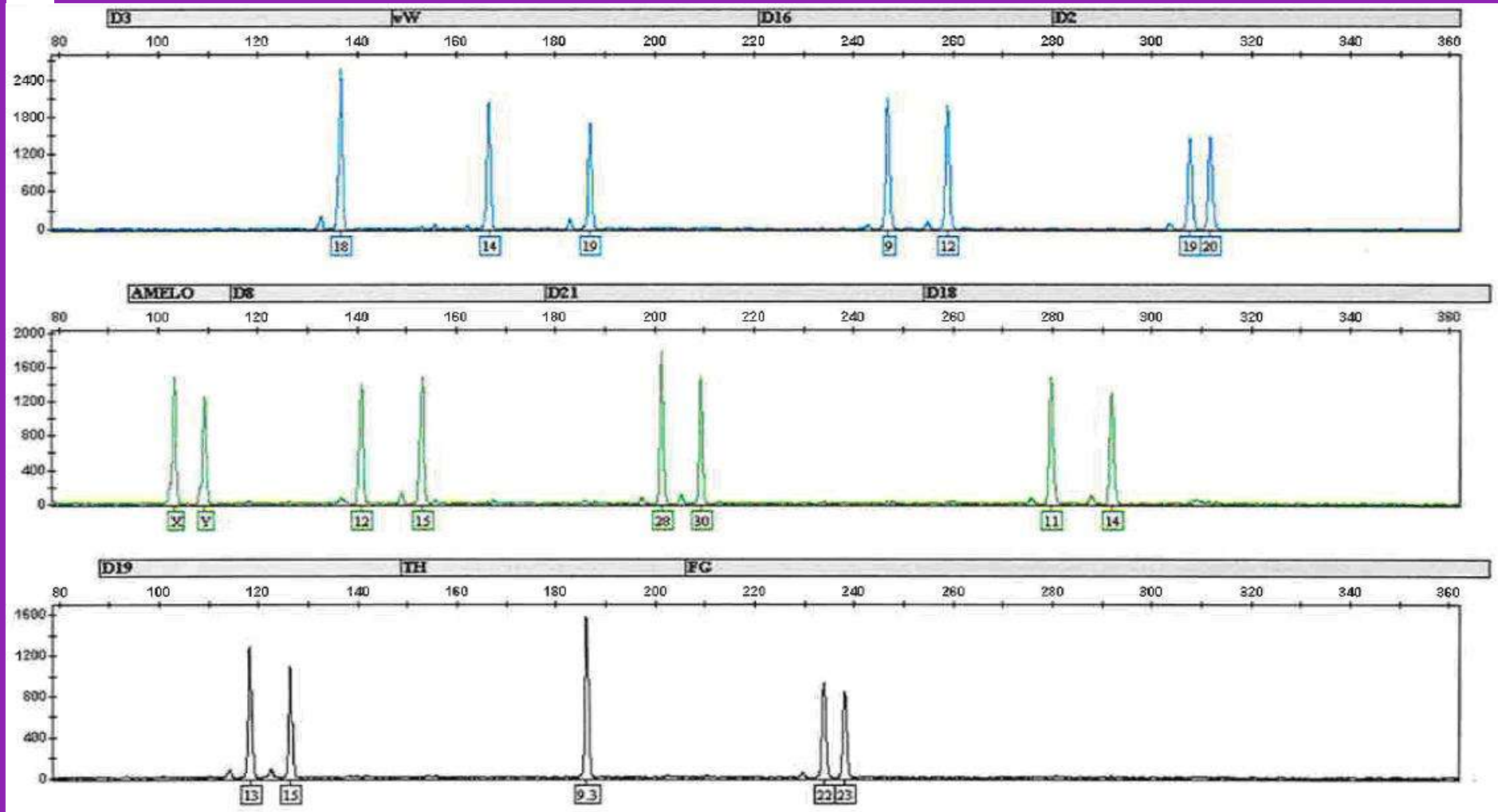
Presented by: Adam Shariff
Date: 4th February 2014

Overview

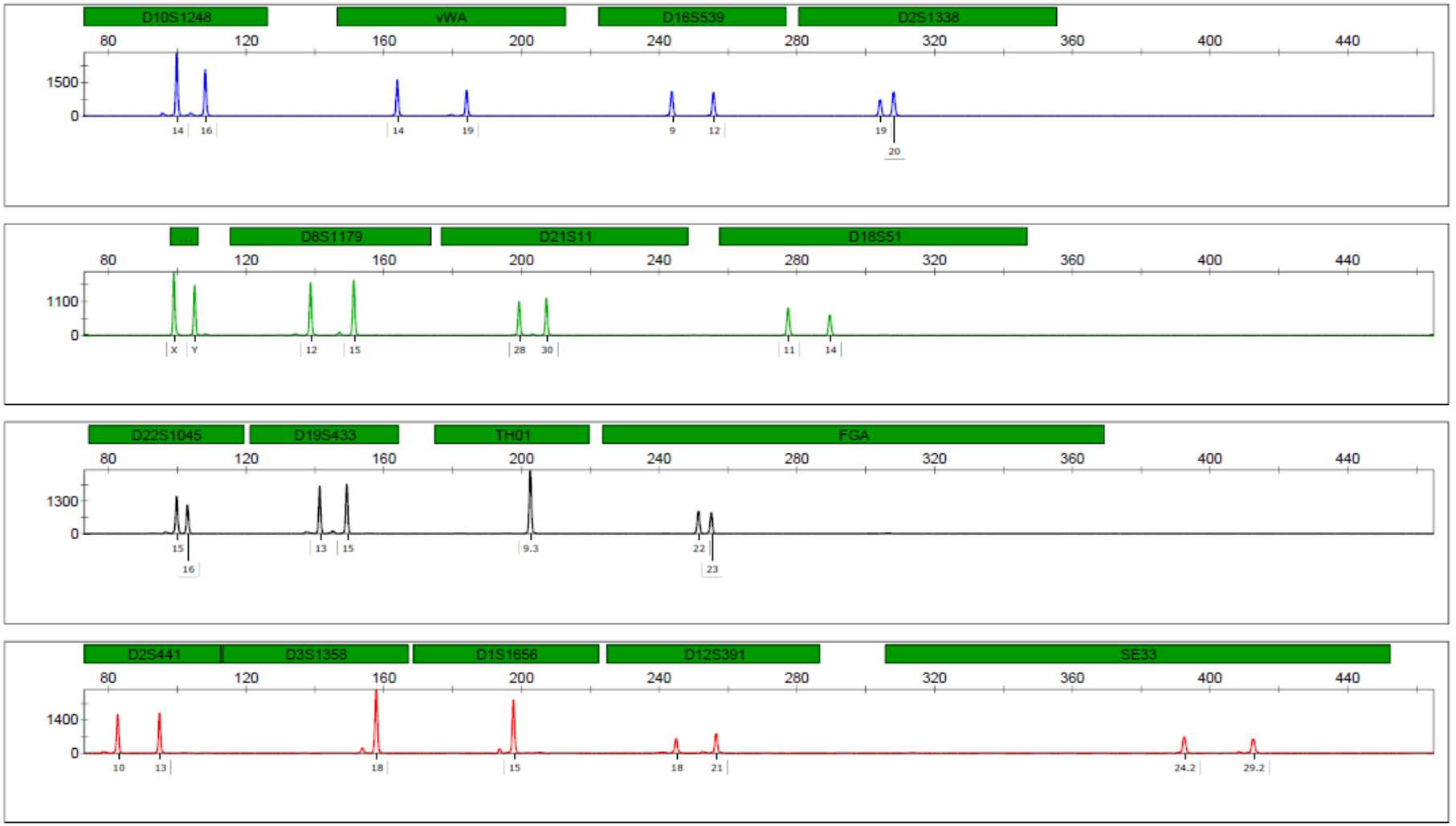
- What is DNA-17?
- Data Integrity for the UK NDNAD
- What is Near Match Reporting?
- Data Integrity with DNA-17

What is DNA-17?

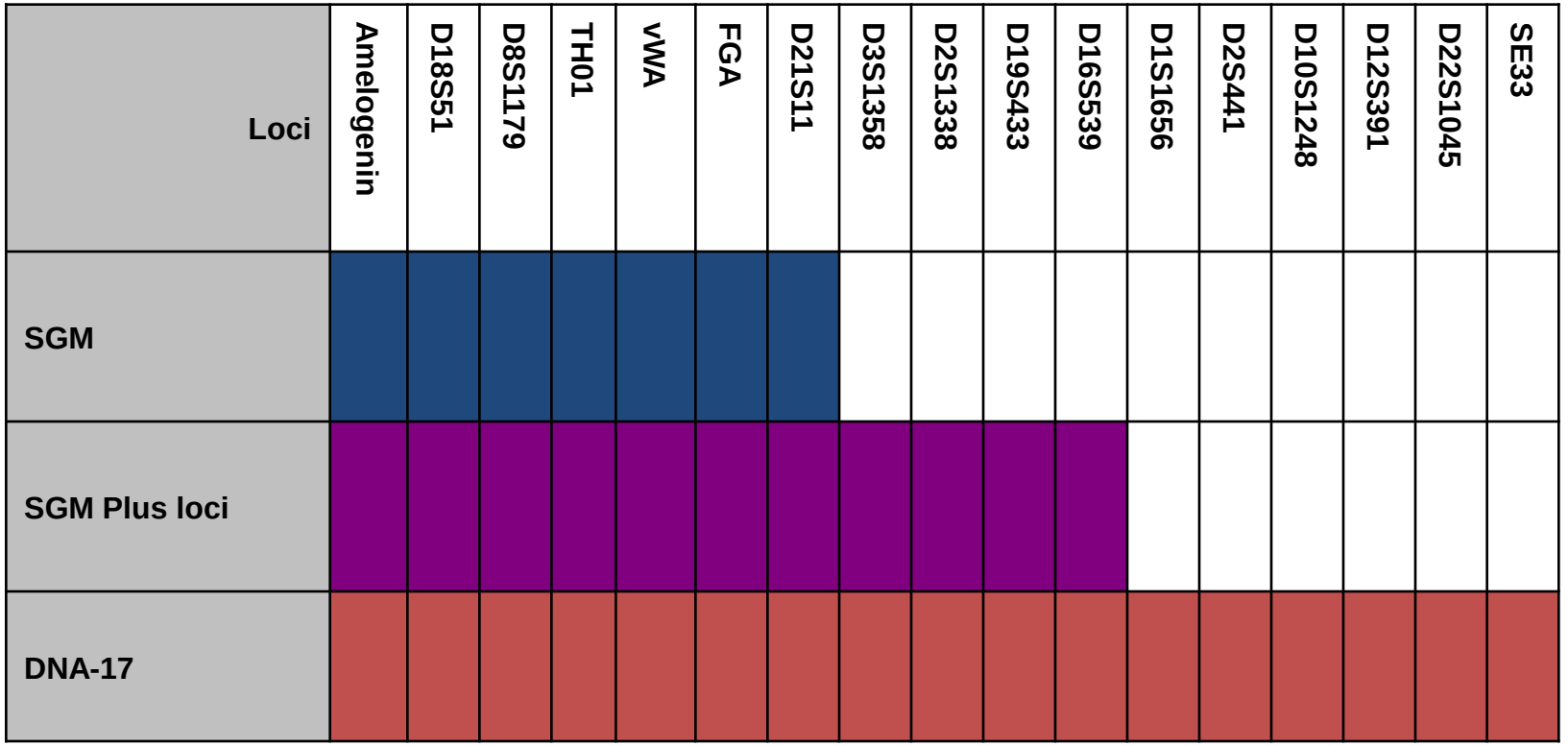
SGMPlus to DNA-17



SGMPlus to DNA-17



SGMPlus to DNA-17



SGMPlus to DNA-17

Loci	Amelogenin	D18S51	D8S1179	TH01	vWA	FGA	D21S11	D3S1358	D2S1338	D19S433	D16S539	D1S1656	D2S441	D10S1248	D12S391	D22S1045	SE33
SGM																	
SGM Plus loci																	
DNA-17																	

Available DNA-17 Products Authorised for NDNAD

Life Technologies

AmpFlSTR NGMSElect™

QIAGEN

Investigator ESSPlex SE Plus

Promega Corp

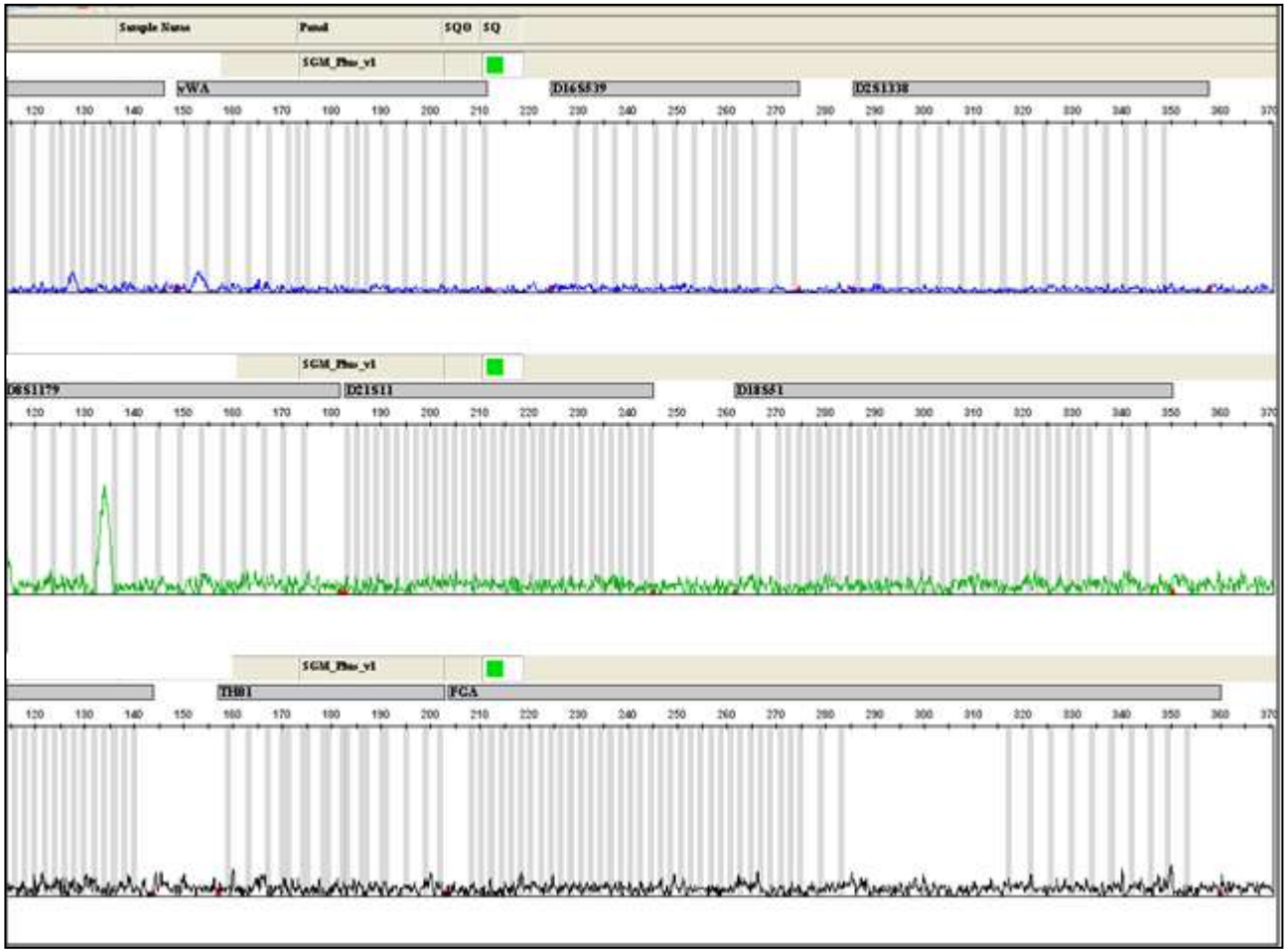
Powerplex® ESI-17

Why DNA-17?

- Increased number of target areas (discrimination);
- Commercial;
- International Data Sharing;
- Improvements to science:
  - Degradation:
    - New target areas less susceptible to effects;
    - New ‘reagents’;
  - Inhibition:
    - E.g. Haematin (blood), Indigo (dye in denim), etc.;
  - Sensitivity.

Sensitivity

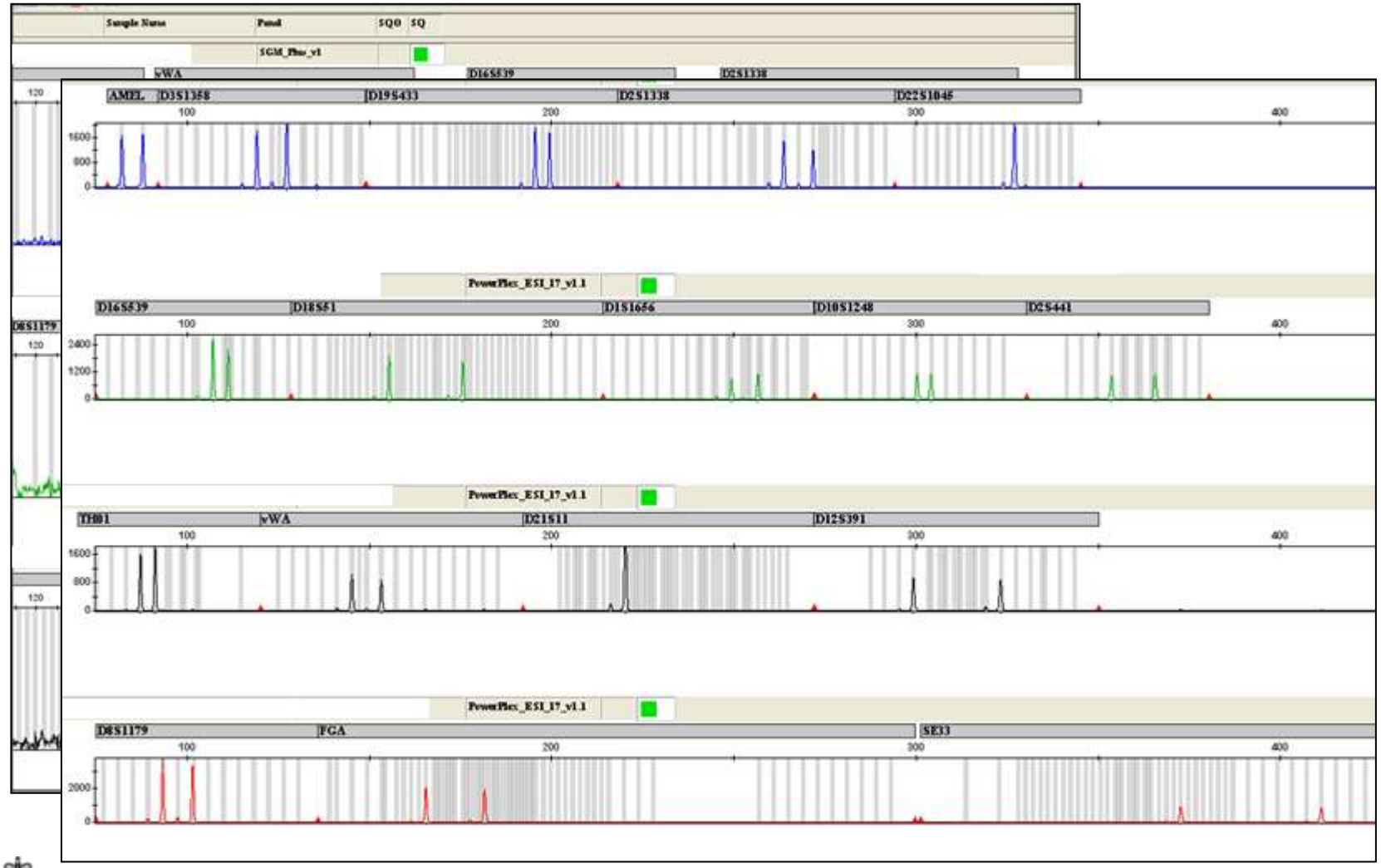
Example from exhibit 1



No Profile SGMPlus™

Sensitivity

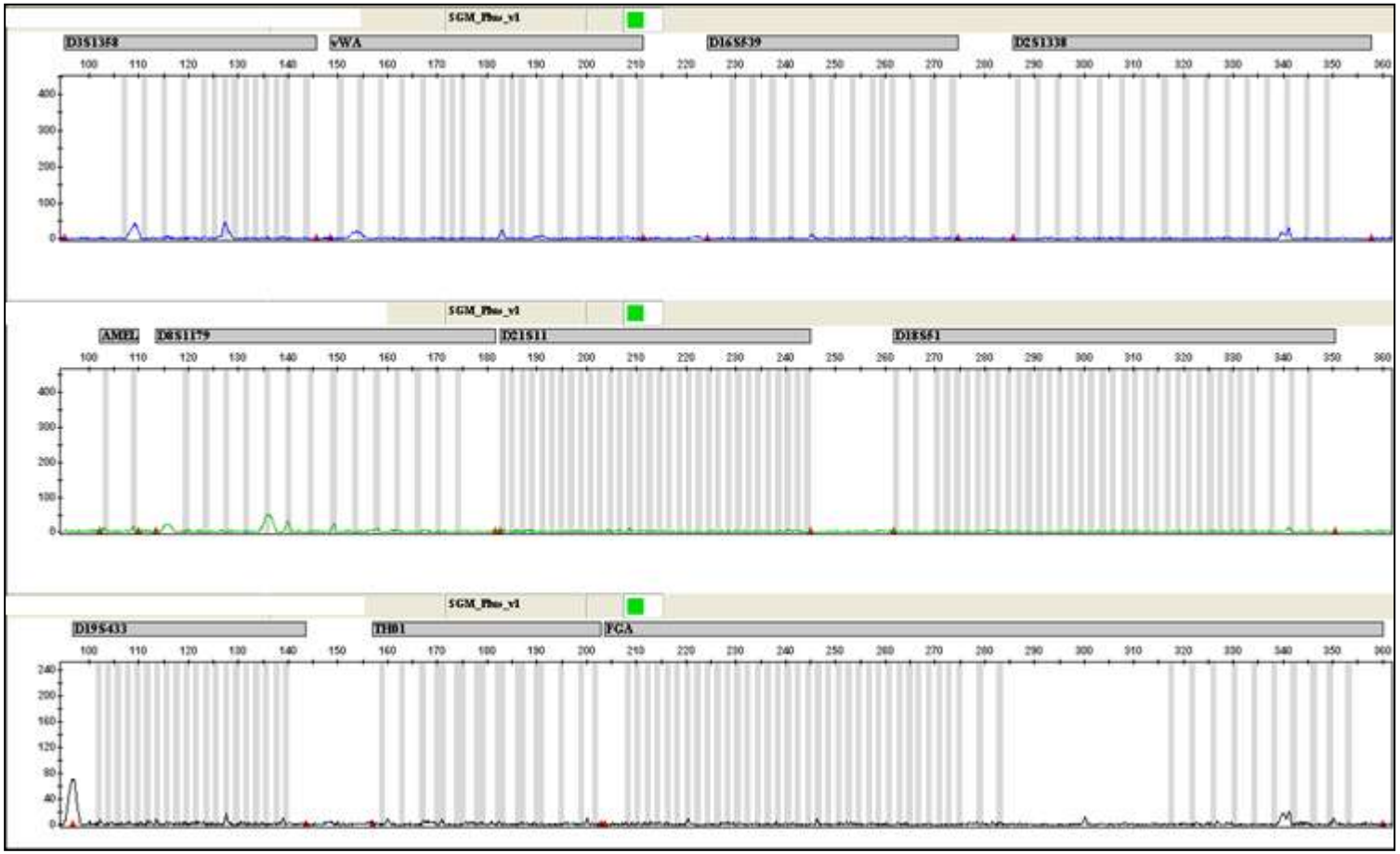
Example from exhibit 1



Full Profile Powerplex® ESI-17

Sensitivity

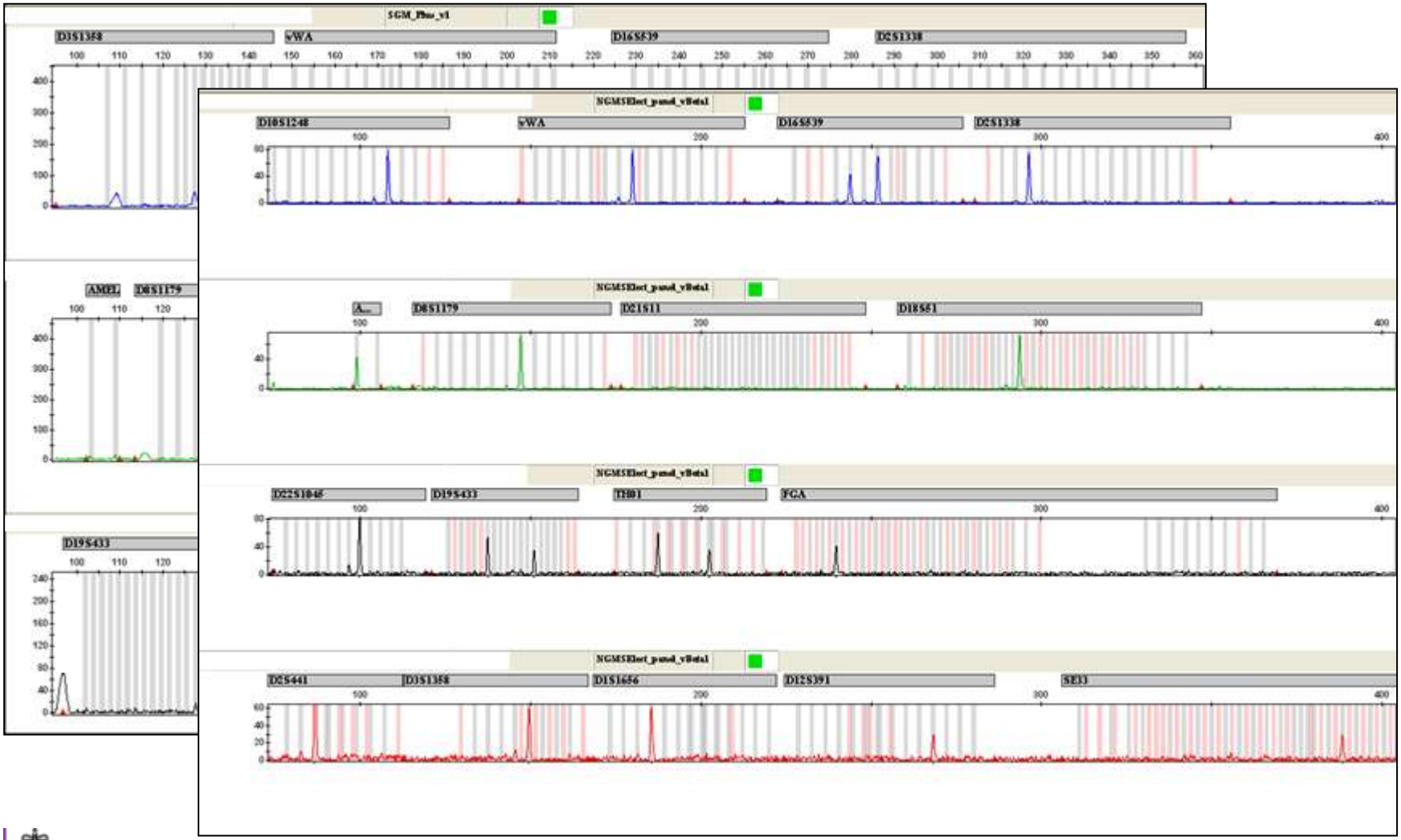
Example from exhibit 2



No Profile SGMPlus™

Sensitivity

Example from exhibit 2



Partial Profile NGM SElect™

Data Integrity for the UK NDNAD

Integrity Approach

INPUTS

MAINTENANCE

Near Match Reporting

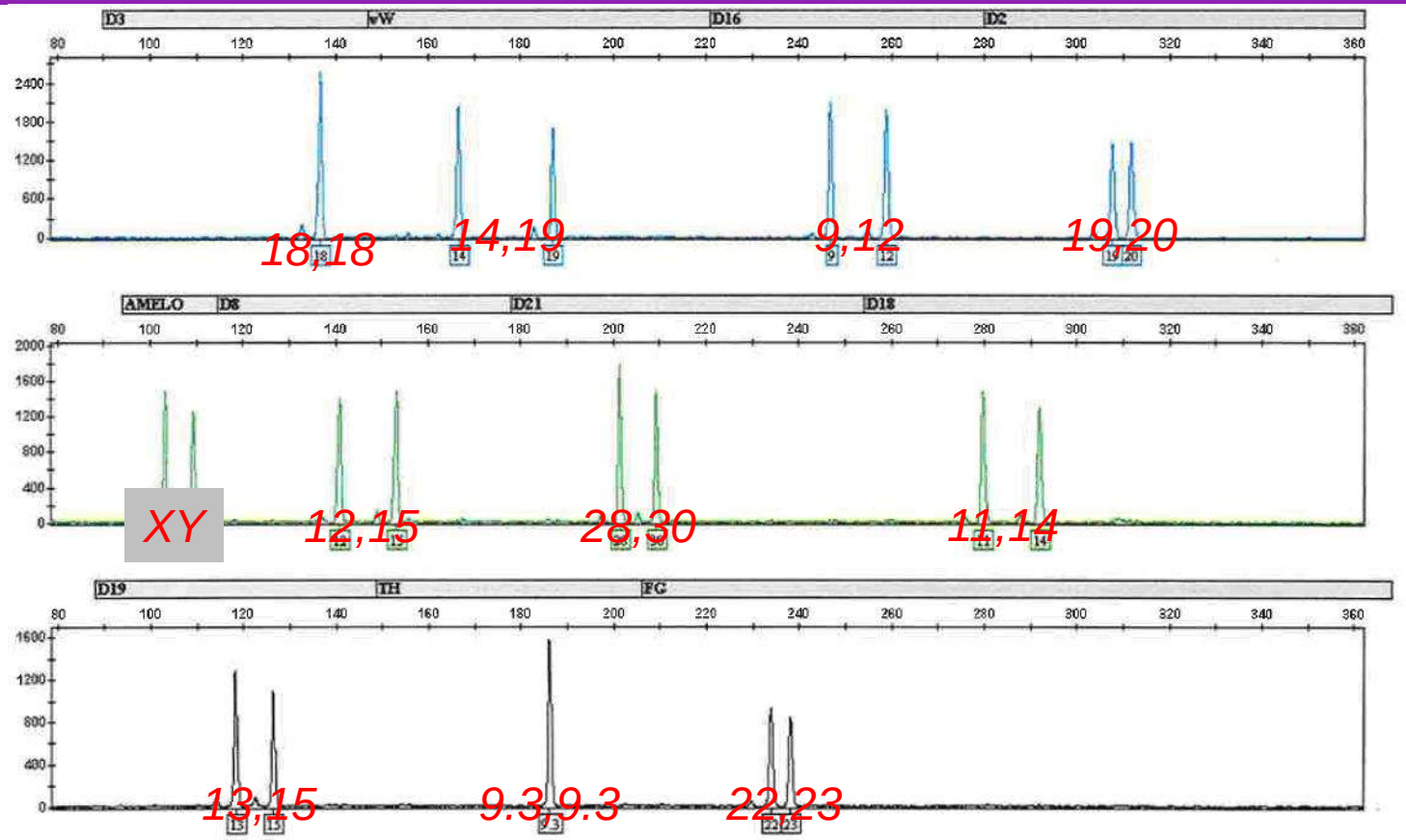
Discordance

	Data Integrity Activity			
	Inputs	Outputs	Maintenance	Interrogation
CONTROL MECHANISMS				
Technical Standards Documents	✓		✓	
Validation Assurance /SoUC	✓		✓	
NDNAD Development User Requirements	✓	✓	✓	✓
Performance Monitoring /Quality Reports	✓		✓	
Unexpected Results Investigation			✓	✓
PT Scheme	✓		✓	
Sample Duplication	✓		✓	
Process Reviews	✓		✓	
TECHNICAL STANDARDS				
Minimum Load Criteria	✓			
Near Match Reporting			✓	
Discordance			✓	
Contamination Monitoring			✓	✓
Standards of FSP performance	✓		✓	✓
Allele designation rules	✓		✓	
OPERATIONAL				
*.ARF file requirements	✓			
Profile Release		✓		
Non-routine speculative search				✓
Trend Analysis			✓	
22 vs 22		✓	✓	
Enquiries		✓		✓
Amendments			✓	
Deletions		✓	✓	
Suspensions			✓	
Lab Checks		✓	✓	
PED Comparisons	✓		✓	✓
Match Reporting		✓		✓
Specialised Searches (DNAboost /Familial)				✓

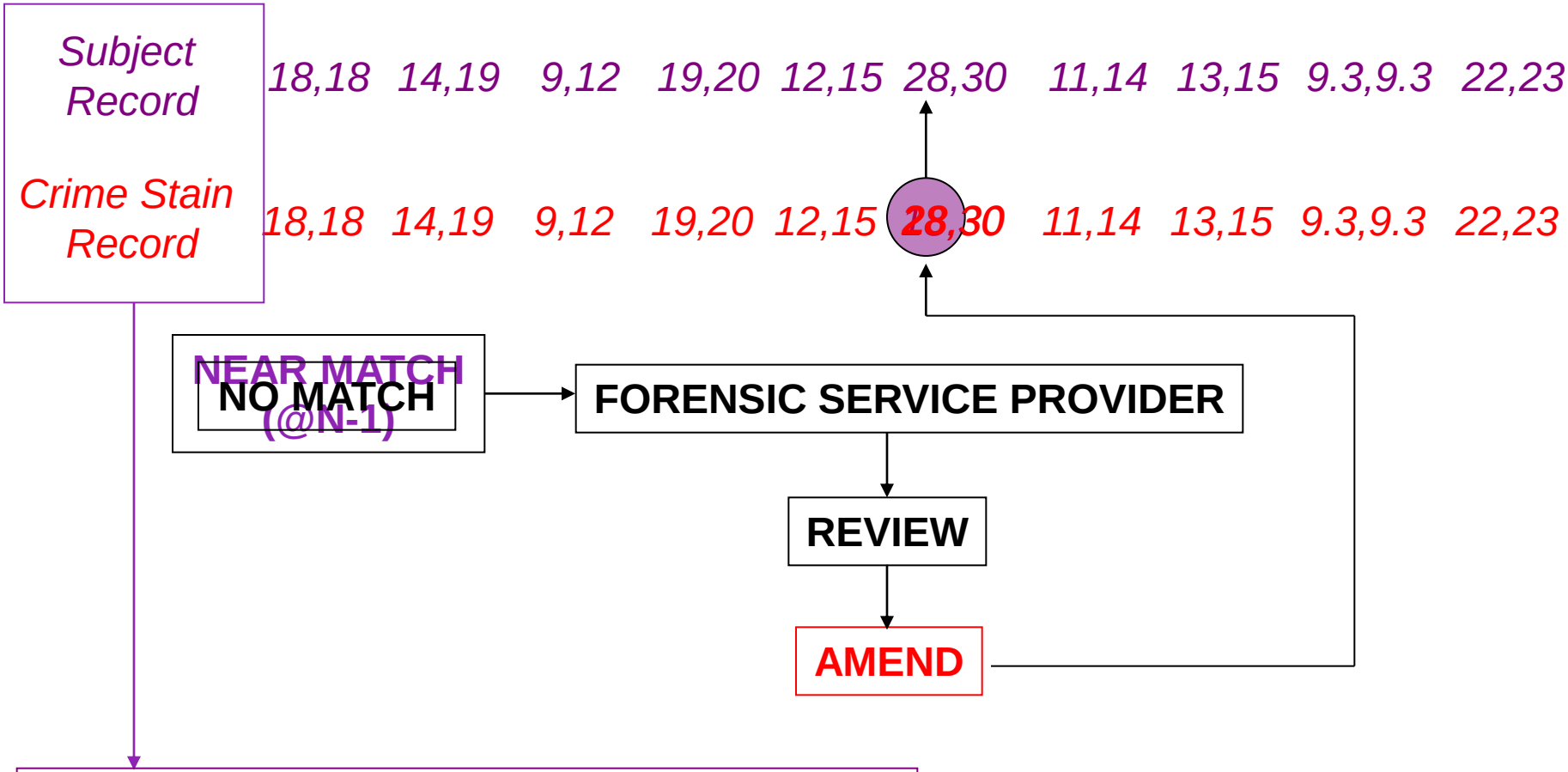
Home Office

What is Near Match Reporting?

What is an NDNAD DNA Profile?



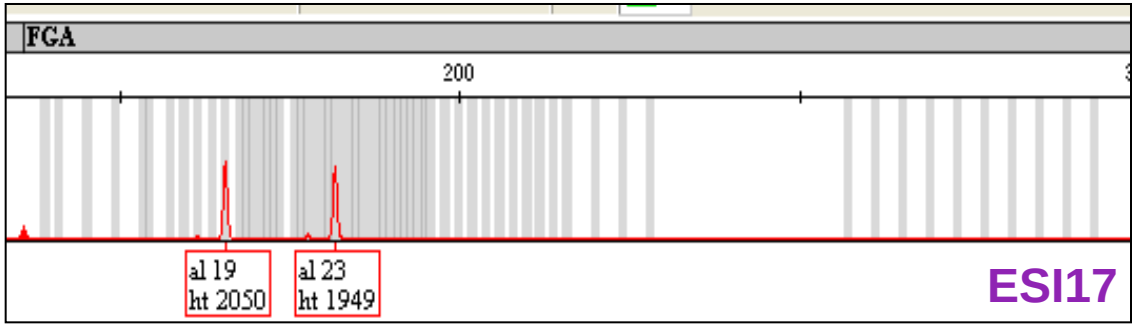
Near Matches
(Error Investigation)



Data Integrity with DNA-17

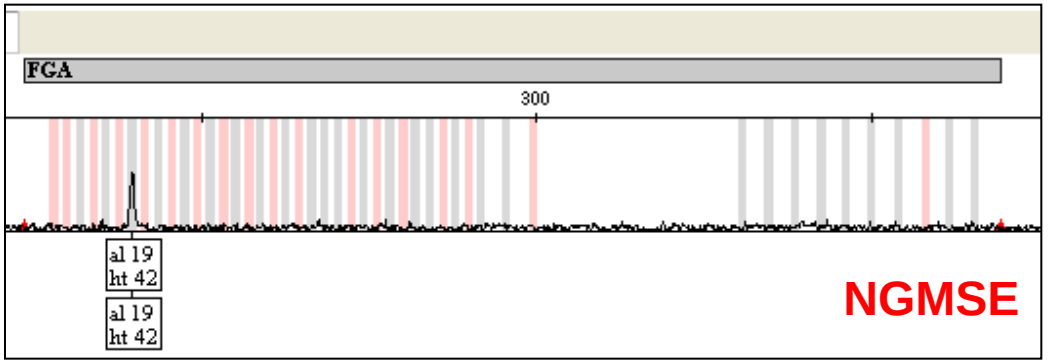
Discordance

Profiles courtesy of Forensic Science Northern Ireland

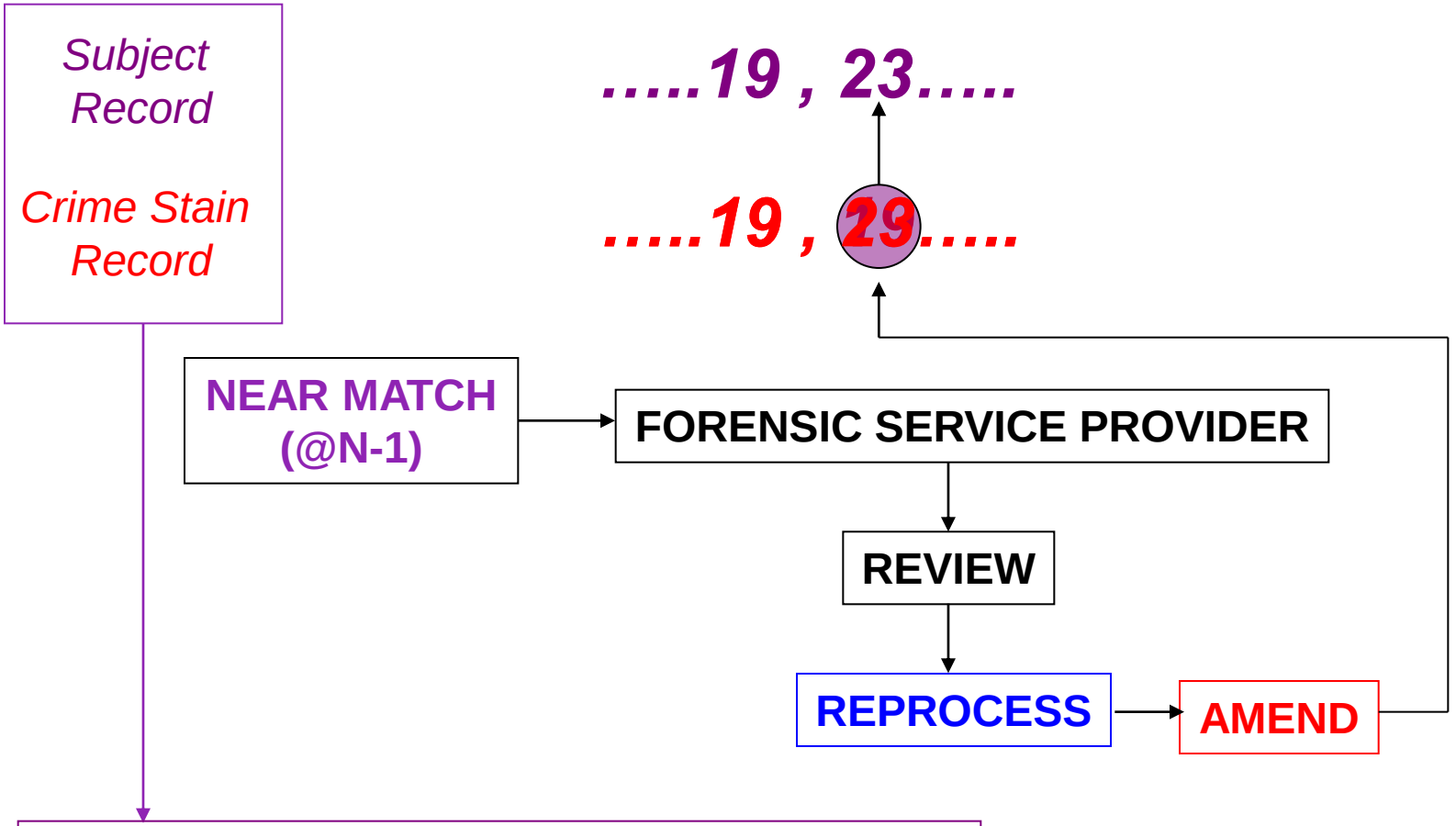


…..19 , 23…..

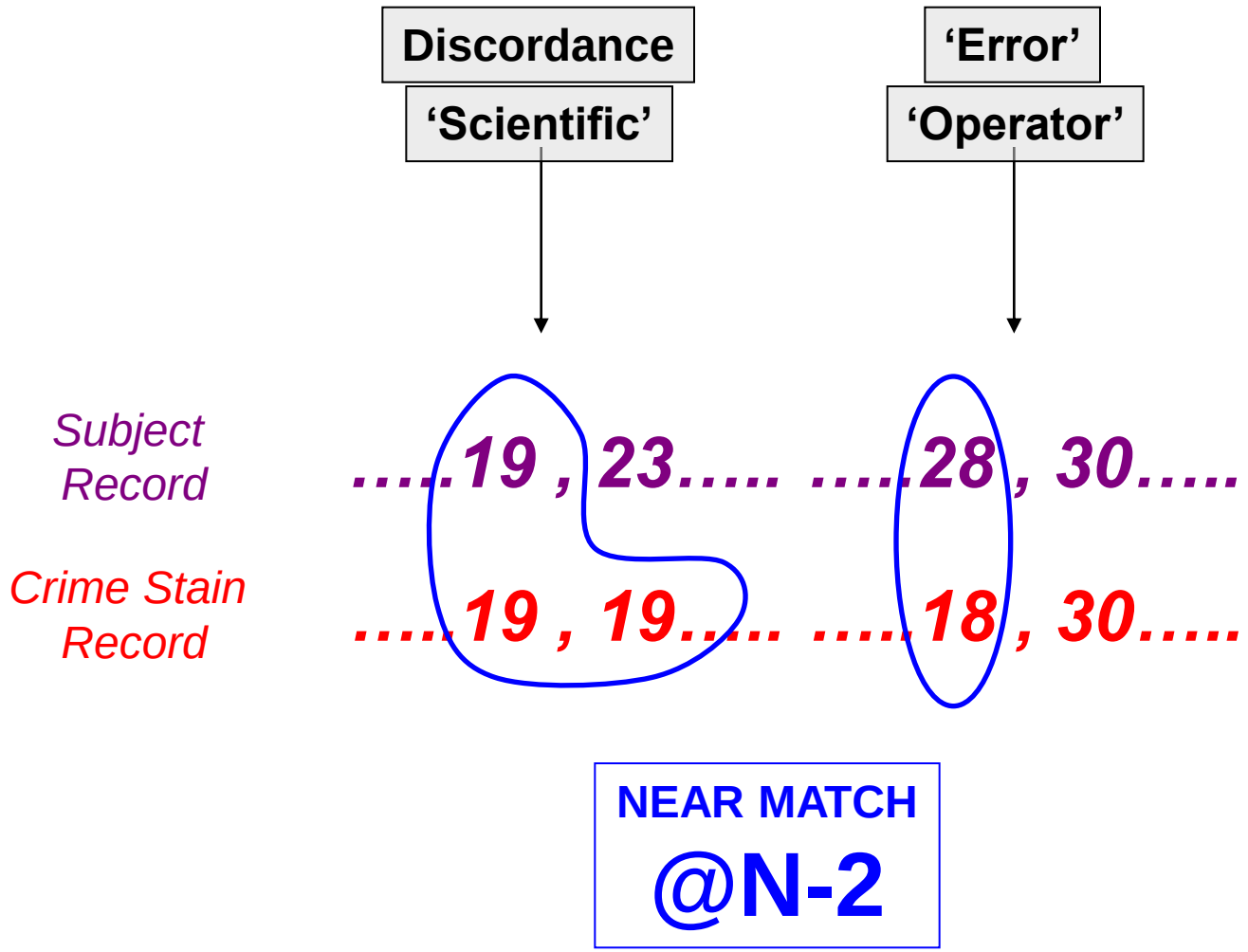
…..19 , 19…..



Near Matches
(Discordance Investigation)



What if…


Discordance
'Scientific'
'Error'
'Operator'
Subject Record
Crime Stain Record
…..19 , 23…..
…..28 , 30…..
…..19 , 19…..
…..18 , 30…..
NEAR MATCH
@N-2

Proposal: 'TARGETED' N-2

Identify **ALL** profiles with two differences where:

ONE DIFFERENCE IS A DISCORDANCE TYPE

…..19 , 23…..

…..19 , 19…..

&

…..28 , 30…..

…..18 , 30…..

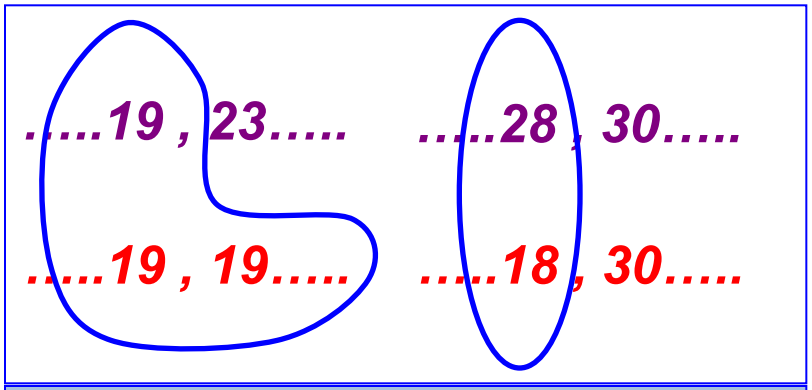
ONE DIFFERENCE IS ANY

'ERROR' OR DISCORDANCE TYPE

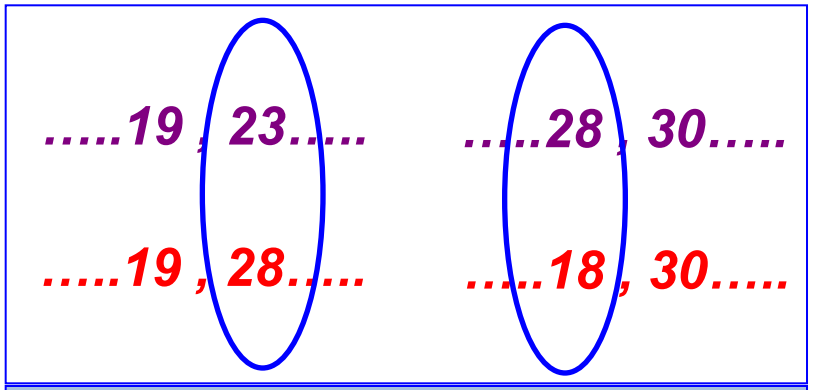
BUT ALSO…

Proposal:
SERIOUS CRIME 'FULL' N-2

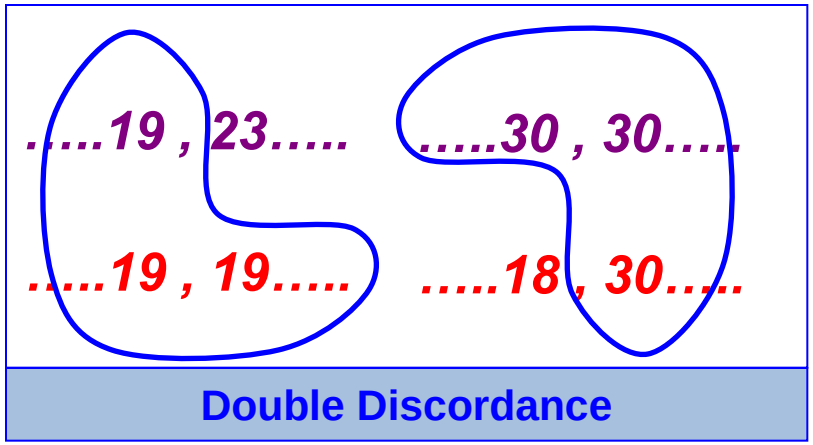
SERIOUS CRIME profiles with **ANY** two differences:



Discordance & 'Error'



Double 'Error'



Double Discordance

Summary

- ‘N-1’ Investigations continue:
  - Continue single ‘error’ investigations;
  - Account for single ‘discordance’ investigations;
- Targeted ‘N-2’ investigations to be introduced:
  - Look for ‘discordance’ type pattern with any other type of difference;
- Serious crime full ‘N-2’ investigations to be introduced:
  - Any combination of 2 differences.

Improved Data Integrity Checking

Forensic Science Regulator

Overseeing Quality

Forensic Archaeology Standard

Rob Janaway MIfA

Institute for Archaeologists/University of Bradford

Forensic Science Regulator's Quality Managers Conference

Who am I?
Rob Janaway

- Lecturer in Forensic and Archaeological Sciences, University of Bradford
- Forensic Archaeologist
- Chair of IfA SIG and EP

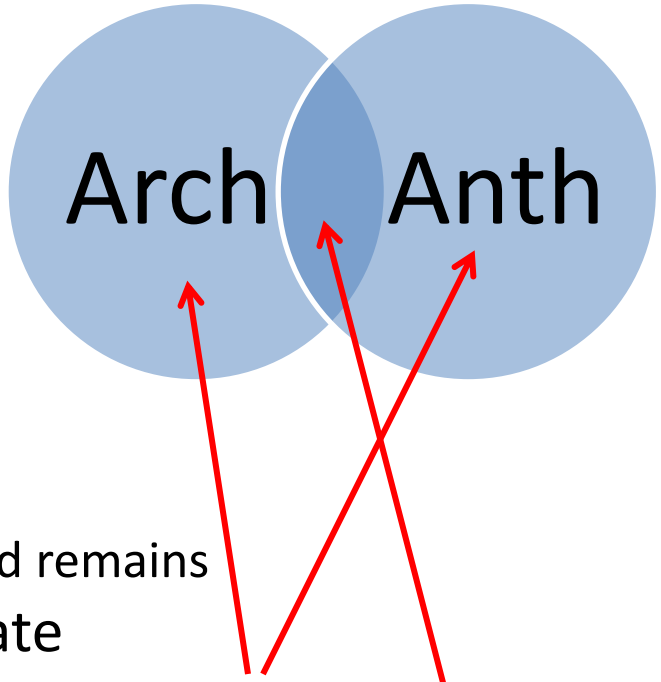
Scope of this presentation

- What is Forensic Archaeology?
- Forensic Archaeology and Forensic Service Providers
- Forensic Archaeology and Institute for Archaeologists

What is Forensic Archaeology?

- Use of Archaeological Techniques as part of a police investigation
- Usually in role of search and recovery of buried or similarly concealed material
- Often but not always a body in a clandestine grave

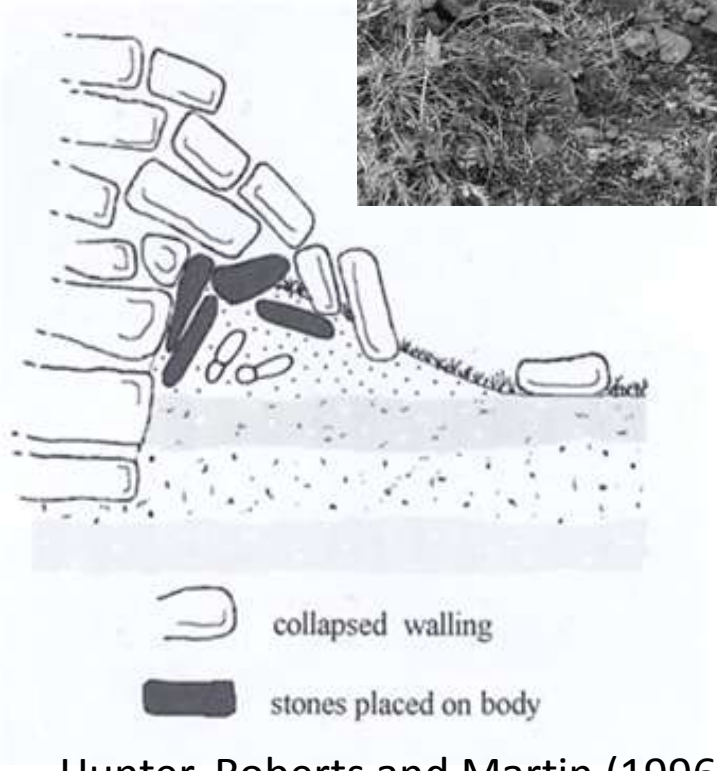
Forensic Archaeology
Forensic Anthropology



- Separate disciplines in UK
  - Forensic Archaeology
    - Search, excavation and recovery
  - Forensic Anthropology
    - Analysis and interpretation of skeletonised remains
  - For regulation purposes we are separate
  - Individuals can demonstrate competency in either or both
- <u>Forensic Archaeology</u>
  - Institute for Archaeologists (IfA)
    - Professional body for all archaeology in UK
- <u>Forensic Anthropology</u>
  - British Association for Forensic Anthropology (BAFA)
  - Royal Anthropological Institute

Forensic Archaeology in UK

- 1988 John Hunter and Charlotte Roberts excavate remains of Stephen Jennings
  - Missing since 1962
  - Systematic excavation demonstrated that body had been placed by wall and stone placed on top
  - Later covered by collapse
  - First use of Archaeology in UK Crown Court



Hunter, Roberts and Martin (1996)

Forensic Archaeology

- Can define cut features (pits, graves)
- Maximise recovery
- Stratigraphic excavation:
  - Can relate evidence (plastic, food wrappers etc.) to the fill of grave or the spoil dug out of the grave.
- Recover tool marks, boot prints in base of grave

- <u>To be a competent forensic archaeologist you need to be a competent archaeologist first!</u>

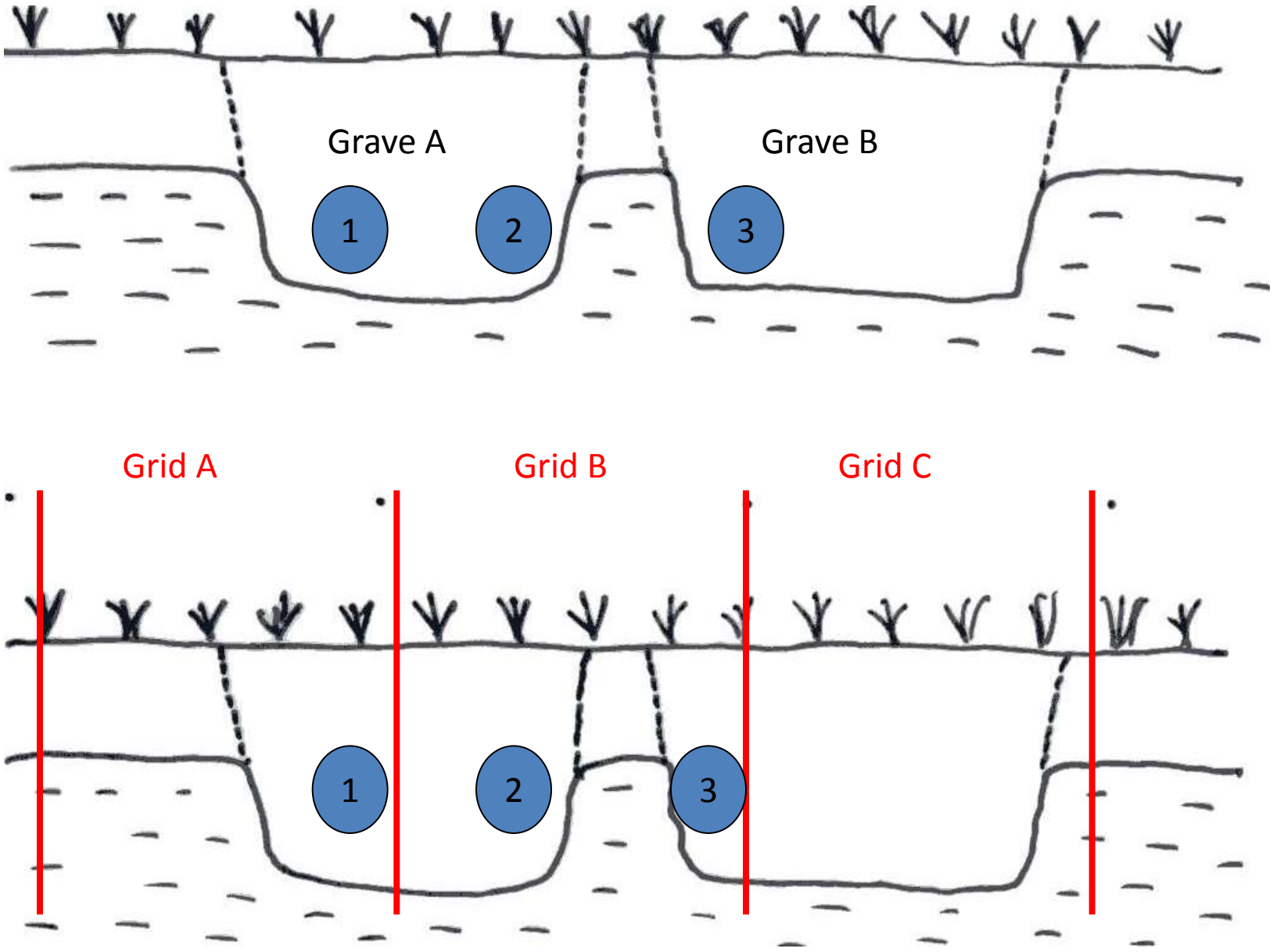
Before use of archaeologists

- Garden of Melrose Avenue 1983
- Police use
- of grids
- Soil dug out and put through sieves

Source: Press Association from Hunter et al (1996)

A hypothetical Scenario – the problem of random grids

- Rear garden under lawn concealing two graves
- These contain the fragmentary human remains and three food wrappers with the following batch dates:
  1. Aug 2002
  2. Dec 2002
  3. March 2005


Grave A
Grave B
1
2
3
Grid A
Grid B
Grid C
1
2
3

A hypothetical Scenario - results

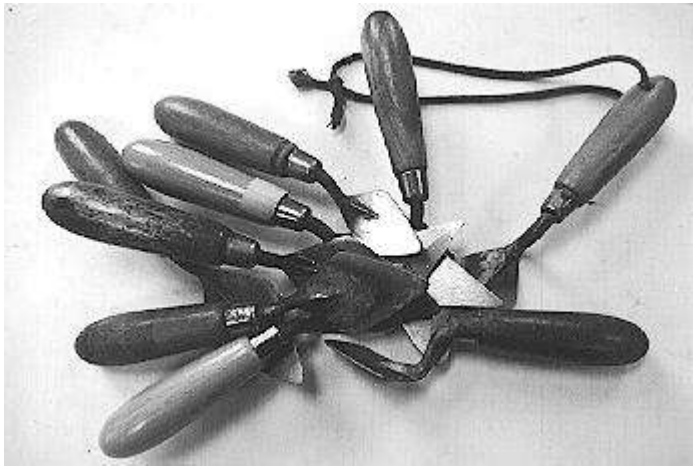
Stratigraphic excavation

- Two separate grave cuts:
- Grave A
  - Exhibit 1 (Aug 2002)
  - Exhibit 2 (Dec 2002)
- Grave B
  - Exhibit 3 (Mar2005)

Grid excavation

- No separate graves identified:
- Grid A
  - Exhibit 1 (Aug 2002)
- Grid B
  - Exhibit 2 (Dec 2002)
  - Exhibit 3 (Mar 2005)
- Grid C

Main tool is 3”-4” pointed trowel



- can be used rapidly
- with experience can identify subtle differences in texture and compaction between the fill of a grave and matrix into which it has been dug
- While progress can be rapid – speed will depend on the soil conditions and the target

Other tools can involve mechanical excavators

Tracked digger with, wide toothless bucket

Recognition of Forensic Archaeology

Checking: Police forensic officers remove garden material in Garforth.

Garden dug up in search for woman

Joanne Ginley

POLICE and forensic experts yesterday searched the back garden of the house of a missing 74-year-old woman.

Police said yesterday it was believed that Elsie Wrigglesworth, who lived in Oak Road, Garforth, near Leeds, had not been seen for two years.

A man was arrested over the weekend after police were alerted on Saturday to Mrs Wrigglesworth's disappearance.

Police said last night that earlier in the day they were granted an application by magistrates to extend by 36 hours the amount of time they can keep the man in custody.

Police in anti-contamination suits and wearing face masks began a painstaking search of the garden of her home. She had lived in the street for more than 30 years, initially sharing the home with her two children and late husband.

Neighbours said yesterday they thought Mrs Wrigglesworth had gone to stay with her daughter.

One neighbour confirmed that the property was in a run-down state with the curtains permanently drawn.

"Until recently we could hardly see the front window because the hedge was so high."

Another described Mrs Wrigglesworth as a quiet person, who kept herself to herself, but who was always smiling.

"She was a loner and very quiet but was a really nice person and never bothered anybody," he said.

■ David Wrigglesworth, 48, of Garforth, appeared before Leeds magistrates, yesterday, charged with three offences of forgery.

- From 1988 onwards a number of Forensic Archaeologists were recognised by British Police Forces
- In early days brought in on an ad hoc basis rather than embedded in Forensic Science Service or the emerging independent Service Providers

Forensic Provision and Forensic Archaeology

- Forensic Science Service
  - closed 2012
  - worked with Forensic Archaeologists but none on books
- National Framework for Forensic Science
  - did not have to include niche services

    e.g. Archaeology
- Archaeologists employed or retained FSPs e.g.
  - Cellmark,
  - MFL etc.

Regulation of Forensic Archaeology

- 2011
- Established that the Institute for Archaeologists is the professional body for the discipline
- Recognised by Forensic Science Regulator

IfA and Forensic Archaeology

1. Standards and guidance for forensic archaeologists
2. Matrix of Forensic Archaeology competency standards drawn up to assist the IfA Membership Committee
3. Forensic Archaeology Special Interest Group and Expert Panel Established

IfA Published Standards and Guidance for…

- Archaeological advice
- Desk-based assessment
- Field evaluation
- Excavation
- Archaeological watching brief
- The archaeological investigation and recording of standing buildings or structures
- The collection, documentation, conservation and research of archaeological materials
- Stewardship of the historic environment
- For nautical archaeological recording and reconstruction
- The creation, compilation, transfer and deposition of archaeological archives
- Geophysical survey
- Forensic archaeologists

Standards and guidance for forensic archaeologists

- Authors:
  - Natasha Powers BSc MSc MIfA
  - Lucy Sibun BSc PgDip AIfA
- Approved AGM of Institute October 2011
- Endorsed by Council
- Endorsed by Home Office Forensic Regulator

IfA Forensic Archaeology membership

- 3 Grades of professional membership..
- Forensic Archaeology Competency Matrix for use by membership committee
  - Practitioner (Forensic Archaeology) PIfA
  - Associate (Forensic Archaeology) AIfA
  - Member (Forensic Archaeology) MIfA
    - Highest grade equivalent to “Reporting Officer”

Member (Forensic Archaeology) also includes reference to national occupational standards NOS

Competency matrix for MIfA Forensic Archaeology

Knowledge	***Autonomy*** **(NOS – AE1, AF1, AF3, AF4)**	***Coping with complexity***	***Perception of context***
Ability to understand complex archaeological problems, excavate, record, plan and draw sections rapidly **(NOS - CN301)**	*Take role as Lead Archaeologist with Reporting status.* **(NOS – CN401, CN403, CN702, HB6, HD5, HD6)**	*Broad knowledge of police structure, criminal investigation, scene of crime infrastructure and of the relevant criminal justice system and procedures.* **(NOS – HD2)**	*Ability to provide reports orally and in writing to colleagues, to communicate succinctly without excessive terminology, and to give evidence lucidly in court.* **(NOS – CN901, CN902, DA10, DA101)**

Knowledge	***Autonomy*** **(NOS – AE1, AF1, AF3, AF4)**	***Coping with complexity***	***Perception of context***
Familiarity with electronic and conventional methods of survey, aerial photography, understanding of advantages and limitations of relevant geophysical techniques **(NOS – CN301)**	*Be able to make a practical contribution to a Search Strategy.* *Confidently advise on the wider factors which influence search methodologies, the underlying principles of the techniques available, and, of their advantages and limitations* **(NOS – CN601)**	*A broad knowledge of landscape, soils and factors which dictate the selection of deposition sites. An awareness of what maps, pictorial and aerial imagery resources might be utilised to reconstruct landscapes (changes to tree lines, coastline etc.); and, have a working knowledge of both modern and older building constructions especially in terms of floors, walls, footings, subfloor deposits.* *Understanding of the evidential requirements of other scene of crime personnel, e.g. forensic scientist, entomologist.* **(NOS – AD1, AD2)** *Being able to plan a systematic and sequenced excavation strategy that ensured the 'best evidence'.*	*To provide advice and to work in concert with the Police Search Adviser (POLSA), Police Search Team; and Police Dog handlers.* *To provide advice as to use of other specialists available to assist the search and location phase* *To acknowledge boundaries of own expertise, to recommend others as appropriate, and ability to work independently but within team* **(NOS – AD1, AD2)**

Knowledge	***Autonomy*** **(NOS – AE1, AF1, AF3, AF4)**	***Coping with complexity***	***Perception of context***
Understand the role of photography in an investigation and direct photographers accordingly **(NOS – CN402)**	*Responsible (where appropriate for team selection)*	*Broad knowledge of appropriate legal framework, including court systems, disclosure and continuity of evidence* **(NOS – AD1)**	*Understands and gives clear leadership to archaeologists and other crime scene personnel with respect to extent and role of archaeological involvement in operation* **(NOS – CN101, CN201)**
Basic knowledge of human skeletal components and their anthropological significance, familiarity with skeletal terminology		*Ability to give advice confidently, to acknowledge boundaries of own expertise, to recommend others as appropriate, and ability to work independently, but within team* **(NOS – AC1)**	
Ability to keep up to date with developments in the field and to take active steps to maintain competence **(NOS – AE1, HA2, HA3)**		*Active participation within the IfA Forensic Archaeology Special Interest Group to encourage 'best practice' and participation in other relevant national or international professional fora.* **(NOS – HD7)**	*Often provides Training Inputs to Police Forces or other investigative authorities.* **(NOS – HF6, HF7)**

Forensic Archaeology Expert Panel

- sub-group of Forensic Archaeology SIG
- closed membership
  - due to the nature of the work,
  - confidential discussions
- only open to practicing forensic archaeologists
  - Mifa (Forensic Archaeology) or invites
- Current chair Rob Janaway

Only Full Panel Members are entitled to refer to themselves as such and to use membership of the panel as a form of professional recognition within the Criminal Justice System

Aims of Forensic Archaeology Expert Panel

- to consider (and if appropriate take steps to implement) mechanisms for accrediting and/or regulating the work of those acting or seeking to act as expert witnesses in field of forensic archaeology
- to consider and discuss issues arising in the course of such work
- to liaise with Her Majesty's Government, the Forensic Science Regulator and any other relevant bodies or individuals with regard to such issues

For more information

http://www.archaeologists.net/

Forensic Science Regulator

Overseeing Quality

End of breakout session

Remaining Agenda		
Afternoon plenary (oral presentations only)		
15:50	The court dependence on the quality of forensic science[1]	HHJ Andrew Goymer
16:15	Forensic Science Regulation	Prof. Bernard Silverman
16:20	Closing remarks	Andrew Rennison

[1]Transcript available