

## Global Experience

Cellmark has gained extensive experience of victim identification in disaster victim identification (DVI) incidents.

### Asian Tsunami

Provided UK victim identification services to the Metropolitan Police's team that managed the work in Thailand. Developed enhanced bone analysis techniques to improve results.

### London Bombings

Worked with multi-agency team at mortuaries. Received more than 600 samples/body parts and reconciled 94% of post mortem samples to particular individuals.



### Fromelles

Working for the Commonwealth War Graves Commission, we were called in to analyse 45 of the most challenging samples from the 250 bodies which were excavated. Our scientists were able to identify 36 full profiles and 8 strong partial profiles from bones and teeth to complete the investigation.

### Operation Allegro - Afghanistan

When Pamir Flight 112 crashed in the Hindu Kush, Cellmark was approached to aid the identification of the victims. A range of sample types were received - bones, teeth, hair as well as tissue samples. Cellmark scientists identified the profiles of all 44 individuals on board.

IDENTIFICATION  
INTERPRETATION  
INNOVATION

DISASTER VICTIM IDENTIFICATION  
- experience and expertise



Specialist expertise  
for body recovery  
and identification

IDENTIFICATION  
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## Introduction

In 1987 Cellmark became the world's first private DNA testing laboratory. In the three decades since then we have gained extensive experience of working with mortuaries and advising pathologists about the sampling of DNA for DVI purposes.

Our laboratory analysis techniques have been tailored to manage the challenging samples often recovered for DVI, including techniques for the rapid analysis of degraded tissue, bones and teeth.

We achieve high levels of success, including analysis on bones dating back many years.

We are active in the development of international DVI protocols and we are accredited for the use of a wide range of DNA profiling systems which enables close collaboration with laboratories from other countries in the analysis of samples.

# DISASTER VICTIM IDENTIFICATION - experience and expertise

Cellmark offers a comprehensive and integrated service for the identification of human remains which capitalises on our world leading high sensitivity DNA analysis.

Our proven expertise and international reputation has been established through extensive casework and DVI experience.

In the last several years Cellmark has provided DNA analysis in more 370 DVI cases for a number of agencies.

We can facilitate and coordinate specialist DVI teams trained in victim recovery and identification at short notice, with teams including anthropologists, DNA scientists, odontologists, pathologists, radiographers, mortuary technicians, fingerprint experts and archaeologists.

We can provide assistance with terrorist incidents, natural disasters, transportation accidents, domestic and industrial accidents, war crimes, and military/combat fatalities.

In this capacity, we have worked alongside a number of internationally-recognised organisations and we train the British Military in body recovery and management of DVI incidents prior to theatre deployment.

One of the most challenging DVI incidents was Operation Allegro, which combined anthropology and recovery phases in Afghanistan with DNA analysis in the UK and which involved the combined efforts of specialist teams from the UK, Turkey and the USA.



## Operation Allegro challenges

An Antonov An-24, crashed into Salang Pass, 100 km north of Kabul, Afghanistan on 17th May 2010, resulting in extensive commingling and fragmentation of remains.

When the UK DVI team arrived May 30th, they discovered that clothing had all been removed from bodies and body parts, personal effects were mostly missing and a number of bodies/body parts had been released to Afghan families prior to their arrival.

The team, not unsurprisingly, had to work under extreme pressure from Afghan authorities. They faced issues relating to the Human Tissue Act in the UK, where the DNA analysis was undertaken.

The passenger list was inaccurate, 43 names were listed as travelling yet 44 profiles were obtained.

The scale of the operation was also unexpected. Whereas the numbers of bodies/body parts was initially said to be only 100–120, the final total was double that number.

## DNA analysis & results

257 samples were transported to UK in three consignments for urgent DNA analysis. Between 6th and 14th June, 206 items were received - 60 bones, 3 teeth, 1 hair and 142 tissue samples.

15 personal effects / reference samples were received from UK Nationals and their families, 35 reference samples from Afghan next of kin, 1 FTA card from a US victim, and familial profiles from 2 Turkish victims.

Bones and teeth were placed in batches together, the tissue samples placed in larger batches to enable high throughput. A rota system introduced to create a longer working day. Reference samples were processed in a separate lab for sample integrity.

Approval to process samples was received on 7th June, and initial profiling of all samples completed on 22nd June.

205 full-profiles, 1 weak partial profile (cut hair) - a 99.5% success rate. 44 different profiles were obtained (even though the original manifest listed only 43 passengers).

## Core Service Provision

The incorporation of anthropology and archaeology services within Cellmark's core service provision represents the latest stage of Cellmark's casework expansion programme that is delivering significant increases in forensic capacity and capability.

Working alongside and in partnership with Cellmark's specialist DNA experts we are able to offer an unparalleled body and bone identification service and enhance our established disaster victim identification response capability.

## Customers

Independent Commission for the Location of Victim Remains  
International Governments  
International Undertakers  
International Police Forces  
The Royal Military Police  
The MoD Police

## Geographic experience

Afghanistan  
Belgium  
France  
Germany  
Greece  
Iraq  
Kuwait  
Lebanon  
Libya  
Malta  
Spain

