

# Forensics in focus

Issue 8 | April 2015



## IFIC Forensics Training

Page 4



## Domestic Fridges and Freezers

Page 6



## Preparing and Planning for Investigations

Page 7



## Introduction - Paradigm shift in forensics Professor James Lygate



By way of introduction to this issue of Forensics in Focus I attended a conference at the Royal Society in London recently, entitled Paradigm Shift in Forensics. The conference was organised by the Royal Society in association with the University of Dundee and brought together forensic scientists from all over the world to consider the future of forensic science. Sadly fire investigation was conspicuous by its absence: there was no paper given on the subject and I appeared to be the only fire investigator present albeit one of the organisers Prof Niamh Nic Daeid helped write the Code of Practice for Fire Investigators being considered by the Forensic Regulator.

I am sometimes asked if fire investigation is a forensic science. The answer is of course yes. The word forensic simply means pertaining to the law. Fire investigation should be firmly based in the science of combustion and an understanding of how fires start, develop and spread in compartments.

What links the forensic sciences together is that they rely on the analysis of patterns. For example a DNA scientist looks at the presence of genes and draws conclusions about the group of people and individual from which those genes might have come. A fingerprint analyst looks at the conjunction of minutiae and on the basis of comparing a sample with a fingerprint taken from a suspect reaches a conclusion as to the probability of the fingerprint coming from that subject.

In a similar way fire investigators rely on damage patterns to indicate how and from where a fire has originated and spread.

The interpretation of these damage patterns has in the past relied on the mentor apprentice relationship. Teaching good observational skills is an essential part of mentoring in fire investigation and we often use the “explain what you see” maxim to assist trainees observe and understand what they see.

Whilst the science upon which many forensic sciences are based come from well-established peer-reviewed published papers and learned journals, others, may be viewed as less robust; as the scientific basis for the interpretation of the patterns is less developed and therefore less reliable. For example in fire investigation one thinks in particular of the charring of timber said to form blisters in the presence of a flammable liquid used to accelerate the growth of a fire or depth of char measurements both of which were later discredited by research.

In his address to the conference the Lord Chief Justice of England and Wales, Lord Thomas, made several points of importance to forensic scientists. The first being that the science upon which our opinions are based must be reliable. He said “If you are in the market for providing forensic science services you have no intellectual property in your research”. Fire investigators will have to demonstrate that the interpretation of the patterns to which they give significance has a scientific base in research and we cannot keep the research confidential. It has to be open to the scrutiny of others. Secondly the Lord Chief Justice made the point that forensic scientists must be reliable. Whilst the judges are the gatekeepers to the witness box, the judges will be assisted by the proper accreditation of forensic scientists.

The scientific basis for fire investigation is improving but much needs to be done. At the core of fire investigation is the scientific method explained in the article by Eva McKiernan in this issue of Forensics in Focus.

IFIC Forensics is proud of its partnership with the Fire Protection Association in delivering the first Skills for Justice accredited fire investigation course which trains practitioners to the requirements of the National Occupational Standards for fire investigation. Deon Webber describes the course in some detail later. It was clear from what the Lord Chief Justice said that the Courts will require such accreditation before allowing so-called experts to testify.

continued overleaf...



### Introduction continued.

I had an interesting conversation with Dr Sue Ballou of the National Institute of Science and Technology in the United States. She has responsibility for supervising their research into fire

investigation and we discussed the merits of the claims made by her chemists to have ownership of fire investigation and the counterclaims by those in the building research division. The reality is that fire investigation is a multidisciplinary profession which draws on the skills of firefighters, scene examiners, chemists and analysts, engineers (building services; civil; electrical; gas, mechanical; structural) and metallurgists and not least fire scientists and investigators, who in my view, put the whole thing together. Our Senior Investigator Maurice Dallaghan who is profiled in Forensics in Focus is just the sort of example of a multidisciplinary approach to fire investigation being a plumber and building services engineer before completing his Masters Degree in Fire Investigation.

Of concern to forensic scientists present at the Royal Society meeting was the judgement in 2012 by the court to exclude probability evidence. The Lord Chief Justice declined in his address to comment on this issue, the proper place for comment being in a further judgement by the Court on the subject.

This has to do with the issue of certainty. Scientists are reluctant to adopt the binary dualistic approach put by cross examining counsel who would just love an expert to answer yes or no just once in their careers.

Quantum theory for example relies on estimating the probability of the position of an electron in orbit round a nucleus. Physicists cannot say where it will be and estimate its position based on probability. What chance have we then of saying that anything is 100% certain. That is why phrases like "consistent with" etc. pepper expert reports. The Lord Chief Justice recognised this and encouraged a debate as to the use of statistical techniques and their pertinence to how experts express their opinions.

The Lord Chief Justice went on to explain that experts have a duty to deliver their evidence in a manner which can be understood by judges and juries. He suggested that each forensic science discipline should prepare a technical primer to assist Courts understand the science upon which expert opinions are rendered. It is the responsibility of judges and juries to give the appropriate weight to the expert testimony and therefore they need guidance as to the science behind the opinions given.

I am reminded of the Latin maxim for which Scottish Courts have a dying proclivity "Quis custodiet ipsos custodes?" which roughly translated is "who will keep guard over the guards?" Given the complexity of some forensic sciences and of fire investigation and fire science in particular I confess some doubt as to the ability of juries in particular, to assess the science in the manner expected by our criminal justice system. I agree strongly with the need to give them the tools to make such an assessment, but I am not sure that juries in and of themselves are capable of using those tools in preference to human assessments of how well the oral evidence in particular was delivered.

Lord Thomas stressed the importance of collecting and ensuring the continuity of evidence by safeguarding it properly. IFIC Forensics rely on our in-house computer system Praxis to document and preserve the evidence we gather and our Head of IT, Dr Barry Clark, explains the approach we have developed which we consider state of the art and market leading.

What is the paradigm shift in forensics? I think it is centred around the use of technology combined with a recognition that all the technology in the world cannot replace a skilled human being investigating the scene.

Finally many of you will have heard about the alert published by London Fire Brigade about the safety of fridges and freezers. Our Senior Investigator, David Townsend, provides the background to the alert in his article in this edition of Forensics in Focus.



## Praxis One, Our Market Leader in Case Management @ IFIC Forensics - Dr Barry Clark

Supporting a busy forensics investigation team and providing optimal service to our clients requires state-of-the-art ITC systems. We have radically transformed investigator and client support by implementing Praxis One - our in-house developed fully internet-based Case Management system. Additionally we have fault-tolerant disaster recovery systems, with real-time backup both locally and offsite to ensure we provide the best possible service to clients.

### End-to-End Support for SLA Compliance

Praxis is an end-to-end system: as soon as you call us, your enquiry is logged and the case support mechanisms automatically appoint the appropriate investigator to your case. Case monitoring only stops when the final report is issued and the case is closed.

Praxis is a contract-based system and is fully aware of our Service Level Agreement (SLA) obligations to you. If you have yet to negotiate a contract with us, Praxis implements our default contract for you, based on our company's Customer Service Charter, so that not only can we demonstrate Charter compliance on all our contracts, but provide our signature "Technical Excellence - Rapid Response" service to you.

### Timeline and Activity Tracking

In the background, Praxis implements an automatic email processing system: every inbound and outbound email is scanned for a case number, which is why we ask you always to provide this somewhere in your email. Praxis then attaches the email to the case timeline. This email monitor also acknowledges receipt of instruction emails so you can be sure your information has reached us.

Additionally, every action taken by investigators and case administrators, and all time, travel and expense details are logged, to provide you with accurate and detailed invoices. Emails can also be toggled to the action timeline, so the Operations Manager and investigators can see the overall detailed status of any case. Actions can be prioritised, and staff reminded at appropriate intervals of any pending actions, based on the action priority level.

Praxis tracks Health and Safety Risk Assessments for investigators before they go on-site and, for fire investigations, walks them through an Arson Checklist designed by Prof Lygate, to ensure a standardised and structured approach to this vital task.

Case timeline display (red line = today)

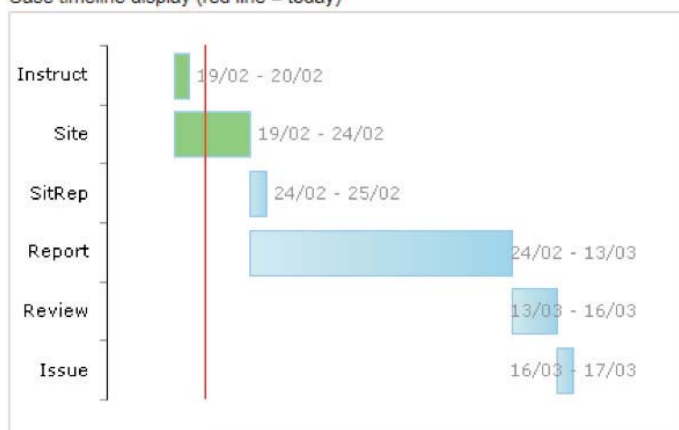


Figure 1 - Gantt chart of case timeline (dates in dd/mm format)

### Automated Service Level Agreement Tracking

The most important part of Praxis is the automated SLA management system, used to enforce contract compliance. As soon as a case is registered, the SLA monitoring engine constantly checks case progress against the contractual agreements in place. In the unlikely event of one of the steps in the investigation process nearing a deadline, investigators are alerted by text and email. Any unresolved issues are automatically escalated up to the Operations Manager before the deadlines are reached, and then director level, to ensure we meet our contracted level of service. As shown in the image, staff have a colour coded Gantt chart, which helps to visualise the workflow.

**SLA TASKS ARE PAUSED AWAITING TIME ENTRY FOR 'STIE-VISIT' or 'JOINT VISIT EXAMINATION'. Reason: 107 No access due to presence of asbestos/radiation/chemical or biohazard**

Figure 2 - Praxis SLA alert

Praxis adapts to real-world situations: for example, if we cannot visit the site immediately due to police, fire, engineering or other ongoing operations. When authorised by you, we simply tell Praxis, it stops SLA monitoring (but continues to remind us of this) until we are advised a site visit is possible. It then resets the SLA timeline and SLA monitoring restarts.

Elsewhere in Praxis, operations staff can use an aggregate of these charts to optimise use of our resources.

### Workflow Management

Praxis also facilitates workflow management techniques to streamline our operations. For example, all our reports are peer reviewed and investigators make requests through Praxis to the Peer Review Group. When a member of the group has selected to perform that task, Praxis simultaneously notifies the others that the report is being reviewed.

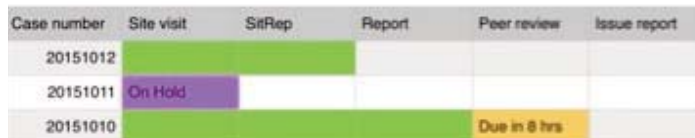


Figure 3 - typical case status dashboard. Time in business hours to deadline.

Operationally, the cases are monitored at both operations and investigator level by "traffic light" dashboards as shown above. These real-time dashboards detail the overall progress of our active cases and show national and international staff distribution so that we can optimise our response time to you.

### Monitoring never stops...

Often, additional reports on a case are required and so the SLA monitoring stops. Praxis logs requests for further reports and continues to monitor the status of these reports and the peer review process up until the report is issued.

### Client Access

We are pleased to announce a new feature on Praxis which we have begun to roll out to clients, whereby you can be given secure access to the data we hold on your cases. When investigating complex cases there can be large numbers of documents and images which you may need access to, for example when working on legal cases.

Praxis can be configured to give you access and download documents in a secure manner. Praxis maintains an audit trail of all downloads (and uploads). We are keen to extend use of this feature and we would encourage you to discuss your data access requirements with our Operations Manager, John Gow or Prof Lygate, so that we can continue to expand Praxis' capabilities, to meet and exceed your information needs.



Figure 4 - Client login to Praxis

### Charter Compliance

Finally, Praxis aggregates all of the operational data and compares it in real-time with our Customer Service Charter (for default contracts) or the performance targets specified in the appropriate contract, so that we can compare the data against the Charter targets.

### Our ITC goal - Join in the development

As well as developing Praxis as our compliance system, we have invested in all new hardware and disaster recovery systems: all of this has one goal in mind - provision of the best possible, professional service to you. Praxis One is the market leader in terms of Fire Investigation Case Management software, has many other features to optimise our business and is continually developing and expanding to meet new requirements. We encourage you to talk to us about how you might access our systems to optimise your own workflow and let us know how we can work with you to achieve this.



**Fire Protection  
Association**

## IFIC Forensics Training Collaboration with the FPA - Deon Webber

In 2014 IFIC Forensics and The Fire Protection Association (FPA) identified a joint opportunity to enhance their provision of services. The similarities between the two companies made natural bedfellows.

IFIC Forensics is an international provider of forensic investigation services including the investigation of electrical, mechanical, water, and contamination issues and in particular specialise in fire and explosion investigation on land and at sea.

The FPA is the UK's National Fire safety Organisation. Formed in 1946, it is recognised as an independent and authoritative source of information and advice relating to all aspects of fire safety, risk management and loss prevention. In addition to a range of technical consultancy services, the FPA offers a wide range of training courses and qualifications in fire and fire safety related subjects.

This strategic alliance is seen as an opportunity to strengthen and enhance the skills and knowledge available to support clients old and new.

In mid-2014, the FPA joined with IFIC Forensics in submitting a tender to the Welsh Fire and Rescue Services (FRS) for a contract to provide fire investigation training that would lead to the award of the Skills for Justice Level-5 Certificate in Fire Investigation. Despite fierce competition, the contract to supply fire investigation training to the North and South Wales FRS was awarded to the FPA with technical input being designed and delivered by IFIC Forensics.

The two week theoretical and practical training course is aimed at experienced fire officers with the responsibility for the investigation of Level 2 (more complex) and Level 3 (multi-

agency) fires and explosions. Already the course has seen delegates from England and Scotland in addition to those from the Welsh FRS, with one delegate travelling from Singapore to attend the course.

The course takes place using classroom facilities at the Fire Service College in Moreton in Marsh, Gloucestershire, whilst the practical elements are delivered at the FPA's own purpose-built fire testing and training laboratory.

The course objectives are mapped against the National Occupational Standards in Fire Investigation upon which the level 5 award is based. By the end of the course learners will be equipped to:

- Prepare to investigate an incident involving fire and/or explosion
- Investigate an incident involving fire and/or explosion
- Report on the investigation of incidents involving fire and/or explosion
- Present evidence related to fire investigations in Court and at other hearings

Delegates will attain knowledge about the principles of investigation of fire and or explosion. They will understand the legal and organisational requirements and be able to determine the nature and scope of investigations in order to set up working arrangements. Delegates will have the required knowledge about the types of reports that can be completed depending on the reason for the investigation, whether it be for use in the criminal, civil or coroner's court. Delegates will develop the range of skills required to provide and present evidence in Court or other forms of hearing.



Delegates investigating real fire scenes



## Delegates investigating real fire scenes



### Subjects covered include:

Why do we investigate fires?  
The scientific method  
Multi agency approaches  
Legislation  
Safety at fire investigations  
Determining origin  
Ignition sources

Fire behaviour and dynamics  
Photography at fire scenes  
Explosions  
Building construction  
Practical examinations  
Gathering information from witnesses

Fire scene management  
Investigating Arson  
Presenting evidence in Court  
Fire and electricity  
Fatal fires  
Recovery of evidence  
Vehicle fires

The course is run by some of IFIC Forensics most experienced and practicing investigative staff who have gained wide experience in fire and explosion investigation across both the public and private sector. All have a background in designing and delivering training in previous roles. A number of guest speakers provide input on fire science, the electrical causes of fires and courtroom procedures

Theoretical input is delivered in classrooms featuring smart board audio visual equipment and wi-fi and assessments are submitted online using the FPA's learning academy.

The course gives delegates the opportunity to investigate a number of real vehicle and building fire scenarios. Unlike other fire investigation courses, the room burn facilities at the FPA laboratory are purpose built structures which can be adapted to represent a range of scenarios such as domestic bedrooms, kitchens, lounges and commercial offices to present some of the most realistic investigator training around. For added realism the rooms are fitted with their own individual electrical distribution, circuit protection, live circuits and energised appliances. This provides the learners with a great opportunity to put skills and knowledge to the test in the practical exercises.

The burns facilities are located in a two storey structure which is situated inside one of the laboratory's large facilities meaning that scene examinations can continue and are not affected by weather conditions

The course culminates with delegates investigating one of a number of real fires, burned specifically for the course. The scenarios include the provision of witnesses and tools are provided for excavation and reconstruction.

After recording the scene and gathering all required information, the delegates are required to construct their own forensic report which is submitted and the findings presented in a mock Court scenario.

Initial feedback for the course has been good and more courses are planned for later in 2015 and beyond. After receiving some enquiries from within the insurance sector, work is underway to explore the possibility of providing training to the insurance and loss adjusting industry, the aim being to improve knowledge of investigative techniques and practices.

**For more information about courses that the FPA offers or to book onto a course please call the FPA on 01608 812 500 or email to [training@thefpa.co.uk](mailto:training@thefpa.co.uk)**



Vehicle burns used on the course



Initiation of two of the fire scenarios used on the course

# Domestic Fridges and Freezers - David Townsend



Modern fridge/freezers develop and become more sophisticated but in a highly competitive market they must be made at a cost effective price. Safety issues arise in development and we trust they are addressed at that stage. But problems arise after manufacture that often present a trend to the investigation community.

Actions are taken and the problem potentially resolved by the replacement or redesign of a component part. One problem that has not been resolved is the combustibility of the contents and structure of appliances - fridge/freezers are particular hazardous in this regard.

In March 2015, the London Fire Brigade (LFB) published a hard-hitting article on the dangers of fridge/freezers - reporting more than one such fire per week in London, and seven deaths and 71 serious injuries since 2010. LFB has been lobbying for more fire resistance in fridge/freezers for three and a half years.

Fridges/freezers contain large amounts of plastic and highly flammable insulation, which, if ignited, causes large, rapidly developing fires that give off highly toxic gases.

The doors and side panels of most fridges and freezers are usually metal-skinned but many still use flammable plastic backings - offering no protection to the highly flammable insulation if a fire starts.

LFB Deputy Commissioner Rita Dexter stated:

***"Every home has a fridge or freezer and the chances are it will be plugged in and working safely for years but it is no exaggeration to say that they are potentially the most dangerous household appliances if they are involved in a fire.***

***They contain large amounts of highly flammable foam insulation, often only protected by a thin plastic covering. This can be a recipe for disaster if a fault occurs or if a fire spreads from somewhere else to the fridge or freezer. They are also one of the few electrical items in your home to be always left on and these fires pose an even greater risk if they start when people are sleeping.***

***Putting a simple non-combustible or fire retardant covering at the back of appliances is a relatively simple change that manufacturers can make and one we believe would reduce the number of injuries, and potentially deaths, caused by fires involving fridges and freezers."***

For the fire investigator they create another problem in that they present a large and disproportionate fire load. When ignited by a smaller ignition source the resulting damage can mask the original source; presenting an almost irresistible impression that the appliance was the origin of the fire. Careful consideration must be given to fire damage patterns and it is essential that the scene is investigated by those competent and most familiar with the dynamics of fire and fire spread. It is the accurate interpretation of these patterns that will support any origin hypothesis, without which cause cannot be reliably determined.

In our experience, the seriousness of the incident can be exacerbated by the absence of working smoke detection and structural redesign where safety is sacrificed for aesthetics - putting lives and businesses at risk.

This is at the heart of all fire trend issues whether at home or the workplace: Unsafe conditions exist undetected until the "Perfect Storm" scenario arises and a series of failures, human, mechanical or electrical coincide and a fire occurs.

It is essential that responsible persons in the workplace ensure fire risk assessments are maintained and kept up-to-date, as this is key in reducing fire risk, loss of business and eventual business failure.

LFB is calling for the backs of fridge/freezers to be metal to protect the insulation, but this assumes fire attack from what has been to date the most common area of fire origin within these appliances; the motor, switchgear and electronic components.

Fire however can enter these appliances from other sources such as the door insulation and, in large "American" style units, the ice and water dispensing area at the front. Users often store flammable items on the top of tall appliances.

IFIC Forensics have initiated and contributed to consumer goods safety issues and wholeheartedly support LFB in their current campaign.

Unfortunately given the financial implications, there is little or no prospect for the wider use of reduced combustibility plastics in the domestic appliance market. Awareness of the vulnerability and exposure of the plastics and the additional fire loading are key factors in our site and sample examinations.



This American-style fridge/freezer appeared to be the origin of a fire. Our detailed investigation however revealed the fire originated at a small lamp nearby. The fire entered the appliance via the plastic fascia and ice funnel. Once the fire had a hold inside, it had access to the considerable internal plastic formwork and contents and was vented by destroying the rubber door seals. The fire destroyed the whole house including structural collapse. The single occupant and mother of 12 had no insurance cover for house or contents.

**Loss adjusters** should consider that a fridge/freezer AND items near to it may be worthy of a full forensic examination and should endeavour to photograph and preserve ALL items in the room.

**Documentation** relating to kitchen appliances is most often stored in the kitchen. If these documents have been stored flat in a drawer they may survive even a severe fire and be found in the debris.

# Preparing and Planning for Investigations

## - Eva McKiernan

Preparing and planning is one of the most important steps in ensuring the successful outcome of any investigation. This involves being guided by the first two steps in the scientific method:

### Step 1: Recognise the need (Identify the problem)

### Step 2: Define the problem

### Step 1: Recognise the need (Identify the problem)

Receipt of instruction on any case is an important time to gather information relating the investigation to be undertaken. IFIC Forensics undertake numerous different types of investigations; fire and explosion, escape of water and chemical spills, environmental, engineering, marine, product liability investigations. Instructions can come from a variety of sources with our client base including insurers, loss adjusters, solicitors, commercial interests, individual Fire and Police forces.

Different clients have different needs and instruction can relate to origin and cause determination, assessment of policy warranties, determination of liability, compliance with regulation. Communication with the client is key at the instruction stage and throughout the claims process, to understand the client's needs and the task to be accomplished.

Information to be provided on instruction should include as a minimum:

- Client name and reference numbers
- Incident details; address, date and time, confirmation of what has occurred
- Policyholder/access information
- Insurance cover and applicable warranties (if require consideration)

### Step 2: Define the problem

At this stage the investigator needs to review the information received and make a tentative plan on how to proceed with the investigation.

Consideration should be given to the following:

- **Right of entry to the incident location should be established.**

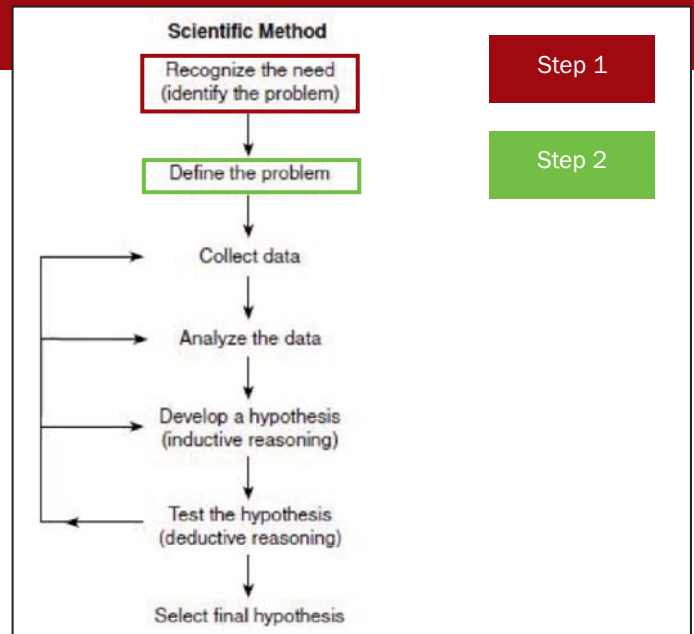
Is an investigation in progress which takes primacy e.g. by Police, Fire Service or other parties e.g. HSE or other forensic investigators.

- **How to best preserve and protect the scene and any evidence prior to the commencement of the examination.**

This may involve liaison with the client/adjuster/policyholder to implement any necessary arrangements as soon as possible.

- **A needs assessment for tools, equipment and personnel should be undertaken.**

Tools: e.g. Escape of water investigations may require pressure testing equipment for water systems, excavation at fire scenes may require hand tools e.g. shovels, trowels, sieves for separation of debris



Equipment: Some scenes may necessitate access at heights which requires specialist equipment e.g. aerial work platform



Personnel: Complex scenes may require the attendance of a team of investigators which include specialist consultants e.g. electrical consultants, metallurgical consultants

- **Safety of personnel on site**

No scene investigation is worth risking your life or your safety. IFIC Forensics assesses and documents the safety aspects for every scene inspection through our use of a Scene Risk Assessment form. These aspects include, but are not limited to, building construction, isolation of building services, hazardous materials, manual handling and weather. All IFIC Forensics personnel have received training on the identification of asbestos and the procedures to follow when any such material is detected on site.

- **Media reporting**

Internet research can be a key tool to provide information on any incident prior to attending the scene.

Photographs and videos can show extent of the fire or damage, fire fighting activities and even visual information on the structure prior to the fire.

News reports can help to identify witnesses to the incident and information on investigations by other authorities.

Further enquiries are always required to verify information in media reports which may not always be accurate.

Once the above aspects have been considered and an initial plan has been made for how to proceed with the investigation all that remains is for the investigator to get on site and progress with Step 3 of the Scientific Method; Collecting the Data.





## Investigator Profile: Maurice Dallaghan

My first step into the working world started in 1988 when I embarked on a 4 year plumbing apprenticeship. The company who sponsored me for the duration of my apprenticeship specialised mainly in the commercial and industrial sectors. The work involved the installation of boilers (oil and gas fired), air conditioning and ventilation systems, steam lines and all types of pipework including copper, stainless and mild steel, cast iron etc.

I gained extensive experience with most methods of joining pipework including welding (oxy acetylene/electric arc/TIG), brazing, soldering, compression etc. I also gained experience with the cutting and grinding (abrasive cutting) of metal.

The practical experience gained during my apprenticeship and in the years working as a qualified plumber gave me an excellent understanding into the problems that can arise due to substandard workmanship. This helped me to recognise the differences between good and poor workmanship. Also, because of my welding and metal grinding experience I gained an understanding into the safety aspects and dangers involved during the various stages of "hot works".

After working as a qualified plumber for three years I decided it was time for a change. I commenced a degree in Building Services Engineering at UMIST (University of Manchester) and qualified with Honours in the year 2000.

From 2000 until 2004 I worked as a Senior Engineer for one of the largest consulting engineering firms in the country. The work included the design and supervision of installation of heating, ventilation, medical gases, air-conditioning (HVAC), fire suppression and water systems for both new and refurbished buildings.

In 2004, I was appointed Engineering Director of a mechanical services contracting company based in Dublin. My duties included design and management of oil, gas, solid fuel, boiler, pipework and heating system installations.

In 2006, I established my own mechanical building services contracting firm. I was directly responsible for the mechanical services design and supervision of installation on projects from concept stage to final commissioning and handover. I was a Registered Gas Installer (RGI) and I also obtained the grade of Chartered Engineer.

I started working for IFIC Forensics in 2010. Following an interesting discussion with Professor Lygate I decided to "up skill" to the field of fire investigation. I commenced an MSc in Fire Investigation at The University of Central Lancashire in 2011 and qualified in 2013.

I have been involved with some very interesting cases while working with IFIC Forensics over the last number of years. One case involved the "policy holder" spraying a coffee and water mix to the underside of the ceiling in an attempt to replicate mould growth due to a purported escape of water. A sample of the residue was sent to the lab and even "a barista" would have been proud.

Another case involved the "policyholder" having a miniature bonfire with all of their old designer clothing. The clothing had been placed in the middle of the room and ignited. The fire barely spread from that location and in the absence of any viable sources of ignition the most likely cause was determined as "deliberate". The policyholders wardrobe needed to be restocked but not at the expense of the insurance company.

My practical, academic and professional experience has given me an excellent platform to investigate incidents involving mechanical failures, escapes of fluids and fires in various different environments.

This experience helps me assist the insurance industry and other clients with their claims providing expert opinion and reports into causation and any potential liabilities that may exist.



### INSTRUCT IFIC FORENSICS TODAY:

**UK:** Tel: Free phone 0808 235 9767 Email: [instructus@ific.co.uk](mailto:instructus@ific.co.uk)

**Ireland:** Tel: +353 (0)1686 9318

Post: Rushbrook House, 220 Ayr Road, Glasgow G77 6DR

Website: [www.ific.co.uk](http://www.ific.co.uk)