Public Inquiries after Disaster
A Thematic Review of the Research

Lucy Easthope LLB MSc
On Behalf of the Cabinet Office Emergency Planning College

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Executive Summary

"Those who cannot learn from history are condemned to repeat it"
(Weir, 1999, P.248)

It is commonplace to hear delegates at a conference, students, the media and many others wonder why lessons are not learned from disasters.
They may also attempt to extrapolate broad learning points such as the need for "better communications" or "planning".

There is a wealth of research available which examines both the key themes of public inquiries and also the way in which the lessons of inquiries can be learned by other organisations. Crucially much of this research also identifies key barriers to learning.
This is a vital element of practicing effective emergency management. The overriding aim of this research is to provide material that is of use to today's emergency planners in their everyday work.

This review was completed using an iterative approach that examined a wide range of literature. It provides a summary of the systematic weakness and failures that have been identified by public inquiries into disasters since 1985, and also draws on commentary from a range of sources to identify barriers that have prevented organisations from "actively learning" from these recommendations. Suggested techniques for ensuring that organisations learn lessons from their own near misses and historical examples of disasters have also been reviewed.

Public inquiries have been identified as "the most valuable source of information to help prevent recurrence of disasters" (Toft and Reynolds, 1999, P.45) but Emergency Planners must also recognise that the capture and publication of the knowledge acquired in a public inquiry is only one step in the learning process.
It is important to look beyond the one organisation/s featured in the inquiry report e.g. although the disaster may refer to a rail crash many of the lessons could be applicable to any organisation.
By analysing the themes that have been identified in this review, emergency planners will be able to see the way in which "lessons learned" have been incorporated into current civil protection arrangements and shaped the design of the Civil Contingencies Act 2004.

This review highlights key themes within inquiry reports that have resonance for a all organisations. By considering the implications of these themes and crucially remaining alert to the potential barriers for learning from them those working in the field of civil protection have the opportunity to examine ways in which they can enhance resilience.

Notes on Methodology

The Limitations of this Review

There are a range of inquiry reports that have some relevance to this type of discussion, however in the interests of brevity the main focus has been limited to "Judicial Public Inquiries after disasters since 1985" (as defined by the Emergency Planning College Terms of Reference).
Health and Safety inquiries have been omitted except where they have direct links to the other elements of the disaster inquiry. As discussed below Rail, Air and Shipping disasters have their own systems of mandatory inquiry. Emergency Planners may also want to direct their attention towards these (a large number are held in the EPC library) as their findings and lessons learned can be extremely valuable.

In recent years inquiries have investigated public health issues, medical negligence, child protection issues, financial matters and the death of a government scientist; Emergency Planners should not restrict their own studies to disaster inquiries but will also find many learning points within inquiries examining agency responses, such as those inquiring into the deaths of Stephen Lawrence, Victoria Climbie and the patients of Harold Shipman.

Reference is also made to a number of recent disasters where inquiries have not been held, or have not been held using a Judicial Public Inquiry and these are included in the appendix.

Guidance for using this Review

This guidance is designed to provide links and introductions to the many sources of information available on public inquiries. Due to the brevity of this review it can only provide a summary of the key themes. The bibliography should provide all of the details for follow up study.

Methodology

The requirements of this review are threefold and are provided by the Emergency Planning College:

1) Identify key public inquiry reports for review which have taken place after UK disasters.
(Focus on those conducted by Judges, rather than HSE or Royal Commission reports.)

2) Review the existence and extent of previous work in this area.

3) Conduct literature review on substantive issues and barriers to learning.

To obtain this material the library at the Emergency Planning College was used extensively. Journal searching was undertaken using a variety of databases including Westlaw and Athens.

Two semi structured interviews were also conducted with subject matter experts Dr Brian Toft and Eve Coles.

This review was designed to a brief and accessible summary that would provide indicators for further study. It will be distributed to delegates attending the Public Inquiries course at the Emergency Planning College and will be supported by teaching sessions on this issue.

I) Summary of Key Themes

1. Recurrent themes within the inquiry reports: Failings
This is a summary of the analysis provided in Chapter III. The material gathered there was analysed by the author for recurrent themes and these included:

1	The lack of Integrated Emergency Management
2	Communication Failings
3	Failures relating to operational arrangements/ Incident Management/ Command and Control/ Leadership
4	"Safety Culture" and safety failings before, during and after the disaster Provision of First Aid Failings/ Lack of Safety Equipment
5	Event Management, Crowd Safety Management
6	The need for improved care and management of all people including responders Issues with the Disaster Victim Identification process
7	The need for Risk Assessment: before and during the disaster
8	Training Needs: Either specific to task e.g. rail signalling or training in
9	The need for improved emergency planning/ In some cases plans did not exist at all
10	"Weakness" within legislation
NB:	When scrutinising plans, training and near misses it is also essential to remember a key finding that analysis of inquiry recommendations has shown that only around 20% of recommendations are technical while up to 80% are concerned with social, administrative or managerial issues.

As you will be aware, all of these issues are not unfamiliar and there have been many attempts to address them.
After disaster, there have been changes to Health and Safety and Event Management legislation.
More recently the Civil Contingencies Act 2004 set out the principles of Integrated Emergency Management and placed the requirement for improved and effective planning, including risk assessment, on a statutory footing. It can be a useful

exercise to link the themes from the inquiry reports with the way in which this Act has been drafted.

The care and management of people affected by disaster is now addressed through various guidance documents including “Responding to Emergencies” and “Humanitarian Assistance in Emergencies”. When many of these inquiry reports were written, the police had not yet established their Family Liaison system which now plays a vital role after disaster and there are also formal arrangements in place to manage the identification process.

All of this material is available as pdfs through www.ukresilience.info.

2. Recurrent themes within the literature: Barriers to learning from Inquiry Reports

This is a summary of the analysis provided in Chapter IV. The material gathered there was analysed by the author for recurrent themes. This outlines factors that may prevent both organisations and individuals from “buying in” to the findings of an inquiry, or may weaken the inquiry’s recommendations. These issues have been repeatedly raised in the literature, but of course, not all of them would have easy solutions. Less tangible concerns such as political context can be very hard to address and discord will often follow disaster.
Also, the implications of these themes reach much wider than looking to improve emergency plans/ planning in one area but have ramifications for many different projects e.g. a “Recovery Working Group” that has been established after disaster could utilise the issues of multiple realities, apportionment of blame, risk perception etc in their own work.

1	Problems with the Recommendations e.g.: • Influenced by hindsight, • They may be too broad or too narrow • They may not have taken into account the wider picture • They do not necessarily need to be acted upon This is also linked to the issue of Terms of Reference being either too broad or too narrow.
2	Having to strike the right balance between the requirements of different parties
3	“Hindsight Bias”-being wise after the event
4	The nature of the organisation and its safety culture/ willingness to learn lessons
5	Context e.g. historical, political and social factors

6	Failure to recognise disasters as “predictable” or “preventable”
7	“Multiple Realities” of the different parties Risk perception Not being able to make sense of events
8	The apportionment of blame The creation of “Heroes and Villains” The belief that the purpose of an inquiry is to apportion blame and to identify scapegoats. The process may also be seen as providing a protective screen protagonists who can legitimately refuse to comment until the inquiry is comp
9	Impartiality Bias e.g. because of the political context, the judicial appointment etc
10	Complexity and Structure of the Inquiry Process • Way in which the Inquiry was established • The Inquiry’s status as “quasi-legal” • Lack of clarity over the purpose of the Inquiry • Terms of Reference: too broad or too narrow

II) Context

It is important to place the public inquiry in a wider legal context and also introduce some of the factors that have made the public inquiries process a controversial one.

Legislative Processes and Definitions
There are diverse systems in place to inquire into the causes of death and disaster in the United Kingdom. These may include:

1) Coroner's Inquests
The Coroner will inquire into any sudden, unnatural or violent death, and the Office of the Coroner dates back to medieval times. The Coroner's Inquest will focus on the identity of the deceased and when, where and how the death happened. The Coroner plays a pivotal role in the aftermath of disaster. The Office of the Coroner is undergoing substantial change at the moment and the different purposes of an Inquest and an Inquiry are often confused. Further information on the role of the Coroner can be found at www.dca.gov.uk and www.coroner.org.uk (the website of the Coroner's Society) and by reading Wells, C. (2005) *Negotiating Tragedy: Law and Disasters*, Sweet and Maxwell.

2) Criminal and Civil Cases
After many disasters we have seen years of litigation. These may be heard before a criminal court such as charges relating to HSE offences and corporate manslaughter. Civil cases may also be brought e.g. between an employee and their employer, a bereaved family and the company involved, in an effort to obtain damages or the release of information.

3) Inquiries in their various forms-see below

After disasters, one of the accusations levelled at the legal process is that it is prone to duplication and may expose those affected by the disaster to a "secondary disaster" or "legal aftermath."

Historical Context
The British Legal framework is sometimes challenged as not being fit for purpose based on factors such as its longevity, and the arrangements for public inquiries are no different; Elliott asks "Is an instrument born of the late nineteenth century suited to the demands of the early twenty-first century" (Elliott and McGuiness, 2002, P.14)

After disaster there was an assumption that there was a system in place to simply "activate" a public inquiry. However prior to 2005 there was no one system as such.

Definition of a Public Inquiry
One of the most common themes within the reviews in this area has been a discussion of the lack of clarity over what a "public inquiry" actually is;

Toft and Reynolds state that Inquiries have developed in a rather piecemeal way (Toft and Reynolds, 2005, P.42)

"Within the United Kingdom, the public inquiry is the generic term used to describe mechanisms for investigating high profile disastrous incidents. Inquiries may be triggered by high magnitude, low probability events, although factors including the degree of media coverage, multiple fatalities, unknown causes, suspicion of a breakdown in safety systems and the need for public reassurance may also be crucial in determining whether or not a public inquiry is initiated or not"
(Hutter, 1992; Wells, 1995 in Elliott and McGuiness, 2002, P.14)

Establishing a Public Inquiry
Prior to the Inquiries Act 2005 there were three main ways that a public inquiry could be established:

1) Some statutes contain arrangements for mandatory technical inquiries to be established after a disaster e.g. Air disasters can be inquired into using the Civil Aviation (Investigation of Accidents) Regulations 1993 which states that "the fundamental purpose of investigating accidents shall be determine the circumstances and causes of the accident with a view to the preservation of life and the avoidance of accidents in the future."
   The Inquiry into the sinking of the Herald of Free Enterprise was held under section 55 of the Merchant Shipping Act 1970 which allows the ordering of a formal investigation.
2) Ad hoc Inquiries were set up where there was no specific provision for accident investigation. A government minister such as the Home Secretary would appoint a judge to conduct an Inquiry as was the case with the Hillsborough Disaster.
3) The final way in which Inquiries could be set up was using the Tribunals of Inquiry Act 1921. These carry great weight and require the authorisation of both Houses of Parliament to approve that the matter is 'of urgent public importance'. They are always chaired by a senior judge and exercise High Court powers.

A government minister would appoint an independent investigator, usually a senior judge, to distance the government from the mechanics of the process and to demonstrate impartiality.

Examples of Types of Inquiry

Bradford	Judicial, General, High Court Judge
Herald of Free Enterprise	Judicial, Statutory, High Court Judge
Piper Alpha	Technical AND Judicial
King's Cross	Judicial, Statutory, Queen's Counsel
Hillsborough	Judicial, General, Court of Appeal Judge
Clapham	Judicial, Statutory, High Court Judge
Marchioness	Technical AND Judicial
Dunblane	1921 Tribunal of Inquiry

As the inquiry may be set up under a variety of auspices, the proceedings and Terms of Reference can vary hugely.

Proceedings within a Public Inquiry
Public Inquiry is a term used to describe a variety of structures to enquire into disasters using either judicial or technical processes. The judicial inquiries which have formed the focus of this review are usually high profile, held in public and will be chaired by a Judge or a Senior Queen's Counsel. They are separate from other criminal and civil proceedings:

"There is no accused and, therefore, no prosecution or defence; their findings being drawn from a wide range of written and oral evidence."
(Scraton,2000, P.118)

This is not a trial, there is no claim or counter claim, or burden of proof although there can be allocation of blame which may serve to inflame proceedings. The public inquiry uses an inquisitorial approach as opposed to an adversarial one (an adversarial approach is used in courts during criminal and civil cases.) Sometimes this structure has been described as "quasi-legal" and an accusation that has been levelled at public inquiries is that it does try to apportion blame implicitly.

"The central aim of the inquiry is the collection of evidence and fact finding."
(Peay,1996 and Bradley and Ewing, 1998 in Elliott and McGuiness, 2002, P.14)

Inquiries also provide recommendations for future practice.

Terms of Reference
Before the inquiry commences terms of reference covering the parameters of discussion and the scope for reform are normally determined, but these may be extremely broad. The terms of reference for the Piper Alpha disaster were simply "An Inquiry to establish the circumstances of the accident and its cause."
Conversely the terms of reference can also be narrow and therefore are unable to place the disaster in a wider context, such as political, economic and social factors at the time. This can lead to accusations that the final inquiry report is superficial.

The Need for a Public Inquiry
A public inquiry can broadly be seen as a way of answering the need to firstly establish causes of a disaster and secondly recommend preventative measures for the future. Lessons learned can be identified and actions can be taken to improve safety.

For the people affected by disaster, a public inquiry is also an important part of accepting and acknowledging that the disaster has occurred. This process is often seen as fundamental to recovery (and this can be seen as having parallels with the Truth and Reconciliation Committees held after genocides etc.)

Recommendations
The inquiry often makes many recommendations but there is no requirement for a government to act on the findings of a public inquiry. Often recommendations from different inquiries over many years appear depressingly similar and the obvious explanation for this would be that lessons are repeatedly not learned. Reviewers have also pointed out that recommendations may appear very similar because often the Terms of Reference of the inquiry are also similar.

Inquiries Act 2005
The Inquiries Act 2005 is an attempt to modernise the law on statutory inquiries and address many of the issues raised above.
It will give Public Inquires a statutory framework, replaces over 30 pieces of previous legislation and codifies past practice.
The Acts states that "A Minister may cause an inquiry to be held under this Act in relation to a case where it appears to him that - (a) particular events have caused, or are capable of causing, public concern, or (b) there is public concern that particular events may have occurred."

It will be used for "any inquiry set up by the Government to look into a past event, or series of events, that has caused - or has been capable of causing - public concern, for example, inquiries like the Stephen Lawrence Inquiry, or the Bloody Sunday Inquiry. These sorts of inquiries have generally been triggered by events - such as a death, an accident or an alleged criminal act - but have tended to focus not on the events themselves but on the possible failures in systems and services that allowed them to happen." (DCA, 2007 - See website link below.)

A set of Frequently Asked Questions about this Act is available at
http://www.dca.gov.uk/legist/faq.htm

Criticism of the Inquiries Act 2005
The Inquiries Act 2005 has not been without its critics.
In a joint statement by a number of Human Rights Organisations and The Law Society (2005) it is stated that:
"The fundamental problem contained in the Inquiries Bill is its shift in emphasis towards inquiries established and largely controlled by government Ministers. This shift is achieved by the repeal of the Tribunals of Inquiry (Evidence) Act 1921 and the terms of several of the Bill's clauses. These clauses grant broad powers to the Minister establishing an inquiry on issues such as the setting of the terms of reference, restrictions on funding for an inquiry, suspension or termination of an inquiry, restrictions on public access to inquiry proceedings and to evidence submitted to an inquiry, and restrictions on public access to the final report of an inquiry. The Bill does not grant the independence to inquiry chairs and panels that has made their role so crucial in examining issues, particularly where public confidence has been undermined."

Political Context
Both the inquiry and the disaster will often have a political context:
"Some of the people closely involved with inquiries…have argued that such inquiries are not always the formalised, objective, truth searching bodies of the common public perception. Public Inquiries have no laid down formal procedures, are adversarial in nature, have no power to require organisations or individuals to carry out their recommendations, and may sometimes apparently have hidden political agendas to address"
(Toft and Reynolds, 2005, P.127)

"Public Inquiries, by their very nature, are official responses to controversial cases. Inevitably, they are surrounded by allegations and counter-allegations raising serious matters of responsibility and liability."

(Scraton, 2000, P.118)

The disaster itself may also have a political and historical context such as the crowd management issues that provided a backdrop to the Hillsborough disaster and the privatisation of the railways which was cited as a causative factor in the Paddington and Southall rail disasters.

Apportionment of Blame
Under the Inquiries Act 2005, as with the previous arrangements in this area, there will still be no apportionment of either civil or criminal liability. This is because there are other arrangements under British Law for these decisions to be made. However this will not prevent similar controversies to those that have arisen in the past e.g. anger from families that inquiries have not delivered on their original promises.

"Heroes and Villains"
After disaster, the various parties may be treated in very different ways;
"A public discourse of shock, sympathy, blame and accountability tends to be orchestrated through the media and a well-rehearsed narrative is imported which polarises the 'heroes' and the 'villains', regardless of the appropriateness of these constructions. This not only has implications for the emotional healing processes of survivors but means that the issues surrounding these disasters and their consequences persist for the bereaved."
(Eyre, 1998, P.2)

The Role of Judges in Public Inquiries
The role of judges in public inquiries has been controversial. Sometimes governments have been accused of playing safe with their choices;
"Cullen was chosen to head this inquiry [Ladbroke Grove] because he is a safe bet. He is pragmatic, business-friendly and above all he can be trusted not to unsettle the agenda that has already been set by government."
(Whyte, 1999, P.1)

Lord Cullen was again criticised after the inquiry into the Dunblane shootings as he allowed the Police to investigate their own actions with regard to awarding a licence to Thomas Hamilton. He was also criticised for allowing some material to be locked away from public view under a 100 year seal. After Piper Alpha he was accused of accepting the evidence of the oil companies on the shape of the safety regime that was to regulate them.

Elliott and McGuinness,2002, explore a number of reasons why judges may not be ideal and these include an idealised view of the skills of judges, they may be accused of bias due to their social background and their "neutrality" may be questioned. They also examine issues around the selection and training of the appropriate judges.

Resourcing Inquiries
Inquiries can last several months and even years and may involve the appearance of hundreds of witnesses and the submission of thousands of documents.

Case Study One: Lord Taylor's Inquiry into the Hillsborough Disaster
174 main witnesses

"Evidence" Phone Lines were opened which took 3000 calls in 6 days
Interested parties were divided into nine categories (e.g. Football Assoc, Council, Police, Bereaved, Injured)

3776 Statements and 1550 Letters

Case Study Two: Mr Fennell QC's Inquiry into the King's Cross Fire

The Inquiry lasted 91 days

150 witnesses were cross examined

80,000 documents were studied.

Case Study Three: Lord Saville's Inquiry into Bloody Sunday

Estimated cost of £155 million

921 witnesses have given oral evidence

1555 statements have been read

The Inquiries Act 2005 has been designed to address these issues but resources are still used as a reason against holding inquiries. This has appeared most recently in media coverage discussing the case against holding an inquiry into the terrorist bombings on July 7th 2005 (see discussion at http://news.bbc.co.uk/1/hi/uk/5370666.stm) and previously critics have suggested that money spent on inquiries would be better spent on other measures such as installing smoke alarms. Those affected by disasters have often reacted angrily to these statements; they agree that spending needs to be controlled but also state that an inquiry was "essential" and their only way to find out the truth (Wright, 2003.)

Implementation of Recommendations

"The perceived strength of a public inquiry is that its recommendations carry the weight of a costly and in-depth investigation drawing on a mass of unsolicited as well as requested evidence and opinion. Further, findings are derived in rigorous cross-examination of key witnesses by lawyers representing the interests of all parties. Seen as 'independent' and commissioned by government, the assumption is that their recommendations will be treated with respect and implemented.'
(Scraton, 2000, P.118)

It is a depressing fact that not all recommendations made at inquiries are implemented with potentially catastrophic consequences; for example it has been argued that had the recommendations of the Popplewell report been introduced, the Hillsborough disaster may never have happened (see Wells, 1995, P.71)

Lord Howe provides a commentary of this issue and asks how can we ensure that the lessons of the inquiry are actually put into practice. One suggestion was that on the

anniversary of the publication of the inquiry report there should be an audit presented on the progress made towards implementing all of the recommendations.
The Bichard Inquiry, set up to examine the actions of police and other agencies prior to the murder of two school girls in Soham provides a modern model for inquiries which clearly sets out both the recommendations and also names the agency that is responsible for implementing them. The inquiry was also re-convened at a later day to analyse progress of implementing the recommendations. This inquiry report is available at: http://www.homeoffice.gov.uk/pdf/bichard_report.pdf

The Ladbroke Grove Rail Inquiry Report (Initial Action Plan November 2001) also provides an example for emergency planners, which demonstrates the way in which recommendations can be allocated to individuals and given time scales. This can be viewed at http://www.rail.reg.gov.uk/server/show/nav.1204.

Better utilisation of Inquiry Information
Toft and Reynolds argue that public inquiries are likely to remain the most prominent form of disaster inquiry and it is essential that the best use is made of any recommendations. (Toft and Reynolds, 2005, P.127)

Disasters without Inquiries:
"Major disasters are almost inevitably followed by some sort of Inquiry"
(Wells, 1995, P.71)
However as recent events have shown this does not always need to be the kind of public inquiry that has been discussed most frequently in this review. Following the Indian Ocean Tsunami in December 2004 and the London terrorist attacks in July 2005 a different approach has been adopted where research and "lessons learned" have been gathered and reported upon.

July 7th and calls for a public inquiry
"The judge-driven public inquiry is a part of English legal mythology. It is the panacea for all ills. Only do what an English judge, after hearing evidence over a period of weeks or months, tells us to do, and democracy and freedom will be saved forever. Unfortunately, it does not always work like that."
(Matthews, 1999, P.418)

Some survivors and bereaved have called for a public inquiry into the terrorist attacks on July 7th 2005, and it does appear that this would be something that the Inquiries Act 2005 could be used for.

"We wanted an impartial, honest inquiry chaired by someone independent of government and the Security Services. An inquiry which had the power to cross-examine witnesses and compel evidence, that could talk to all the stakeholders and agencies involved in 7/7 and make recommendations. Above all, it would reassure the public that lessons had been learnt that we would all be safer in the future."
(North, 2007, P.3)

Joint Inquiry into the Grayrigg and Potters Barr train disasters
There have also been calls for a Public Inquiry into two recent train disasters:

“A High Court judge has called for an Inquiry into possible links between last Friday’s fatal train crash in Cumbria and the rail disaster at Potters Bar five years ago.
Mr Justice Sullivan assigned to conduct the inquest into the seven deaths at Potters Bar, said yesterday that similarities between the crashes could not be ignored.” (Webster, 2007, P.23)

III) Key Weaknesses and Repeated Failures highlighted by Inquiries

"A desire to learn lessons from disasters appears to be central
to the public inquiry process"
(Elliott and McGuiness, 2002, P.16)

In the first tables below, are the key issues raised in both the main body of the inquiry reports and within the recommendations. The author has analysed these for repetition and similarities so that cogent themes can be highlighted.

The second table provides a retrospective analysis; examining literature that commented upon the disaster, or changes in legislation that occurred shortly afterwards. Again the key themes can be linked together and reinforce the findings of the first analysis.

As an introduction to the idea of repeated failings after disaster, it can be useful to be mindful of two overarching principles, identified by authors such as Pidgeon and Turner and Toft and Reynolds:

1) Disasters are socio-technical in nature as opposed to solely or even mainly, technical. In the Public Inquiry recommendations those relating to 'social' factors are always greater in number than 'technical' factors

2) Evidence strongly suggests that it is usually failures in organisational arrangements which ultimately lead to technical failure
(Toft and Reynolds, 2005, P.129)

Key Themes taken from the Inquiry Reports and Recommendations

1985: Bradford City Fire and Birmingham Wall Collapse	*Identification of Problems (Risk Assessment)* *Inspection and Tests* *Design* - Ingress and egress to/from the ground, Terraces and Stands, Fences, Stairways and Ramps *Fire Precautions* *Fire Fighting Equipment* *Communications* - public address systems, alarms, CCTV *Crowd Behaviour* *Management Responsibilities* - checklists for emergency procedures, responsibilities *Training* *Revisions to safety certificate arrangements* *This report also highlights earlier and very similar recommendations from*

	other reports
1987: King's Cross Underground Fire	*Police Actions* - Police decision to move passengers up from the platform to the surface with tragic results. These decisions were taken independently by Police Officers without seeking advice from London Transport staff or other management. Only through communication with the specialists in underground fire behaviour could the police have realised the danger at the time. (Suggesting parallels with Hillsborough-author's emphasis) *Historical Context* - Fires had become common place for London Underground staff so it may not have been perceived as a legitimate threat. There had been 46 escalator fires between 1956 and 1988 and in two instances the cause was attributed to smoker's materials. *Safety* – Fire Certification requires review. *Training* - London Underground had no evacuation plan and no system to train staff in fire drill or evacuation. *Communications* - Up to date telephone system, message recording/ timing system needed. Public address equipment to be improved. Radio equipment must be compatible between British Transport Police and London Fire Brigade. *Station Operations Room* *CCTV* – to be improved *Management Failings* - The Chairman of London Regional Transport and the Chief Executive of London Underground both resigned upon publication of the report. *Legislative breaches* - Smoking had been banned since February 1985 but the ban was not thoroughly enforced. *Maintenance* - Escalator cleaning was supposed to take place every 8 months but in fact took place every 11 months. Maintenance, repair and monitoring of electrics was deficient. Poor condition of waterfog equipment and nozzles. *Fire Fighting Equipment* - Fire fighting equipment was concealed behind wooden hoardings. *Design* - The ceiling of the ticket hall was 3ft lower than necessary, and the ceiling was coated with a highly combustible paint which also emitted a Thick, black smoke. *Management* - Reliable records of fires were not kept *Integrated Emergency Management (author's interpretation)* – e.g. London Fire Brigade and London Underground to produce and

	maintain up to date station plans and place them in boxes at agreed locations. Exchange of information at time of incident. *Training* – Inadequate fire and emergency training given to staff. Programme of continuing instruction by supervisors to be established *Planning* – No established evacuation plan
1987: Herald of Free Enterprise	*The response from the emergency services, the Belgian people and the people living in and around Zeebrugge was described as magnificent.* *Engineering and Design* - simple indicator lights that would have told the Captain that the bow doors were shut had previously been refused. Bulkheads would have slowed the vessel's capsize Review of Stability Books ordered. Modifications of vehicles built under the 1965 rules. *Reporting of Accidents* *Responsibility* - [The Captain] was seriously negligent in the discharge of his duties. *Management Failings* - All concerned in management …were guilty of fault in that all must be regarded as sharing responsibility for the failure of management. From top to bottom the body corporate was infected with the disease of sloppiness. (The Inquiry report contains detailed analysis of the role of management, see pages 14-15.) *Safety* - The future: Bridge Indicator Lights The future: Systems for licensing ships and operators The future: Strong and consistent managerial involvement in all aspects of safety. *CCTV*- Valuable addition. Should be considered. *Employees* - Treatment of employees. Working Hours and Systems that are responsive to the needs of employees Monitoring of difficulties Stability of Personnel and regular team meetings will support team work. Constant changes of staff meant that on the HOFE teamwork simply could not be developed. Avenue for complaints *Report stressed the need for:* a) *clear and concise orders* b) *Strict discipline* c) *Attention at all times to all matters affecting the safety of the ship and those on board. There must be no 'cutting of corners.'* d) *The maintenance of proper channels of communication between ship and shore for the receipt and dissemination of information* e) *A clear and firm management and command structure*

	For further interpretation of these recommendations see: Crainer, S. (1993) *Zeebrugge, Learning from Disaster: Lessons in Corporate Responsibility.* Herald Families Association
1988: Piper Alpha	*Safety*- The operator should be required by regulation to submit to the regulatory body a Safety Case in respect of each of its installations (The recommendations then set out detailed requirements for this Safety Case.) Support for Safety Committee and Safety Representatives Permits to Work *Incident Reporting* *Control of the Incident* – Control Rooms, Emergency Centres and Systems *Command of the Incident* *Fire detection equipment* *Fire Protection* *Evacuation* - Escape Routes, Accommodation Facilities for evacuation, evacuation into the sea Helicopters Totally Enclosed Motor Propelled Survival Craft Standby Vessels *Safety Equipment* – Personal survival and escape equipment *Pipeline Emergency Procedures* *Training and Exercising* *Regulation* – There should be a single regulatory body for offshore safety
1988: Clapham Rail Crash	*Operational* - wiring, testing etc *Technical Training* *Employees* - Working hours, monitoring overtime *Recruitment and Retention* *Management of Staff* *Safety Monitoring* *Quality Management and Audit* *Safety Culture*

	Reporting of Signal Failures *Communications (from an Emergency Services perspective)* – Emergency Services dedicated phone line, Emergency Services to carry out Major Incident simulations, Including Hospitals in Major Incident Warnings as soon as possible, training of hospital switchboard operators, Radio Communication *Site Management* - The wearing of PPE, tabards with names of service on them. *Communications (from British Rail perspective)* – Direct lines and emergency dialling systems Public address systems *Casualty Bureaux* *Command and Control* – Primacy of the Civil Police when there is no fire *Integrated Emergency Management (author's interpretation)* – e.g. between emergency services and British Rail *Care of People* – The Police Forces should study the excellent arrangements made by the Metropolitan Police for the bereaved and relatives of the seriously injured *Emergency Planning* - Department of Health to review plans in conjunction with Medical and Emergency Services
1989: Hillsborough	*Operations on the day* - The immediate cause of the disaster was the failure to cut off access to the central pens once gate C had been opened. *Lack of Leadership* *Planning* - Congestion at the turnstiles should have been anticipated and planned for. *First Aid, Medical Facilities and Ambulance* e.g. one trained first aider per 1000 spectators, fully equipped ambulance. *Care of People* - Delay in informing relatives, Lack of Information Processes for Identification: Families viewed polaroids and their loved ones in the gymnasium *Future safety recommendations*-All seated accommodation, National Inspectorate And Review body, Maximum capacity for terraces, Filling and monitoring terraces, Gangways, fences and gates. *Police Planning* *Communications*-sufficient operators in the control room, reserved command channel. Illuminated advertising boards to address the crowd.

	Command and Control *Offences and Penalties*-pitch invasion, abuse, throwing missiles, selling tickets Without authority *Green Guide*-Required revision
1989: Marchioness	The first Inquiry into the Marchioness disaster was held in 1990. This was conducted in private and established by the Marine Accident Investigation Branch. The families and the Marchioness Action Group campaigned for many years to have a Public Inquiry and this was finally established in 2000. Reports by Lord Clarke were published between 1999 and 2001. They first evaluated the case for an inquiry and the issues that were likely to be explored. The final inquiries reported into two related areas: 1) Formal Investigation into the Collision and the Search and Rescue Operation that followed 2) The Identification of Victims following Major Transport Disasters
	Collision and the Search and Rescue Operation: *Alcohol, Drugs* - e.g. alcohol abuse aboard waterborne vehicles *Employees*- Fatigue *Search and Rescue (SAR)* - In 1989, no one including the police, had the legal responsibility either to determine what SAR resources were required or to provide and pay for them. SAR arrangements were to b kept under review with the Royal National Lifeboat Institution to provide cover Suggestion of a Statutory duty to provide and co-ordinate these services *Safety* *Risk Assessment* *Training* – For Watermen and Lightermen *Training* – for emergencies *Accident Investigation* – Data and other recording equipment *Legislation* – Changes to Marine By-Laws and examination of the role of the MAIB *Lord Clarke also made a number of recommendations bout the way public inquiries should be established in the future*
	Identification of Victims:

	Care of People - Delay in informing relatives, Lack of Information Local Authority Social Services to draw up plans for the care of the bereaved *Emergency Planning* – The Home Office should ensure that all agencies likely to be involved in the aftermath of major disasters are made aware of the need for Contingency Planning Process of Identification: Invasive techniques such as removal of hands. Lord Clarke set out a number of principles that responders should be mindful of after disasters: 1) Provision of honest and, as far as possible, accurate information at all times and at every stage 2) Respect for the deceased and the bereaved 3) A sympathetic and caring approach throughout; and 4) The avoidance of mistaken identification *Establishment of a Rights Based Approach* *Training* – Training of Coroners *Casualty Bureau* *The role of the Family Liaison Officer* *Senior Identification Manager*- The appointment of a Senior Identification Manager with overall responsibility for the identification process *Integrated Emergency Management (author's interpretation)* – For Mass Fatality Management
1996: Dunblane	*Care of People* – Delay in informing relatives, Lack of Information Facilities for those waiting for information: "cramped and overcrowded room" Identification of Victims *Training* – Police *Management of Cordons* Allocation of Fire Arms Licences Police failings in this area
1997: Southall Rail Crash	*Risk Assessment* – Any change in regulation must be preceded by risk assessment *Evacuation* – Avoid distressing scenes, should people be sent onward by train *Medical* – More effective liaison with hospitals and casualty gathering areas *Care of People* – Delay in informing relatives, Lack of Information, Identification of Victims should be "speeded up",

	Casualty Bureaux – Procedures to be reviewed *Post accident debriefing* *Inquiries into Disasters* - "one stop" investigation of disasters *Driver Training* - Inadequate *Operational* *Fault Reporting* *Maintenance* – Fleet and Infrastructure *Design* – Vehicles, *Research and Development* *Safety* - Procedures must not become divorced from reality *Accident Investigation and Inquiries* *Privatisation of the Rail Industry* - The fragmentation of the industry had resulted in some confusion and inconsistencies in safety procedures which must now be put right See discussion at: http://news.bbc.co.uk/1/hi/uk/655723.stm A review of compliance after six months was also recommended by Professor Uff
1999: Ladbroke Grove	Taken from Part One of the Inquiry: *Risk Assessment* - assessing all relevant issues when a change is proposed *Operational* - Signalling, Track management, Signal Sighting *Driver Management and Training* - Train Operating Companies should review the effectiveness of the systems in place to deliver the training *Training* - Emergency Evacuation and Protection *Blame Culture* - The development of a culture within the industry in which information is communicated without fear of recrimination *Understanding of Human Factors* *Safety Audit Process* *Communications* - safety information available to passengers, emergency facilities onboard the trains, emergency signs to be made luminous, on board safety announcements, emergency signs should be understood without having to be read, common signage for all trains in

	Great Britain. Passenger-signaller communication. Roaming communication systems, remote broadcasting. Pictograms-similar to those used by airlines *Safety equipment* - Emergency Lighting Systems that can be safeguarded from disablement, the provision of "snap wands" to provide lighting, emergency Hammers. *Design* - Internal doors, ladders, removable windows, the possibility of escape hatches
2001: The Joint Inqui into Train Protection Systems	*Operational* – Train Protection Systems

Some additional Themes emerging from reviews, changes in the law and litigation, commentary etc

1985: Bradford City Fire and Birmingham Wall Collapse	*Legislative Changes* - 1987: Fire Safety and Safety of Places of Sport Act was introduced
1987: Herald of Free Enterprise	*Acceptable corporate behaviour* - "Zeebrugge proved that it is unacceptable, in any business, to wait for the product or machine to go wrong before taking action." (Crainer, 1993, 156) *Statutory Changes* - Development of the Department of Transport Marine Accident Investigation Branch *Legislative Changes* - "Corporate Responsibility" The need for review of corporate manslaughter legislation *The role of the Inquest* - The role of the Inquest e.g. not to apportion blame *Jury inquest returned a verdict of unlawful killing* See Crainer, S. (1993) *Zeebrugge, Learning from Disaster: Lessons in Corporate Responsibility.* Herald Families Association.
1987: King's Cross Fire	*Isomorphic Learning* - There was no satisfactory analysis carried out on common factors/ trends on the behaviour of fires. Recommendations from previous incidents have not been acted upon Professor Ed Borodzicz provides a detailed analysis on this disaster in his book : Borodzicz, E. (2005) *Risk, Crisis and Security Management*. Wiley.

1988: Piper Alpha	*No Criminal Actions brought* *Command and Control* - 'The explosion on Piper Alpha that led to the disaster was not devastating. We shall never know but it probably killed only a small number of men. As the resulting fire spread, most of the workforce made their way to the accommodation where they expected someone would be in charge and would lead them to safety. Apparently, they were disappointed. It seems the whole system of command had broken down.' (Sefton, 1994) *Management Failings* - Serious criticism of Management *Risk Assessment* - The offshore safety regime at the time did not require that risks were assessed. Potentially hazardous events had been envisaged, but Occidental did not require them to be assessed systematically. After the Cullen Report responsibility for oil rig safety was transferred to the HSE. The HSE budget was increased *Safety* - New technology (including personal locators, homing direction finders, transponders etc) personal survival equipment and arrangements for helicopters, standby vessels and Fast Rescue Crafts. *Training and Exercising* - Training and exercising of Offshore Installation Managers and Controllers was introduced. *Selection Criteria* - A selection criteria for Offshore Installation Managers was introduced
1988: Clapham Rail Crash	*No criminal charges were brought* *Jury Inquest returned a verdict of unlawful killing*
1989: Hillsborough	*Historical Context* - The erroneous fateful belief that a disaster could not strike twice (following the Bradford City fire) Had the recommendations of Lord Popplewell, made after the Bradford City Fire, been carried out then Hillsborough may never have happened *Political / Social Context* - The policing of football matches. Vilification of Liverpool fans. This was strongly challenged by Lord Taylor. System Failures after years of complacency - see discussions by Turner and Scraton *Safety Culture* - Establishment of a Football Licensing Authority *Safety* - Conversion to all seated stadia Upgrades to Britain's football grounds Regulation by Football Licensing Authority

	All seat rule imposed *First Response* - Arrangements for First Aid and Triage *Training* - Strategies for Training Senior Officers Legal definition of PTSD *Failed Prosecutions* *Care of People* - Further analysis of the rights of those affected by disaster. See Scraton, 1999.
1989: Marchioness	*Changes in Responsibility* - From 2002 the Coastguard took over responsibility for co-ordination of Search and Rescue on the Thames up to Teddington Lock. *Failed Prosecutions* - Juries in two trials could not reach a verdict *"Lord Clarke Compliance"* – Disaster Victim Identification in the UK Invasive Techniques e.g. see Hinsliff, G. (2001) .No excuse for Marchioness mutilations. *The Observer,* 11th March reproduced at www.observer.co.uk/Print/0,3858 as at 1st September 2003 The development of a Rights based approach for the bereaved after disaster (e.g. the right to view the deceased, the right to information, the right to visit the site, the right to the return of personal effects etc-visit www.disasteraction.org.uk for further information.)
1996: Dunblane	*Legislative Changes* - There was a change in the law in 1997 making it illegal to buy or possess a handgun *Security* - Effective security in schools See discussion at http://news.bbc.co.uk/1/hi/uk/4798290.stm
1997: Southall	*Failed Prosecutions* – Manslaughter charges against the driver and the train operator were dropped
1999: Ladbroke Grove	*Previous recommendations* - Media reports suggested that the Paddington disaster might have been averted by the implementation of the safety measures, identified in the 1989 Clapham investigation

IV) Barriers to Learning from Public Inquiries

1) Introduction to the material:

Governmental Reviews
Public inquiries have been the subject of recent governmental attention. In 2004 a review of their effectiveness was published by the Public Administration Select Committee; Their review recognised that while inquiries had helped to bring about valuable and welcome improvements, there had also been occasions where inquiries had been marred by procedural arguments and time and resource issues. The Inquiries Act 2005 was then introduced.

Academic Perspectives
Many writers in the field of emergency management have also included discussion of public inquiries within their work and these perspectives form a large part of this review. Full details of all the papers reviewed are included in the bibliography.

One procedural point to note is that many of these reviews took place prior to the introduction of the new Inquiries Act in 2005.

2) Barriers to Learning from Inquiry Reports: Key Themes

(Please note that full details of all the texts mentioned are included in the bibliography

Themes
The literature reviewed was analysed for key themes that emergency planners could use to understand why it might be difficult for their organisations to learn from public inquiries. Even with the new legislation in this area (Civil Contingencies Act 2004 and Inquiries Act 2005) these barriers could still continue to cause problems as they are often related to more intangible issues that are difficult to legislate for, such as political context, hindsight and different perspectives. It is therefore important that emergency planners apply them to their own work.

I. Recommendations
The public inquiry is only one step in the process of organisational learning from crisis although implicit is the assumption that learning swiftly follows the inquiry. This assumes that the recommendations will be rigorously acted upon but this is often not the case (see the discussion in Chapter II.)

Balancing Recommendations
Borodzicz (2005) states that the recommendations made have to strike the correct balance; on the one hand they must reflect the public's need for catharsis and reassurance that similar events can be prevented. On the other hand any recommendations must also be politically workable so that they can be turned into guidelines and even legislation.

Elliot and McGuiness (2002) argue that without the force of the law it is unlikely that organisations will informally comply and that "active learning" requires the translation of

knowledge into action via changes to operating norms and procedures. This raises questions about the communication of the findings of public inquiries and the mechanisms by which organisations implement them

Failing to address all the events in the chain

"Disasters have complex pathologies usually involving system, safety and communication failures"
(Wells, 1995, P.1)
Public inquiry recommendations sometimes do not address all of the chains of events leading to the disasters under investigation. This implies that the recommendations, even if implemented in full, will fail to cut some of those chains if they recur in the future in the same or isomorphic systems.

II. Terms of Reference

According to Toft and Reynolds the inability of public inquiry participants to get particular issues raised often appears to stem from the setting of too narrow terms of reference.

Elliott and McGuinness (2002) also raise the issue that the scope of the inquiry can create barriers to learning. They look at the issue of focussing on "micro issues" which means that the inquiry investigates only the immediate circumstances of the accident but fails to consider the wider organisational, political, social and economic contexts.

Given the tight focus of the inquiry, it is not surprising that operator error is often raised as the key causative factor. There may be advantages in extending the focus of the inquiry as few disasters have simple causes and it is a concern that when human error is identified this is a key impediment to organisational learning (organisation's may not have to face up to their own failings if it has been attributed to one operator).

Scraton (2002) argues that key stakeholders are omitted when terms of reference are set and that these can be influenced by the "early view" of what happened rather than a more holistic picture; those affected by the disaster have no input into the priorities and emphases of the inquiry. The Home Secretary or another government minister makes this decision.

III."Hindsight Bias"

On being wise after the event

Professor Reason researches into the areas of human error, stress, organisational risk management etc. His comments on "hindsight bias" serve as a cautionary note for those seeking to learn from public inquiries. He also provides a very helpful review of a number of disaster case studies.Reason draws on the work of Fischoff and Slovic to illustrate that "outcome knowledge profoundly influences the way we survey past events".
This phenomenon is called "hindsight bias" and has two aspects:

1) The "knew it all along" effect (also known as 'creeping determinism') whereby observers of past events exaggerate what other people should have been able to anticipate in foresight. If they were involved in these events, they tend to exaggerate what they themselves actually knew in foresight.

2) Historical judges are largely unaware of the degree to which outcome knowledge influences their perceptions of the past. As a result, they overestimate what they would have known had they not possessed this knowledge.
(Reason, 1990, P.215)

The Historical Context

Establishing an historical context for the disaster is a reflective exercise informed by the benefit of hindsight. It considers the long term background to, potential for and warnings of disaster. Often it reveals complacency and negligence underpinning a tragedy which was 'waiting to happen'. The moment of disaster is not necessarily literal; it can be a 'second'-an explosion/ crash; it can encompass a period of time-a crush/sinking/a fire.
(Davis and Scraton, 1997, P.iv)

Hindsight and Recommendations

Turner and Pidgeon examined the nature of recommendations from public inquiries and they raise the issue of hindsight and recommendations stating that;
"recommendations….are concerned to deal with the problem which caused the disaster as it is now revealed, and not to deal with the problem as it presented itself to those involved in it before the disaster."
(Turner and Pidgeon, 1997, P.61)

Hindsight and the Preventable Disaster

Celia Wells has written extensively on the legal process after disaster.
She highlights a number of issues relating to the public inquiry; for example while it could be argued that inquiries are merely ways of responding with hindsight to unavoidable accidents, they also are a way of revealing warning signs which in fact mean that had those signs been recognised, the disaster would have been preventable (Wells, 1995, P.72)
(The Disaster Prevention Unit at the University of Bradford found in their study of 1000 disasters since the nineteenth century that over 60 per cent could have been prevented.)

IV. A Complex Process

Borodzicz (2005) states that public inquiries are usually carried out in a highly formalised and even ritualistic way. Wells (1995) also highlights that the process of inquiring into disaster is not as simple as it may sound by applying a generic term such as "public inquiries" (as discussed above.)Instead she describes the structure as Labyrinthine (Wells, 1995, P.72)
She states that there is no clear "public inquiry" system as such; inquiries may or may not be in public, English and Welsh legal institutions differ from those in Scotland and that the formal attribution of blame through the legal process is complex, contingent and variable.
(Wells, 1999, P.7)

V. Predictable Circumstances

Sometimes the idea that disasters are caused by predictable circumstances is resisted by emergency planners, and we will often assume that each emergency is unique.

"Disasters are regularly caused by a coincidence of predictable circumstances coming together unexpectedly."

(Scraton, 2000, P.83)

Disasters with similar circumstances

The similar circumstances leading up to disasters that outwardly may appear very different are striking. This also strengthens the argument that emergency planners must broaden their opportunities to learn even if the disaster appears remote and unrelated.
Elliott, Frosdick and Smith provide an insight into the way in which stadia disasters happened over and over again in the 1980s with a number of similarities:

Venue	Year	Casualties	Type of Incident
Hillsborough (1981)	1981	38 injured	Crowd Crush
Walsall	1984	20 injured	Wall Collapse
Bradford	1985	54 dead	Fire
Birmingham	1985	1 dead, 20 injured	Disorder/ Wall collapse
Heysel (Brussels)	1985	38 dead, 400 injured	Disorder/ Wall collapse
Easter Road	1987	150 injured	Crowd Crush
Hillsborough (1989)	1989	96 dead, 400 injured	Crowd Crush
Middlesborough	1989	19 injured	Crowd Crush

Further insight about these similarities can also be found by reviewing Mr Justice Popplewell's Report of the Committee of Inquiry into Crowd Safety and Control at Sports Grounds and Lord Taylor's Report into The Hillsborough Stadium disaster

VI. Political Context

"While incidents are regularly investigated by agencies such as the Health and Safety Executive, there are often calls for a 'public inquiry' if the tragedy is considered to have wider implications for the 'public interest'." (Scraton, 2000, P.118)

Conflict of Interest

The lessons that emerge from public inquiries and the need to "tell it like it is", may be compromised when personal or corporate identities and liability are at stake. Even though the stated aims may be to allow witnesses to speak freely, giving evidence may subsequently cause one to be blamed or held personally liable and create a dangerous conflict of interest.

VII. Multiple Realities

Borodzicz (2005) states that people's "realities" [e.g. views, perspectives and outlook] are different, and at a public inquiry conflicting accounts of reality are presented by those involved;
When telling their account of events, the witnesses present "multiple realities." They may operate simultaneously and may not be compatible. However they are each valid accounts of events for those who have constructed them. Expert accounts are liable to disagree (as also seen in differing testimonies provided by expert witnesses in court cases.)
(Borodzicz, 2005, P. 201)

Different versions of "Truth"

Scraton argues that truth is "derived" and sustained within the dominant relations of power. "As they set out to reconstruct public confidence, official inquiries more often than not become part of "official discourse, institutional processes and professional processes" which….are expressions of power which construct and legitimate self-serving versions of the truth.)

(Scraton, 2004 also quoting Scraton, P.(2002) 'Lost lives, hidden voices: 'truth' and controversial deaths'. *Race and Class.* Vol 44,No 1, P.109-118.)

Making Sense of Emergencies

People try and rationalise events leading up to or during a disaster, and make sense of what is happening but this will be framed by their own perspectives and experiences.

VIII. Risk Perception

People make decisions using their own judgement every day. Every risk assessment involves subjectivity and these decisions are influenced by our own past experiences. This also means that we "sanitise" our world of hazards so that we are not constantly worrying about the risks that we face. This may mean that we become over-confident and fail to recognise warning signs. As emergency planners, this may impede our ability to recognise warning signs of disaster, and also may inhibit us from looking at other learning opportunities.

IX.Censorship and Learning from Success

Perrow (1999) argued that many investigations into accidents are 'left censored'. This means that they examined only failures and not systems with the same characteristics that have not failed. This suggests that there is much to be learned from success as well as failure.

"If the aim of the Inquiry is to collect and analyse evidence as a means of encouraging learning then it might incorporate the study of success as well as failure."
Elliott and McGuinness, 2002, P.200

X. Focusing solely on technical elements

If you allow yourself to focus solely on the technical elements of the inquiry report you may ignore the human aspects of causality which are central to both crisis incubation and learning.

XI. Establishing a blame free culture

A blame free culture is important in ensuring that learning can take place from near-miss events. However it does not imply that illegal or reckless actions should be ignored by the organisation.

V) Comparison Study: Some themes from the July 7th Reports

Home Office (2006) Addressing Lessons from the Emergency Response to the 7 July 2005 Bombings: What we learned and what we are doing about it
London Regional Resilience Forum (2006) Looking Back, Moving Forward
For overview of themes see http://news.bbc.co.uk/1/hi/uk/5370666.stm

It is useful to compare the inquiry findings after previous disasters, with the reviews into the terrorist attacks of July 7th 2005. As discussed earlier there has not been a public inquiry into these events, so these themes have emerged in the reviews conducted by the various organisations.
It is heartening to see that in planning for the response and in the recovery process many lessons have been learnt and implemented (even before the full introduction of the Civil Contingencies Act 2004 in November 2005) but some issues remain. As you will see, a number of themes are very similar to the earlier disasters.

"Learning from Success"	Emergency Response, Strength and Flexibility Arrangements, Civil Contingencies Act 2004 Telecommunications generally worked well Successful response thanks to four years of planning and training. Hospitals made ready. Evacuation Procedure worked well. London Mass Fatality Plan. Family Liaison System.
Management of Cordons	Police were too strict with cordons which prevented engineers etc from getting on the sit
Communications (Strategic)	Government contact was seen as slow and agencies did not work together to share information Proposed that there are Senior Government Co-ordinators
Communications (Operational) Linked to Command and Control	Difficulties with older telecommunications equipment degraded command and control capabilities Problems with Mobile Phone Network Management Problems with communications underground There should be a dedicated digital communications network
Care of People	Delays in Identification, Lack of Information

	Support for Survivors Confusion over the Data Protection Act Delays in Compensation People were left feeling out of touch Details of people were not collected The name “Family Assistance Centre” deterred some people from attending
Police Casualty Bureau	Overwhelmed
Medical First Aid	Limited first aid suppliers and first aiders at stations

VI) Techniques of learning lessons applicable to Emergency Planners

Bismark is alleged to have said “Only fools learn from their own experience. I prefer to learn from the experience of others.” (See Moore, 1992, P.99)
This light hearted take on the situation is highly pertinent to today’s emergency planners.

Learning Lessons from Disaster
A number of exercise debrief reports that I have reviewed in recent months have made reference to “lessons identified” rather than “lessons learnt”. This would seem to be an acknowledgement that to truly learn, it is not enough to list issues but instead an implementation strategy with appropriate auditing and follow-up must be put in place.

Working in both operational and academic environments I have gained insight into both fields. It has struck me that few (although the numbers are growing) emergency planners are familiar with the vast body of research examining the way that lessons are learned from disaster. This material has great relevance to today’s emergency planners and key reading in this area would include;

Dr Barry Turner and Nick Pidgeon: Man Made Disasters
The work of the late Professor Barry Turner was highly influential in this area. Anybody wanting to learn more about lessons from disaster and “warning signs” is directed towards this work.
Turner and Pidgeon argued that humans and their organisational systems provide the background conditions for many disasters. Evidence for this can be found in numerous public inquiry reports. This challenges perceptions that disasters are unexpected, unpredictable “Acts of God.”
Incubation Period
Learning about and understanding the importance of the “incubation period” is very important for Emergency Planners. Many of the disasters discussed in this review were typified by this “incubation period” in which a number of events accumulated over time but went unnoticed or were misunderstood. Both social and technical factors are involved and interact with each other.

Turner proposed a six stage model for understanding the development of disasters:

1)Notionally Normal Starting Points:
Cultural beliefs about the world and its hazards, Precautionary norms are set out in laws, codes of practice etc
2)Incubation Period
The accumulation of an unnoticed set of events which are at odds with the accepted beliefs about hazards and ways in which they can be avoided
3) Precipitating Event
Brings attention to itself and transforms general perceptions of Stage 2.
4) Onset
The immediate consequences of the collapse of cultural precautions become apparent.

5)Rescue and Salvage-First Stage Adjustment
The immediate post-collapse situation is recognised in ad hoc adjustments which permit the work of rescue and salvage to be started
6) Full cultural readjustment
An Inquiry or assessment is carried out and beliefs and precautionary norms are adjusted to fit the newly gained understanding of the world

Through the public inquiry process a *cultural readjustment* will occur that allows new norms and operating practices to develop that will replace procedures that existed before the disaster (As also explored in Elliott and McGuiness, 2002)

Turner and Pidgeon go on to look at the practical applications of this work and the way in which organisations can turn knowledge of this six stage process into applicable safety lessons.

Professor Brian Toft and Simon Reynolds
This work on learning after disaster is pivotal to understanding how we learn lessons from a public inquiry.
Active Foresight
The goal for emergency planners is to generate "active foresight"; this means that material from past disaster presents us with an ability to change, adapt and improve on our practices. Ultimately risk reduction procedures are implemented based on the knowledge gained.

Isomorphic Learning
Toft and Reynolds explore in detail ways in which we learn lessons after disaster and in particular the concept of "Isomorphic Learning".
This means that lessons learned can be extrapolated and applied to similar organisations.

Isomorphic Potential::
Event Isomorphism-Two separate disasters that manifest themselves in different ways but lead to the creation of identical hazardous situations. Because the events leading up to the disaster are different, we may miss the potential for learning.
Cross Organisational-Very different organisations but the same industry e.g. British Airways and American Airlines. Both organisations may suffer from similar errors.
Common Mode-Different industries but similar tools, techniques, procedures used in the process.
Self-organisational-The organisation is so large it has many operational sub-units e.g. lo government or the NHS.
For a full explanation of this see Toft and Reynolds, 2005, P.72

Are Public Inquiries Appropriate for Learning?
In their book "Learning from Disasters: A Management Approach" Toft and Reynolds pose the question: Are public inquiries Appropriate?
"At every large-scale accident inquiry the hope is expressed that the investigation will ensure 'this shall not happen again.' In practice adequate learning is often constrained" (Toft and Reynolds,2005, P.126)
This review has explored a number of reasons why this might be the case.

Dominic Elliott and Martina McGuiness
Elliott and McGuiness provided further insight into the barriers we must overcome before we can learn from disasters. These include:
What is meant by the term "learning"?
Learning is not simply the absorption of facts but should also involve "a fundamental shift or movement of mind" that goes on to change behaviour. (Senge, 1990 in Elliott and McGuiness, 2002, P.14)
Also how is this lesson transferred?
Knowledge acquisition is only part of the learning process
Arguably cultural readjustment does not necessarily occur and even when the public inquiry captures relevant knowledge, learning in the form of changed behaviour does not necessarily follow.
Tacit and explicit knowledge
Tacit knowledge is the type acquired during a long apprenticeship with a master craftsman which may be difficult to put into words. Explicit knowledge is more formal and easily communicated.
Organisational Conditions
These will influence the receptiveness to knowledge and changes to operating norms and practices.

Such discussions may seem a little "impenetrable" but as a supervisor of numerous dissertations undertaken by practitioners engaging in part time study, I have had the privilege of observing how these principles can be applied extremely effectively to one's own organisation.

Techniques to assist with learning

The Civil Contingencies Act 2004 and accompanying guidance has heightened emergency planner's awareness of the need for best practice guidance, information sharing, co-operation etc. It will be very interesting to see in the coming years the effect that this has on our ability to learn lessons after disaster. Already we see documents available on www.ukresilience.info outlining the lessons from disasters such as Hurricane Katrina, USA, August 2005 that can be extrapolated for UK emergency planners.

A number of academics have also proposed techniques to assist with learning lessons after disaster and these may provide additional avenues for emergency planners to explore. Examples would include:

Schematic Report Analysis Diagrams
(See examples in Toft and Reynolds, 2005)
Toft and Reynolds developed the Schematic Report Analysis Diagram as a method of analysing inquiry reports. The aim was that this would be a step towards resolving the problem of omitting key events in the chain leading up to disaster.

This technique can be computerised, can be used in disaster analysis and reporting, can be used by the Inquiry and any other forum, and can be used as a teaching aid.

Creating "Turbulence"

This is an idea proposed by Smith and Elliott. How do organisations consider all these complex interactions? One solution is for organisations to 'generate turbulence' by constantly challenging their core beliefs, assumptions and shared values. Such turbulence allows for the provision of "double loop" learning in which the standards used by the organisation and the frameworks for decision making are constantly reassessed. It is no longer adequate to look at decision outcomes, instead organisations need to examine the manner in which that decision is made and the impact of their own values and assumptions in framing that process (Elliott and Smith, 2007, P.18.)

Learning from Near Misses

A number of writers in this field have examined the ways in which lessons can be learned from near misses rather than full blown disasters, including Bennett and Toft and Reynolds. For this to happen, these lessons need to be recorded, analysed and acted upon (Bennett, 2000.)

This is often much more complex that it may initially sound; it can be hard to recognise a near miss and differentiate it from simply a "bad day at the office." Practitioners may also be wary of blame being attributed to them and their colleagues. This is a ripe area for further research in the emergency planning sphere.

Industries such as aviation do have good practice methods that may be applicable e.g. through the use of the "CHIRP" confidential reporting system which allows aviation personnel to post anonymised concerns and "near misses" that are then published for others to learn from. A number of transport operators also have similar schemes.

VII) Conclusions

The legal process after disaster is complex, fascinating and of vital importance to today's emergency planners. That is reason enough to ensure a thorough understanding of public inquiries.

However many demands are placed on planners and work is ongoing to establish the competencies they will need to demonstrate. Time and resources are limited, and it can seem overly ambitious to expect busy practitioners to also try and review a vast swathe of material available to them. In addition, political climates and social complexities can make initiating change management a near-impossible task.

To assist with this, the Civil Contingencies Secretariat already produce reflective documents incorporating lessons identified from previous events and the Emergency Planning Society often features presentations (e.g. at their annual conference) which can help practitioners to understand more about the similarities between far away incidents and their own home town. This is also an important teaching and training method nationally. As many practitioners also undertake part time academic study, they become more and more familiar with the rich vein of research in this area. This is something that must continue to be supported.

The acknowledgement that identifying lessons is only the first step is also a crucial one and methodologies for ensuring that they are put into practice should also be explored. Polices and frameworks should not re-invent the wheel but should take appropriate heed of the lessons from the past; in the initial summary wider reaching implications of some of the barriers to learning were highlighted and policy makers should aim to "create turbulence" in their own work, challenging the assumptions that may have crept in.

As asserted at the outset, public inquiries have been identified as "the most valuable source of information to help prevent recurrence of disasters" (Toft and Reynolds, 1999, P.45.) This would perhaps suggest that there is an additional obligation to fully understand both the recurrent themes highlighted by inquiries and any impediments to implementing these in ones organisation: we should not need to be forced into activating changes or improvements only when tragedies occur. Instead we should fully embrace every last detail from the data we already have to ensure that every lesson is not only learnt but also implemented.

Appendix

List of Public Inquiries after Disaster reviewed in detail

Year of Disaster	Details of Disaster	Details of Inquiry
1985	Bradford City Fire 11th May 1985 56 people died Also Birmingham Wall Collapse where 1 person died (also on 11th May 1985) and Heysel disaster where 38 people died (29th May 1985)	Mr Justice Popplewell (1986) Final Report of the Committee of Inquiry into Crowd Safety and Control at Sports Grounds Cmnd. 9710
1987	Herald of Free Enterprise Ferry Capsize caused by water rushing into open bow doors 6th March 1987 192 people died	Mr Justice Sheen (1987) M.V.Herald of Free Enterprise, Report of the Court, No 8074 Department of Transport
1987	King's Cross Fire A fire in the London Underground 18th November 1987 31 people died	Desmond Fennel QC (1988) Investigation into the King's Cross Underground Fire CM 499 HMSO
1988	Piper Alpha Oil platform explosion and fire 8th July 1988 167 people died	The Hon Lord Cullen (1990) The Public Inquiry into the Piper Alpha Disaster Established under the Offshore Installations (Public Inquiries) Regulations 1990 CMND 1310 HMSO
1988	Clapham Collision between two trains 12th December 1988 35 people died	Anthony Hidden QC(1989) Investigation into the Clapham Junction Railway Accident CM 820 HMSO
1989	Hillsborough Football Stadium Crush within the stands 15th April 1989 96 people died	Right Hon Lord Justice Taylor (1990) The Hillsborough Stadium Disaster, Interim Report, CM 765 HMSO
1989	Marchioness Sinking of a pleasure boat after it collided with a dredger 20th August 1989 51 people died (Inquiry was not announced until 2000)	Marine Accident Investigation Branch: 1991 Lord Justice Clarke (between 1999-2001) Thames Safety Inquiry Final Report Cm 4558 TSO Marchioness/Bowbelle Formal Investigation under the

		Merchant Shipping Act, 2001 *Collision and the Search and Rescue Operation* Public Inquiry into the Identification of Victims following Major Transport Accidents. Cm 5012 TSO
1996	Dunblane School Shooting 13th March 1996 18 people died	The Hon Lord Cullen (1996) The Public Inquiry into the Shootings at Dunblane Primary School on 13 March 1996 CM 3386, The Scottish Office
1997	Southall Rail Collision 19th September 1997 7 people died	Professor John Uff QC (2000) The Southall Rail Accident Inquiry Report Health and Safety Commission Also see Ladbroke Grove below
1999	Ladbroke Grove (also known as Paddington) Rail Collision 5th October 1999 31 people died	The Hon Lord Cullen and Professor John Uff QC 1) Ladbroke Grove Rail Inquiry 2) The Joint Inquiry into Train Protection Systems (2001) Part 1 was concerned with issues relating to the Ladbroke Grove train crash and part 2 was related to wider issues of safety management and the regulatory regime.

Other disasters referred to in the discussion

2002	Potters Barr Train derailment 10th May 2002 7 people died	Investigations by British Transport Police, Health and Safety Executive, Rail Standards and Safety Board Requests for a public inquiry were rejected-see www.bbc.co.uk Similarities with Grayrigg points failure
2004	Indian Ocean Tsunami 26th December 2004 Death toll of over 300,000 world wide 150 Britons confirmed dead with others still missing	No inquiry but review by National Audit Office and Zito Trust - see Bibliography
2005	Suicide Bombings at four locations around	A number of reports including:

	London (three underground trains and one above ground bus) 7th July 2005 56 people died (including 4 bombers)	Report of the July 7th Review Committee, 2006 The Home Office report on lessons from the emergency response,2006 London Resilience Report "Looking Back. Moving Forward", 2006 For full details see Bibliography and also http://news.bbc.co.uk/1/hi/uk/5370666.stm
2005	Hurricane Katrina United States of America	See reports available on www.ukresilience.info and www.bbc.co.uk
2007	Grayrigg 23rd February 2007 Train Derailment 1 person died	Rail Accident Investigation Branch have produced a report available at www.raib.gov.uk

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www.interpol.int
International Protocols for Disaster Victim Identification are available on a section of this site

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Danielle Osborn and Melissa Brackley

Design and Proof Reading
Captain Thomas Easthope

Contact Details

Lucy Easthope LLB MSc
L.C.Easthope@lancaster.ac.uk