



Picture courtesy of Northern Ireland Fire & Rescue Service

Within an Integrated Risk Management Plan, local fire & rescue authorities are required to set out how they intend to make adequate provision for prevention and emergency intervention to meet efficiently all normal requirements. In order to understand the relevance of the **Critical Attendance Standard (CAST)** to integrated risk management planning it is first necessary to have some understanding of what is actually required of the fire & rescue service at emergency incidents.

The first widely accepted description of what a Firefighter's job entails was written over a century ago by Sir Eyre Massey Shaw. In his book *'Fires and Fire Brigades'* Shaw stated;

"A fireman, to be successful, must enter buildings; he must get in below, above, on every side, from opposite houses, over back walls, over side walls, through panels of doors, through windows, through loopholes, through skylights, through holes cut by himself in the gates, the walls, the roof; he must know how to reach the attic from the basement by ladders placed on half burned stairs, and the basement from the attic by rope made fast on a chimney. His whole success depends on getting in and remaining there and he must always carry his appliances with him, as without them he is of no use."

In 1960 the Fire Brigades Union launched the FBU's campaign for a new and highly trained technical fire service. The task, as the union conceived it, was to **'change the service into a modern fire protection – firefighting force'**.

The challenges facing the fire service in organising to support this vision were detailed in the FBU document *'A Service for the Sixties'*. Launching this document at the 1960 FBU Annual Conference in Rothesay, John Horner, the FBU General Secretary, stated:

"We say in this document that when all is said and done, at the end of it firefighting comes down to this; that a small number of men will go into a darkened,



Picture courtesy of the Hereford Times



Sun Valley Fire 1993

smoke-logged building not knowing what they are going to meet, having faith in each other, in the long run prepared to risk their lives to save the lives of other people. In the long run, no matter what transformations we effect in the fire service, firefighting in its final stages remains just that. And we do not forget it.”

Today’s Firefighters and Firefighters (Control) will perhaps better recognise and be able to identify with this less glamorous description of the realities of the job.

Although both these statements were written many years ago, their relevance to the current integrated risk management planning process is clear. In essence they deal with what is required to actually get the job done, in terms of Firefighters, equipment, personal skills and courage.

Standard Operating Procedures (SOPs)

Standard Operating Procedures (SOPs) – the way the fire & rescue service does things at fires and other emergency incidents – have developed over numerous years. The old Fire Service Drill Book was full of very basic SOPs which were written and religiously trained against to ensure quick and effective discharge of the more routine tasks undertaken at fires.

Most Firefighters will remember their first introduction to these on their recruit’s course, where in a 4-man (sic) Pump Drill No.3 ran out the first length of hose from the pump, No.1 the second length (taking a branch), etc. etc.

The ‘Manuals of Firemanship’ produced by the Home Office from the 1950s onward included many SOPs, covering procedures for emergency incidents other than fires, such as road traffic accidents, trench collapses and sewer rescues. This was in spite of the fact that the service had no statutory responsibility to attend such emergency incidents.

Standard Operating Procedures are constructed with the aim of ensuring that the requirements placed on Firefighters, and their actions at emergency incidents, do not exceed accepted minimum standards of health & safety. In simple terms they are designed to minimise the risks which Firefighters routinely face in situations which are in themselves inherently risky.

SOPs have developed over the years not only to match the complexity of incidents attended by the service, but also in an attempt to maintain compliance with a raft of legislative health & safety requirements placed on local authority employers. European legislation has arguably had the biggest single influence on the way the UK fire & rescue service plans to do things at emergency incidents.

EMERGENCY INTERVENTION FACTORY FIRE HSE IMPROVEMENT NOTICE ISSUED

Fire & Rescue Control received an emergency call to a roof fire at a poultry processing and packaging plant. Two fire appliances were initially mobilised to the incident.

On arrival at the fire an ‘assistance’ message was sent to Fire & Rescue Control requesting further fire appliances to be mobilised to the incident.

Firefighters wearing breathing apparatus (BA) were committed to the building to fight the fire. However unknown to BA crews the fire was rapidly developing in the un-divided and un-ventilated roof space. This was constructed of panels which had an inflammable insulating section sandwiched between outer protective layers and the fire spread was severely weakening the structure.

The ceiling structure collapsed and brought down plant located in the roof space trapping a BA crew and engulfing the entire block.

Further assistance messages were sent, including a request for an Aerial Appliance however the aerial appliance was delayed as there were no Firefighters available on the nearest station to crew this appliance.

Two Firefighters lost their lives at the incident.

Following an investigation by the Health & Safety Executive the Brigade was issued with two HSE Improvement Notices. The first HSE notice related to Breathing Apparatus SOPs and the second HSE notice required the brigade to improve its systems for gathering information on ‘risk buildings’ in its area, and to improve its systems for passing this risk information to Firefighters who may be sent to such buildings, in order that the correct SOPs could be employed. 1993



FBU Policy – Annual Conference 1995 Resolution 52 HEALTH AND SAFETY

In the light of resolution 76 carried at Annual Conference 1994, Conference instructs the Executive Council to assess whether appropriate and systematic risk assessment exists at all levels within the UK Fire Service, with proper levels of consultation, guidance and training.

If this is found not to exist, Conference instructs the Executive Council to undertake a national campaign of action, as part of which FBU Health and Safety representatives would be fully trained to enable them to identify unsatisfactory health and safety arrangements locally, produce their own risk assessments appropriate to the risk, and implement any practical preventative measures, whether with or without the agreement of management. **DEVON As amended by SURREY**

Unfortunately, and in a similar manner to the development of fire safety legislation (**Section 1**), changes to Standard Operating Procedures have often followed the deaths or serious injury of Firefighters at emergency incidents, or during training for such incidents.

It has long been recognised by Firefighters that to employ Standard Operating Procedures effectively, and to safeguard health & safety, it is necessary to have adequate numbers of personnel and equipment available at incidents.

Risk Assessment – The Management of Health & Safety at Work Regulations (MHSAW)

In the 1990's the manner in which consideration of employee health & safety was approached in the UK underwent a fundamental change. European legislation was enacted which shifted the emphasis from prescriptive requirements to requirements and procedures based on an assessment of risk.

The Management of Health & Safety at Work (MHSAW) Regulations placed a requirement on employers to consider all work activities from the perspective of the risk they posed to their employees, and the risk posed to other persons who could be affected by the way their employees were doing things.

In spite of arguments to the contrary it was ruled that fire & rescue authorities (as employers) were not exempt from the requirement to comply with this legislation. This had major implications for the service, particularly in relation to procedures at emergency incidents, where the risks posed to Firefighters were potentially the greatest.

Fire & Rescue Service Employers now had to develop Standard Operating Procedures for Firefighters which could be proved to have actively reduced the risk to a level that was considered as acceptable. For this purpose risk could basically be considered as being:

- **Intolerable** – the risk must be reduced
- **Tolerable** – the risk should be reduced as far as reasonably practicable using 'risk-control' measures
- **Broadly Acceptable** – consider whether the cost of further risk-reduction outweighs the benefits
- **Negligible** – the risk is insignificant (but must be monitored)

Section 2 page 23 gives a fuller explanation of the risk assessment process and requirements.

The Chief and Assistant Chief Fire Officers Association (CACFOA) summed up the new health & safety requirement in their 1996 publication 'Guidance on the Application of Risk Assessment in the Fire Service', stating that it was now necessary to:

“... define the safety critical support issues for fire service personnel and others ...” (Guidance on the Application of Risk Assessment in the Fire Service – page 6)

The initial fire & rescue service response to this new health & safety requirement was to develop a range of Generic Risk Assessments (GRAs) covering the broad range of risks that Firefighters could routinely expect to encounter at emergency incidents. The GRAs were grouped into:

- rescues (from ice, lifts, sewers, collapsed structures etc);
- fighting fires;
- incidents involving transport systems (road, rail, air etc);
- generic hazards (such as acetylene, electricity, chemical hazards, civil disturbances etc.).

These GRAs were published in 1998 under the title 'A Guide to Operational Risk Assessment'. It was however stressed to fire & rescue authorities at the time that the GRAs simply provided information to inform the authority's own risk assessments and SOPs for the various incidents which Firefighters could routinely expect to attend:

“It is imperative that brigades use these assessments as part of their own risk assessment strategy not as an alternative or substitute to it. They are designed to help brigades assess their own risks, so they should be included in the brigade's normal planning process.”

(A Guide to Operational Risk Assessment – page 4)

FBU Policy – Annual Conference 1994 Resolution 61 STAFFING LEVELS

Conference demands that minimum staffing of water ladders and water tenders or equivalent be five, and all special appliances have a minimum of two, one to be a junior officer, at all times. These staffing levels to be reinforced by competent risk assessment in all areas of operational activity, as identified in Management of Health and Safety at Work Regulations 1992 and that establishment figures are increased to accommodate this. **DORSET As amended by MERSEYSIDE, FIFE, GMC & BUCKINGHAMSHIRE**



Simply adopting the GRAs alone did not discharge the individual employer’s responsibility to carry out a full risk assessment, and to subsequently ensure that the Standard Operating Procedures assessed as being necessary were put in place. There were three further publications in the series:

- A Guide for Managers;
- A Guide for Senior Officers;
- Dynamic Management of Risk at Operational Incidents – a fire service guide.



The ‘Dynamic Management of Risk at Operational Incidents’ guide is personal issue to all Firefighters in the UK. The guide states as a maxim:

“We may risk our lives a lot, in a highly calculated manner, to protect saveable lives.”

This ‘highly calculated manner’ refers to the Standard Operating Procedures that are developed and trained against in an attempt to ensure that risk is minimised as far as possible. However to have any real meaning from a risk assessment perspective, SOPs have to reflect the actual situation (and associated risk) which Firefighters are faced with at operational incidents.

The Review of Standards of Fire Cover – Pathfinder

It is perhaps no surprise that the 1995 Audit Commission Report into the fire & rescue service (*In the Line of Fire*) recommended a shift to a risk-based system for planning emergency responses. The Audit Commission report was,

after all, written at the same time as the MHSWA Regulations came into force in the UK. The Management of Health & Safety at Work Regulations introduced the concept of risk assessment as the planning tool to determine correct Standard Operating Procedures. In short, effective Standard Operating Procedures are dependant on accurate risk assessment.

EMERGENCY INTERVENTION HOUSE FIRE – HSE IMPROVEMENT NOTICE ISSUED

Firefighters (Control) received an emergency call for a house on fire. The initial information from the caller was that there were no persons in the house. One fire appliance was mobilised to the incident however on receipt of further emergency calls stating that persons were still in the house a second fire appliance was mobilised from a neighbouring station.

The first fire & rescue crew to arrive discovered that thick smoke was issuing from the house. They were informed by members of the public who had gathered outside the house that two children were still inside. Two Firefighters in breathing apparatus entered the house and rescued one child, and resuscitation attempts were started. The Firefighters then re-entered the house to search for the second child, however they were caught in a backdraught (a sudden ignition of smoke and gases produced by the fire) and themselves became trapped in the property.

The remainder of the crew attempted to rescue the Firefighters but they were severely overstretched in terms of resources. When the second fire appliance arrived, Firefighters from that crew eventually managed to drag the trapped Firefighters out of the house.

Two Firefighters and one child were killed in the incident.

The LAG in time between the arrival of the first fire appliance and the second fire appliance was 9 minutes and 47 seconds. If both fire appliances had been mobilised at the same time the LAG in arrival times would have been 4 minutes and nine seconds. The backdraught occurred 5 minutes and 46 seconds after the first crew arrived at the house fire.

Following an investigation by the Health & Safety Executive the Brigade was issued with a HSE Improvement Notice. The notice required the brigade to introduce systems for training personnel in recognition and SOPs for potential backdraught and flashover situations. 1996



Blaina House Fire – February 1996

Even the casual observer would correctly identify that this risk assessment, by necessity, must include consideration of the number of Firefighters and the type of equipment needed to effectively minimise risk to those Firefighters (the employees) sent to emergency incidents. *'In the Line of Fire'* prompted the **'Review of Standards of Emergency Cover'** (Section 1 page 4). The review considered not only an assessment of risk to the community, but also an assessment of the risks faced by Firefighters attending incidents as part of the emergency response, and critically, an assessment of how to maintain this risk at an acceptable or tolerable level. In the fire & rescue service this review became known as the **'Pathfinder'** because the 11 brigades who carried out the series of computer-based trials to test the review methodology were called **'Pathfinder Brigades'**.

The Pathfinder Review developed a range of what were termed **'Worst Case Planning Scenarios' (WCPS)**. The WCPS built on the work that had already been undertaken on Generic Risk Assessment as detailed in the *'Guide to Operational Risk Assessment'* referred to above. By assessing the actual situation that Firefighters were faced with at emergency incidents, the WCPS methodology was then able to determine what was needed to deal with the emergency incident and what was needed to maintain risks to Firefighters (as far as reasonably practicable) at an acceptable level.

FBU Policy – Annual Conference 1991 Resolution 79 – FIRE COVER

Conference demands that all property fire calls received are responded to with an attendance of at least 2 pumps, and in the case of "A" risk 3 pumps, irrespective of if the call is received from an AFA.

DORSET

FBU Policy – Annual Conference 1997 Resolution 33 MINIMUM STAFFING

This Conference demands that following the Health and Safety Report on the Blaina incident and in line with Conference Policy of 1994, that the Union vociferously pursue its policy on Minimum Staffing of appliances, including a public awareness campaign highlighting staffing deficiencies.

WEST MIDLANDS

As amended by SOUTH YORKSHIRE

Pathfinder – Worst Case Planning Scenarios (WCPS)

The WCPS system for planning emergency responses was based on the recognised risk assessment process of identifying the hazard, assessing the risk posed by the hazard, and then determining the necessary 'control' measures necessary to reduce the risk to acceptable or tolerable levels (Section 2 page 23).

The Worst Case Planning Scenarios were only designed as planning tools to assist fire & rescue authorities in determining the resources required for a limited range of emergency incidents. They did not include detail to assist in planning emergency responses for larger incidents such as multiple road traffic accidents (where many casualties are trapped) or large aircraft or rail crashes. Instead they sought to provide clear risk-based guidance on the resource requirements for those emergency incidents that brigades would more routinely expect to attend. Despite the connotations that might be associated with the term *'Worst Case Planning Scenario'*, the research project stated clearly that a WCPS was:

"... not the worst case that can be imagined, but the worst case for which Fire Service Emergency Cover is to be planned in a particular risk area and should reflect what is reasonable provision for that area."

The research project first sought to establish the different types of emergency incident routinely attended by the fire & rescue service. 35 identified incident scenarios were grouped into different 'types' of emergency incident as follows;

- fires in buildings;
- casualty retrieval incidents (such as water rescues and hazardous material rescues);
- casualty trapped incidents (such as road traffic incidents);
- 3 lesser scenarios (covering small fires)

Having determined the incident types, the required emergency response for a given incident scenario (for example a single occupancy house fire where it was anticipated that rescue would be necessary via an internal staircase) could then be established.



EMERGENCY INTERVENTION HIGH RISE FLAT FIRE HSE IMPROVEMENT NOTICE ISSUED

Fire & Rescue Control received an emergency call to a fire in a 26-floor high-rise flat within a mile of the city centre. The fire was reported as being on the twenty-second floor. On arrival at the building the Firefighters initiated the Standard Operating Procedure for high rise building fires. Two Firefighters from the initial emergency response rigged in breathing apparatus and started up their sets becoming self-contained. Accompanied by the fire & rescue service Incident Commander and a Firefighter designated as the Breathing Apparatus Entry Control Officer (BAECO) they proceeded in the lift to the floor directly below the fire to set up a bridge-head control point from which to direct firefighting & rescue operations.

The lift stopped at the twenty-first floor however when the lift doors opened the Firefighters found that it was the twenty first, and not the twenty second floor which was on fire. The lobby was thick with smoke and there was intense heat and the Firefighters were unable to close the lift doors as the door close button would not work. The lift car filled with smoke and overcame the Incident Commander and BAECO who collapsed.

A second crew of Firefighters in BA arrived on the twenty-first floor in a second lift. When they discovered that the fire was actually on this floor they took the lift immediately to the twentieth floor and proceeded on foot up the stairwell to the twenty-first floor where they assisted the first BA crew in rescuing one adult, one child, the Incident Commander and the BAECO. These casualties were taken down the stairwell to the twentieth floor, and then to the ground floor using the second lift which was still operating.

Emergency resuscitation attempts were made on the fire service Incident Commander, and the other casualties were treated for smoke inhalation.

Following an investigation by the Health & Safety Executive the Brigade was issued with a HSE Improvement Notice. The notice required the brigade to provide a system of work (SOP) which took account of the likelihood of the wrong fire floor being reported to the fire & rescue service in multi-storey building incidents. The notice stated that in practice and experience there is often confusion and doubt about this information.

The Notice also required the brigade to provide command & control procedures in high rise buildings which aimed to protect the health & safety of other persons not in their employment (in this case the ambulance service personnel), who might be put at risk by the brigade's SOPs. 2003

Determining the Emergency Response

The required emergency response was determined by assessing the real situation faced by Firefighters at emergency incidents, and then planning risk-control measures which dealt with these 'real world' situations. Pathfinder sought to establish what actually happened at a range of common emergency incidents – what the fire & rescue service was actually faced with when they turned up – and the response and resource requirements (numbers of Firefighters and equipment) that would be required to implement effective Standard Operating Procedures. Experienced fire & rescue service Incident Commanders were interviewed to determine both the emergency incidents that were routinely faced, and the number of Firefighters and the amount and type of equipment that would be needed at these different types of emergency incident.

The Qualitative experience of these operational Crew and Watch Managers was critical to the process. They are almost always the first fire officers to arrive at an emergency incident quite simply because they are part of the crew on the fire appliances sent when an emergency call is first received by a brigade.

In fire & rescue service circles one of the more commonly known conclusions of this element of the 'Pathfinder' research project is that 9 Firefighters are needed at a house fire where persons are reported as being trapped. This level of response is required to deal with the incident effectively whilst ensuring that the Firefighters who deal with the incident are not placed at greater risk than is avoidable.

It is interesting to note that the 1985 Review of Standards of Fire Cover attempted a similar exercise to determine what was actually needed at fires. However the research methods employed in the 1985 Review were not robust and no conclusions could be agreed by the Committee conducting that review.

Concerns with Worst Case Planning Scenarios

As stated above the final part of the Review of Standards of Emergency Cover research project involved applying the WCPS methodology to the 11 brigades who had been selected to take part in the Pathfinder trials. This was done using a computer model of the brigade area. The aim was to find out what results a risk-based system of planning emergency responses would produce. Areas of risk within the brigade (based on historical fire and emergency

FBU Policy – Annual Conference 1994 Resolution 94 SAFETY OF FIREFIGHTERS

This Conference calls upon the Executive Council to ensure that the safety of firefighters, when attending fires in high rise and high fire risk buildings, is considered by the appropriate committees of the Central Fire Brigades Advisory Council and any other National Committees of the Home Office, Department of the Environment and the British Standards Institution and the appropriate technical guidance produced and issued to fire authorities. **WEST MIDLANDS**

FBU Policy – Annual Conference 1999 Resolution 40 – FUNDING

Conference demands that the Executive Council meet with the relative ministerial departments in order that proper funding for the Fire Service can be achieved. The new funding method must reflect risk assessment and current commitments to the safe person concept and should therefore be an increase on the current Local Authority Fire Service budgets. **TYNE & WEAR As amended by LONDON**

incidence data, and population socio-economic groupings) were first loaded onto the computer. The Firefighter and equipment requirements for the different emergency incidents (WCPS) predicted as being likely to occur were then mapped.

The results caused concern. In some cases brigades found that they would have to more than double in size to meet the risk-based requirements of the WCPS for the more commonly occurring incidents. This was in part due to the way in which the computer model had been set up to run. In calculating the fire & rescue service attendance times at incidents, the computer model did not deem the service to have arrived until the last appliance attending the incident as part of the initial emergency response had arrived. For emergency responses to incidents involving the mobilisation of fire appliances from more than one fire station, using the attendance time of the last fire appliance to arrive significantly affected the results and potential resource implications for fire & rescue authorities.

However irrespective of the resource implications which the Pathfinder trials produced, it could not be argued that the WCPS methodology had calculated the wrong resource requirements (the numbers of Firefighters and equipment) needed at emergency

incidents. The assessment was, after all, determined using a robust methodology and was grounded in qualitative information (actual experience) of what was needed to deal effectively with routine emergency incidents without increasing the risk to which Firefighters were exposed above an ‘acceptable’ level.

The Critical Attendance Standard (CAST)

The Review of Standards of Emergency Cover and Worst Case Planning Scenario methodology was the most robust risk-based determination of the initial fire & rescue service resource requirements for routine emergency incidents that had ever been undertaken in the UK.

However the trials conducted by the 11 Pathfinder brigades were flawed - not as a result of the initial research process or methodology, but due to a key assumption in the software model.

As stated above, the computer model assumed that there was no fire & rescue service response until the last fire appliance attending the incident as part of the initial emergency attendance had arrived. This assumption ignored the effect of fire appliances arriving before the last fire appliance in terms of their ability to reduce (or as a minimum to control) the risk to life and property at the incident. The resource requirements however – the numbers of Firefighters and equipment assessed as being necessary to deal with certain types of incidents - were correct. These resources had been determined through qualitative analysis (what is known from experience) to ensure that the job could be done without compromising unnecessarily the safety of Firefighters.

It has therefore been necessary to establish a Critical Attendance Standard (CAST) methodology to deal with this apparent conflict.



Picture courtesy of the Press Association



The CAST methodology allows for a tightly-controlled phased arrival of fire appliances at emergency incidents. It takes account of the *effect* of this phased arrival on both the incident *and* on the ability of Firefighters to carry out Standard Operating Procedures without increasing the risk to themselves above a level which they would normally expect to face in situations which are themselves inherently risky. Determining what is an acceptable phased arrival – or **LAG** – in fire appliance attendance times i.e. the time between the arrival of the first fire appliance and the second fire appliance sent as part of the initial emergency response to an incident, is critical.



Picture courtesy of the Press Association

Why LAG is Important

Planning arrangements under the 1985 Standards of Fire Cover included an ‘implied’ acceptance that the mobilising protocols drove the Standard Operating Procedures put into place at emergency incidents. Indeed many SOPs at local and national level have been written with one eye clearly focused on these mobilising standards. As an example Stage 1 Breathing Apparatus Entry Control Procedures (Technical Bulletin 1/97) do not require an Emergency Team of BA wearers to be available in case Firefighters who have been sent into a building for firefighting or rescue purposes need themselves to be rescued. This SOP is not based on an assessment of risk to Firefighters, but on availability of firefighting resources. Fires in 1985 Standards of Fire Cover ‘C’, ‘D’ and ‘Remote-Rural’ risk areas only required an attendance of one fire appliance under the 1985 Standards, and one fire appliance does not carry enough Firefighters to set up a BA Emergency Team!

From a health & safety perspective this ‘acceptance’ was questionable at best; nonetheless it has formed the basis of planning for fire & rescue service emergency responses for some 19 years. In their defence the 1985 Standards did provide a quantitative planning tool for fire cover. They were seen by almost all stakeholders as providing a safety net, a

TRAINING ACCIDENT WATER RESCUE INVESTIGATION IN PLACE

Fire & rescue crews were mobilised to a man trapped in a weir. En-route to the incident it became apparent that fire & rescue crews from another station had got into difficulties whilst undertaking a routine training exercise, and it was Firefighters from that crew who were trapped in the weir. The service’s inflatable rescue boat they had been using in the training exercise had got caught in the weir and two Firefighters had been thrown into the river. One of the Firefighters had struck his head when he was thrown into the water. The blow had rendered him unconscious.

This Firefighter was caught in the weir, and was estimated to have been under the water for approximately 8 to 10 minutes before other Firefighters were able to rescue him. When he was pulled out of the water he was not breathing.

Resuscitation attempts by Firefighters assisted by a paramedic were carried out on the river bank and continued in the ambulance on the way to hospital.

The Firefighter was admitted to the Intensive Care Unit and regained consciousness 48 hours later, after sedation treatment to reduce swelling to the brain had been discontinued. He is currently on sick leave. An investigation is in progress. 2004

measure against which fire & rescue authorities should plan the number and distribution of fire stations, and the crewing systems employed on those stations. Nonetheless the 1985 Standards were fundamentally flawed; the so-called ‘safety net’ was and is a contradiction in terms, ‘skewed’ by the thinking that these national response standards automatically protected Firefighters.

In too many cases what was actually happening at emergency incidents during this period (and is still happening today) stands at odds with what it was ‘comfortable’ to believe was happening. Very often the Standard Operating Procedures against which Firefighters were training simply could not be put into practice in the real world due to a lack of resources being available when they were most needed – in the early stages of the incident. Delays in the arrival of fire appliances – even delays which did not result in a failure to meet the 1985 Standards of Fire Cover - often resulted in risks being taken over and above those planned for under Standard Operating Procedures.

Whilst it may be comfortable to consider these as acts of individual heroism – and many of these take place – the simple fact remains that on too many occasions Firefighters have no alternative other than to act when faced with the incident. They are, after all, the professionals who have been sent to deal with an emergency situation, and there is a public expectation that they will act when they arrive.

When someone is screaming at you to act, to rescue their parent, their partner or their child, and you are there as part of the fire service response, it does not matter how 'self-disciplined to work within accepted systems of work' you may be, a Firefighter will act.

These are not individual decisions. Such is the frequency of this event that they have become accepted group decisions amongst Firefighters throughout the service. In short – they are given no alternative.

The Review of Standards of Emergency Cover recognised this problem, and the 'Pathfinder' report is crystal clear on this point. In any planning decisions relating to when the required Firefighters and equipment should arrive at an emergency incident, it warns against placing Firefighters in a position where they have no option but to act – even when there are insufficient resources available:

“... it is essential to avoid situations which could motivate or pressurise firefighters to act unsafely in the interests of saving life.”

(Review of Standards of Emergency Cover - Technical Paper C – Response & Resource Requirements)



Picture courtesy of Firepix International

FBU Policy – Annual Conference 1998 Resolution 41 – STAFFING LEVEL

In light of Technical Bulletin 1/97, this Conference demands that the Executive Council negotiate with the Employers a policy that every Pumping Appliance has a minimum crew of five for every type of incident. **NORFOLK**

FBU Policy – Annual Conference 2000 Resolution 26 MINIMUM CREW LEVELS

This Conference re-affirms its demand for a minimum crew level of five on all front line pumping appliances. Conference is appalled at the continued use of three riders on such appliances and demands that this dangerous practice ceases with immediate effect to ensure the safety of our members and the public. **BUCKINGHAMSHIRE**

Assessing LAG under the Critical Attendance Standard

Using the Critical Attendance Standard methodology, the maximum LAG for Standard Operating Procedure purposes is:

APPLIANCE ARRIVAL	MAXIMUM LAG
arrival of first fire appliance to arrival of second fire appliance	3 minutes
arrival of second fire appliance to arrival of third fire appliance	2 minutes

The maximum 3 minute LAG between the arrival of the first & second fire appliances at an incident assumes an attendance of 5 Firefighters on the first fire appliance to attend every incident covered by a CAST planning scenario. The 3 minute LAG reflects

- the time required for an initial assessment of the incident to be made by the first attending fire & rescue service Incident Commander;
- the time required for initial briefing and deployment of crews (including where necessary deployment in breathing apparatus) before the arrival of the second fire appliance.

The maximum 2 minute LAG between the arrival of the second & third fire appliances at an incident covered by a CAST planning scenario reflects:

- the time required for the Incident Commander to brief the Crew Manager of the second fire appliance attending the incident and for the crew from the second fire appliance to be deployed, prior to the arrival of the third fire appliance.

Employing the CAST methodology supports the building of effective command structures at emergency incidents in line with national Incident Command Standard Operating Procedures. Span of Control maximums (the number of direct lines of communication that any Firefighter should have in a developing command structure) are an additional consideration for responses to incidents which require larger fire & rescue service incident command structures.

(Fire Service Manual – Volume 2 – Fire Service Operations – Incident Command refers).

Increasing LAG above these maximums potentially compromises the safety of Firefighters who will be left with insufficient resources to work within Standard Operating Procedures and safe systems of work at emergency incidents.

The Firefighters will have been knowingly placed in a situation by their employer where it is reasonably foreseeable that they will be motivated or pressurised to act unsafely in the interests of saving life. The pressure to act unsafely will be as a result of a deliberate planning decision which delays the arrival of the necessary resources for an emergency incident which can be reasonably expected to occur.

Any risk assessments which seek to introduce or justify excessive LAG times will have failed to risk assess the real situation faced by Firefighters at emergency incidents. In short, the risk assessment will not be suitable and sufficient.



CAST Planning Scenarios

Incident Group	Incident Type	CAST Scenario Description	Ref. No.	MINIMUM Command Personnel & Firefighters Required in initial response
FDR 1 Fires: DWELLINGS	Multiple Occupancy High Rise	2 to 4 casualties involved rescue via internal staircase	CAST 1	Command – 2 Firefighters – 11 TOTAL – 13
	Multiple Occupancy Low Rise	2 to 4 casualties involved rescue via 135 ladder	CAST 2	Command – 1 Firefighters – 9 TOTAL – 10
		2 to 4 casualties involved rescue via 9/105 ladder	CAST 3	Command – 1 Firefighters – 9 TOTAL – 10
		2 to 4 casualties involved rescue via internal staircase	CAST 4	Command – 1 Firefighters – 8 TOTAL – 9
	Multiple Occupancy Medium Rise	2 to 4 casualties involved rescue via 135 ladder	CAST 5	Command – 1 Firefighters – 9 TOTAL – 10
		2 to 4 casualties involved rescue via 9/105 ladder	CAST 6	Command – 1 Firefighters – 9 TOTAL – 10
		2 to 4 casualties involved rescue via aerial appliance	CAST 7	Command – 2 Firefighters – 11 TOTAL – 13
		2 to 4 casualties involved rescue via internal staircase	CAST 8	Command – 1 Firefighters – 8 TOTAL – 9
	Multiple Occupancy Single Basement	2 to 4 casualties involved rescue via internal staircase	CAST 9	Command – 1 Firefighters – 8 TOTAL – 9
	Single Occupancy	2 to 4 casualties involved rescue via 135 ladder	CAST 10	Command – 1 Firefighters – 9 TOTAL – 10
		2 to 4 casualties involved rescue via 9/105 ladder	CAST 11	Command – 1 Firefighters – 9 TOTAL – 10
		2 to 4 casualties involved rescue via internal staircase	CAST 12	Command – 1 Firefighters – 8 TOTAL – 9
	Underground Complex	2 to 4 casualties involved – using firefighting lift	CAST 13	Command – 2 Firefighters – 12 TOTAL – 14



The Critical Attendance Standard (CAST)

CAST Planning Scenarios *continued*

Incident Group	Incident Type	CAST Scenario Description	Ref. No.	MINIMUM Command Personnel & Firefighters Required in initial response
Special Services: CASUALTY RETRIEVAL FROM:	Hazardous Material Incident	Generic incident – BA CPS with HRJ – 1 casualty retrieved	CAST 14	Command – 3 Firefighters – 15 TOTAL – 18
		Generic incident – BA GTS with HRJ – 1 casualty retrieved	CAST 15	Command – 3 Firefighters – 15 TOTAL – 18
	Height	Rope rescue equipment – 1 casualty retrieved	CAST 16	Command – 2 Firefighters – 7 TOTAL – 9
		With 135 extension ladder – 1 casualty retrieved	CAST 17	Command – 1 Firefighters – 4 TOTAL – 5
		With 9/105 extension ladder – 1 casualty retrieved	CAST 18	Command – 1 Firefighters – 3 TOTAL – 4
		With aerial appliance – 1 casualty retrieved	CAST 19	Command – 1 Firefighters – 3 TOTAL – 4
	Lift	Lift – 1 casualty retrieved	CAST 20	Command – 1 Firefighters – 4 TOTAL – 5
	Lock-in	Conventional – 1 casualty retrieved	CAST 21	Command – 1 Firefighters – 2 TOTAL – 3
		With 135 extension ladder – 1 casualty retrieved	CAST 22	Command – 1 Firefighters – 4 TOTAL – 5
		With 9/105 extension ladder – 1 casualty retrieved	CAST 23	Command – 1 Firefighters – 3 TOTAL – 4
		With aerial appliance – 1 casualty retrieved	CAST 24	Command – 1 Firefighters – 3 TOTAL – 4
		With short extension ladder – 1 casualty retrieved	CAST 25	Command – 1 Firefighters – 2 TOTAL – 3
	Water	1 casualty retrieved	CAST 26	Command – 2 Firefighters – 5 TOTAL – 7



CAST Planning Scenarios *continued*

Incident Group	Incident Type	CAST Scenario Description	Ref. No.	MINIMUM Command Personnel & Firefighters Required in initial response
Special Services: Casualty Trapped	Extrication from Machinery / Structures	1 casualty trapped	CAST 27	Command – 2 Firefighters – 6 TOTAL – 8
	Rail Transport Above Ground Accident	2 carriages – 1 casualty trapped in each carriage	CAST 28	Command – 2 Firefighters – 11 TOTAL – 13
	RTA	Generic incident – 2 vehicles – 1 casualty trapped in each vehicle	CAST 29	Command – 1 Firefighters – 9 TOTAL – 10
	Ship Accident	1 ship – 2 casualties trapped	CAST 30	Command – 2 Firefighters – 9 TOTAL – 11
	Small Aircraft Accident	1 aircraft – 2 casualties trapped – with LX foam branch	CAST 31	Command – 3 Firefighters – 8 TOTAL – 11
	Small Boat Accident	1 small boat – 1 casualty trapped	CAST 32	Command – 1 Firefighters – 6 TOTAL – 7
FDR1 Fires: Property Other Than Buildings		Generic small fire	CAST 33	Command – 1 Firefighters – 3 TOTAL – 4
FDR 3 Fires	Chimney	Generic small fire	CAST 34	Command – 1 Firefighters – 4 TOTAL – 5
	Secondary	Generic small fire	CAST 35	Command – 1 Firefighters – 3 TOTAL – 4

Where the required number of personnel and equipment for an emergency incident can be transported in one fire appliance the LAG times clearly do not apply. The CAST Planning Scenario system assumes that Firefighters attending as part of the initial fire & rescue service response to an emergency incident have received the necessary training for the anticipated incident and are deemed to be competent to carry out the tasks they are assigned.

Detailed risk and task analyses for the above CAST Planning Scenarios are included in **Section 9 pages 108-139**.