Model SOP Standard Operating Procedure

Firetactics.com
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1. TACTICAL DEPLOYMENT INTO FIRE INVOLVED STRUCTURES

Sections

1. Purpose

The following bulletin serves as a training document that covers a range of critical tasking issues associated with the safe and effective deployment of firefighters into fire involved structures. It is not a complete SOP by any means but simply stands to inform of a risk-assessed process for compartment and structural fire-fighting.

However, this document may serve as a model upon which more detailed operational procedures may be developed.

All students are strongly advised to follow their own departmental SOPs at all times. Any deviation from such procedure must only be made with good reason and should be held accountable at a later stage.

2. Pre-planning

It is essential that familiarization visits are made to all large volume structures, or those presenting excessive or unusual risks, so that plans may are organised and provided on-site in special premises information boxes located at main entry points. Alternatively, these may be held on computer terminals and down loaded into a fire engine's computer system as they arrive on-scene.

2.1 Essential Criteria of Pre-planning

- Implement a system of risk profiling and familiarization visits
- Record and document visits and make plans available on the primary response
- Ensure that building plans and pre-plans relay critical information to the fire service
- Pre-plans must be easy to access and read through bulleted points of importance

3. Information 'in'

Even before arrival on-scene the crew commanders will be taking in key pieces of information. The dispatcher may be passing on some vital communications and even from a distance there may be important fire behaviour indicators visible. On arrival the fire commander must then carry out a sixty-

second reconnaissance. Some call this the 'size-up' and during these vital first few seconds following arrival the commander must attempt to locate the area and extent of fire involvement. Occupant status must also be ascertained and information pertaining to any special risks such as gas cylinders should be sought from bystanders. A view should be sought of as many sides of the involved structure as possible and if the structure is small (less than 100 sq.m) then a 360 degree walk around should be attempted. This may provide critical information as to the fire's location or stage of development.

3.1 60-Second 'Size-up' (Information 'in)
- Sixty second reconnaissance
- 360 degree walk-around where possible
- Locate the fire and gauge the extent of fire development
- Ascertain occupant status
- Establish special risks

4. Risk Management

Risk Management is sometimes confused with 'Size-up' but it shouldn't be. Size-up is information gathering whereas Risk Assessment is an on-scene *balance of probability calculation* that assesses the level of acceptable exposure to risk for firefighters against the potential gains. The risk managed approach follows this process –

4.1 The Key Principles of Assessing and Managing Risk
- Identify the exposure to risk
- Accept the level of risk where correctly balanced against the potential for gain, or
- Remove the risk, or
- Implement risk control measures that will lessen the risk to an acceptable level

5. Information 'out'

Commanders must be certain that they have obtained reasonably reliable information and that they communicate relevant points to firefighters before they are deployed. Pre-deployment briefings must be clear and concise in delivering viable objectives. Where firefighters are deployed without clear instructions they may not achieve the objectives at all and may deploy without purpose or direction. It is absolutely critical that key information is communicated clearly, shared with all personnel in terms of relevance and updated as necessary.

5.1 Information 'out' – Key Factors
- Before firefighters are deployed they should be effectively briefed as to their tactical objectives
- Pre-deployment briefings must be **clear** and **concise** and given in a **calm** manner
- Communicate effectively by ensuring the right message is received
- Share information with key personnel and other commanders

6. Situation Awareness

Situation awareness and firefighter disorientation are two completely different states. A lack of situation awareness is the result of from poor training or a lack of conditioning. It costs lives. It means that commanders or firefighters are unable to identify the real issues of importance and this is often the result of 'tunnel vision'

6.1 How to increase Situational Awareness
- Train personnel to identify and prioritise the **real issues** on-scene
- Train firefighters effectively in order to discourage 'tunnel vision'

- Ensure training is **regular** and **realistic** in order to enhance a **calm approach** at all times – this stems from a high level of fire-ground experience but may also evolve within a truly effective training culture where 'real life' experience might be lacking
- Include 'situation response' and situation aware' training in your programme

7. Staffing

The issue of staffing is directly related to a performance index when considering primary tasking during those vital first few minutes when the initial response arrives on scene. Put quite simply, a fewer number of well-trained firefighters will generally out perform a larger number of poorly trained firefighters in achieving primary objectives.

However, there are limitations on the minimum number of firefighters who are able to function safely and effectively. A Critical Task Performance Index (CTPI) is one way of assessing the performance capability, within realistic, safe and effective limits, of variable sized teams of firefighters in achieving tactical objectives in specific situations.

7.1 Typical (Essential) Primary Fire-ground Tasks

- Incident Command
- Fire attack & exposure protection
- Exterior rescues
- Interior search & rescue
- Pump Operation
- BA Control (Accountability)
- Continuous water supply
- Secondary support hose-line/s

8. Water Supply

Where firefighters have been deployed into a fire building a continuous or plentiful water supply must be provided before their hose-line empties first-aid water tanks. This is critical! To run out of water whilst they are advancing on the fire is something that must be avoided under any circumstance.

8.1 Continuous Water Supply – Key Factors

- Establish a continuous flow of water before attack hose-lines run dry, or
- Evacuate firefighters to the exterior immediately, prior to water running out at the nozzle

9. Primary Attack

The ability to get water on the fire as quickly as possible is perhaps one of the most important parts of tactical deployment. However, this tactical objective must still be addressed from a tactical mode (offensive or defensive) and be tasked in order of priority (rescue .v. fire attack), in accordance with the staffing and resources on scene. A well-placed and effectively flowed hose-line may serve to save many lives on its own.

What is important to realise is that interior search operations should only normally take place under the protection of a primary attack hose-line in place working on the fire and protecting the search teams escape route. The only exception to this would be a known and confirmed life risk (occupant/s) existing within a few feet of the entry point to the structure (or fire involved area) that are either seen or heard. In this situation, a self deployment using a rapid deployment BA board is acceptable, working ahead of the placement of the primary attack hose-line, in order to attempt a 'snatch rescue'. At all times the 'risk versus gain' assessment must be considered.

9.1 Primary Fire Attack Hose-line - Considerations

- Get water onto the fire as quickly as possible
- A well placed hose-line may save lives in itself
- Interior search should not take place without a hose-line in place on the fire floor
- The only exception to this rule is for known life risk near the entry point
- At all times try to coordinate both fire attack and interior search together
- The attack hose-line team **should never leave their nozzle** until relieved by other firefighters, or where the fire has been **completely and fully** suppressed, unless they are forced to evacuate themselves
- It is a tactical error to deviate from your objective without good reason. If the primary line is tasked with locating and attacking the fire, do not deviate into a search pattern for occupants away from the fire. The hose-line is needed at the fire!

10. Search & Rescue

An interior search & rescue operation for potentially trapped occupants is possibly one of the most dangerous tasks a firefighter may ever attempt. It is critical that the 'risk versus gain' assessment is made, that crews are effectively briefed pre-deployment and updated with the latest information as the search proceeds. If at any time all occupants are subsequently accounted for, the search & rescue crew should immediately be called out of the building.

10.1 Interior Search & Rescue – Key Factors

- Ensure an effective pre-deployment briefing takes place
- Offer advice or information on possible occupant status and locations
- Remind firefighters to close doors and zone down the structure as they advance in
- Maintain team integrity at all times
- Always try to coordinate interior search with fire attack
- Do not advance to upper floors, above a fire, unless a hose-line is protecting your escape route (hose-line sited between the fire and the stairs)
- Consider VES approaches where viable as a potentially safer option
- If subsequent information reliably shows that all occupants are accounted for, then immediately contact the search crew/s and evacuate them to safety

11. Securing Team Safety

The provision of certain risk control measures and 'safety tactics' will serve to secure team safety and offer a safer working environment for all on-scene firefighters.

11.1 Ways of Ensuring Team Safety at Fires (examples)

- Secondary support hose-line deployed within 15 metres of the primary attack nozzle
- Emergency Teams & Procedure (BA) (RIT)
- Effective accountability from the moment you arrive
- Teams to maintain team integrity at all times
- Effective communication links with all interior crews
- Work with Thermal Image equipment
- Provide interior lighting ASAP
- Ladder the windows of upper floors in areas where firefighters may be working
- Always address an effective balance of experience in crew deployments

11.2 Secondary (Support) Hose-line

- Secondary support hose-line deployed within 15 metres of the primary attack nozzle
- The prime purpose of the secondary hose-line is to protect members on the primary attack hose-line
- Look out for indicators and warning signs such as fire getting behind them; changes in smoke volume or velocity; a lowering and raising effect of the smoke layer etc
- Don't use water excessively and don't compromise the attack team's position

- If the primary line advances up a stairway protect this escape route by placing the line between the fire and the escape route. If viable proceed to suppress the fire but be certain that the escape route for the primary attack crew is preserved.
- Where the primary attack line is advancing to additional floors above then follow them up the stairs and cover their escape route down
- If this occurs then further support lines may be needed to cover the escape route of the secondary line's advance if they are passing fire on floors below them
- Be certain to suppress fire fully – as a support line you must ensure that the fire will not re-ignite once passed
- Never get so close as to crowd the escape route of the primary attack line
- Where basements are involved, await their communication that they have cleared the base of the stairs before proceeding down behind them – again, do not crowd the primary crew's escape route and try to maintain a 15m distance to their rear

12. Tactical Ventilation

Tactical Ventilation is defined as *'the **venting or containment** actions by on-scene fire-fighters, used to take **control** from the outset of a fire's burning regime, in an effort to gain some **tactical advantage** during interior structural fire-fighting operations'* …

Anti-ventilation is defined as *'the planned and systematic confinement of heat, smoke, and fire gases and/or exclusion of fresh air, into a fire involved compartment, or structure'.*

Structural fire-fighting operations should begin from an anti-ventilation stance. As firefighters we should immediately attempt to take control of the building's ventilation profile and any existing air-track that has developed. Large volumes of fast moving dark smoke are presenting us with key warning signs of an impending event of sudden and rapid fire progress. By closing doors and zoning down the building into manageable compartments we may delay this process. The intention of anti-ventilation is to delay or prevent the fire's progression to a state of 'flashover'.

When necessary we should initiate a tactical venting operation, according to strict protocols, I order to assist the tactical approach.

12.1 Tactical Ventilation – Protocols & Considerations

- There must be a primary objective (purpose or reason) in creating a vent opening
- Under who's directive is this vent being made?
- Does it conform to their plan (strategy) as communicated
- What direction is the wind in and what likely influences will it have?
- Where is the fire located and what conditions are presenting?
- Where are the occupants most likely to be located?
- Where is the primary attack line located?
- Where are the other known locations of firefighters in the structure?

12.2 Tactical Ventilation - **Who's Directive?**

- The Incident Commander giving the directive to ventilate should communicate clearly and coordinate any venting action knowing that –
- It has been requested by an interior crew, or
- All interior crews are aware it is going to occur and accept this position
- There is sufficient flow-rate at all nozzles to deal with the fire; or the fire has been isolated
- There is a clear purpose or objective in creating the vent opening/s
- The process has been thoroughly risk-assessed and the most likely outcome is anticipated and acceptable

12.3 Positive Pressure Ventilation (PPV) – Protocols & Considerations

- The use of PPV to ventilate fire involved structures is according to a 3-phase training development process
- **Phase 1** – PPV to clear smoke after the fire is **completely** extinguished
- **Phase 2** – The fire has been suppressed to a state of fuel-control
- **Phase 3** – The fire is still in the growth stage, in a ventilation-controlled state, and PPV is used to assist firefighters to gain entry in order to complete search and rescue and fire attack operations

12.4 Vent – Enter – Search (VES) – Protocols & Considerations

- The concept of VES is based around a quick assault on a building in an effort to search rooms from a 'safer' exterior approach
- An important aspect associated with VES tactics is that where a vent is made for this purpose, any opposing wind is likely to make subsequent entry impossible
- Ensure that VES tactics are closely coordinated with other fire-ground operations. For example, a VES entry on the 'C' side and a PPV application on the 'A' side of a structure is not coordinating the search and rescue operation inline with the attack and such an approach could be extremely dangerous

13. Primary (First Response) Command & Control

As the fire service arrives on-scene there will be a pre-determined person, according to **clearly documented directives**, who is designated as the Incident Commander (IC). This officer will immediately **take control** of the situation and **assert command**. It is the case that a well-trained force of firefighters will generally automatically fulfil roles and meet critical tasks. It is important that the Incident Commander does not fall into a command mode where micro-management of individual firefighters becomes necessary. The command mode functions best where each officer is responsible for a maximum of five reporting lines. This may be reduced to 2-3 where a complex emergency scene is in progress or extended to 10-12 (or more) where the situation has evolved to a point of control and conclusion. However, taken as a 'span of control' of five this approach to incident command will establish a system where one single fire officer micro-managing a fire from the top of his voice across the entire fire-ground should not occur.

13.1 First **60 seconds** on-scene

- Sixty second reconnaissance is the target
- 360 degree walk-around where possible
- Locate the fire and gauge the extent of fire development
- Ascertain occupant status
- Establish special risks

13.2 First **120 seconds** on-scene

- Complete a dynamic risk assessment (DRA)
- Form a plan based on tactical priorities inline with available resources
- Declare and communicate to all the Tactical Mode
- Select and declare a Command Mode
- Brief crew commanders and firefighters as to tasks and objectives
- Establish accountability
- Establish risk control (measures) and secure team safety
- Deploy crews as needed without micro-managing the situation
- Estimate resource requirements
- Send in a progress report

13.3 Tactical Mode of operations

- Offensive
- Defensive
- Transitional

13.4 Command Mode
- Nothing showing from building – **'Mobile'** command with reconnaissance
- Fast attack **'Mobile'** command – maintain/pass/or transfer command
- Establish an Incident Command Post (ICP) – **Stationary** command

13.5 Sector Commands
- Establish fire-ground sectors
- Assign commanders to sectors where resources permit

14. Accountability

14.1 Personnel Accountability
- Monitored and recorded accountability of all personnel arriving and working on scene
- Monitored and recorded accountability of all personnel working in breathing apparatus (BA Control Procedure)
- Procedure for taking a roll call of all personnel in situations of structural collapse; sudden fire escalation; BA Emergency or other circumstances where firefighter accountability must be instantly addressed, in order to accurately define any number of personnel who remain unaccounted for

14.2 BA Control Procedures - **Stage 1**
- Up to 10 BA wearers (excluding any emergency team)
- Maximum of 2 stage one control points
- Where operations are not protracted
- Branch guide-lines are not allowed

14.3 BA Control Procedures - **Stage 2**
- More than 10 BA wearers in the risk area
- More than 2 stage one entry control points
- Protracted incident
- Branch guidelines in use
- BA Emergency teams at each Entry Control Point (ECP)

14.4 BA Control Procedures - **Main Control**
- More than 2 stage two ECP
- Where the number of BA wearers is large

14.5 BA Control Procedures - **Rapid Deployment**
- Exceptional circumstances where urgent action is needed
- Where resources on the initial response are limited
- Maximum of TWO BA wearers
- Trapped occupants are within view, or are known to be near the entry point
- Also used to prevent a dangerous escalation of the incident by a limited action
- BA wearers can self-deploy using a Rapid Deployment control board

14.6 BA (SCBA) **Air Management -** Here is a rough fire-ground formula for estimating the 'turn around time' (TAT) of firefighters working in BA, based on the 40LPM average air consumption rate. Of course, where the work-rate increases during the egress from the structure, say for example because firefighters are carrying a casualty out, then the accuracy of the formula will be seriously affected – IMPORTANT – Ensure to match your cylinder charging pressure and contents with this formula before attempting to apply it operationally!

- **TAT = CP/2 + 25**
- Where TAT = Turn Around Time; and CP = Cylinder Pressure

Cylinder Press Bars	Turn Around Time (TAT) TAT = CP/2+25
220	135
210	130
200	125
190	120
180	115
170	110
160	105
150	100
140	95
130	90
120	85
110	80
100	75

As an example, if the entry is made with a 200 ats/bar reading; 200/2 = 100 + 25 = **125**

Therefore, at 125 ats/bars the turn around point has been reached and the firefighters should begin exiting from the building. This has allowed 75 bars for entry and 75 bars for exiting plus 50 bars for the warning whistle to begin.

14.7 Entrapped Procedure

- London Fire Brigade research demonstrated that SCBA emergency air (10 minutes duration signalled by the start of the warning whistle) could be extended in duration by cycle breathing (slow resting controlled breathing). It was shown that the 10 minute duration could be extended to 63 minutes (6.3 LPM) and in one test a firefighter equipped with SCBA and full PPE ran for the entire duration of the SCBA on a treadmill and then rested to cycle breath from the start of the warning whistle. The 10-minute emergency air supply was then increased in duration to 43 minutes in this case.

15. BA Emergency Procedure (Mayday Management)

BA Emergency (RIT) Teams are to be provided as soon as staffing allows when Stage One BA Control is implemented. As soon as BA Stage Two comes into force there MUST be en Emergency team located at each Entry Control Point. Teams must consist of a minimum number of firefighters, being dictated by the largest size team committed from the ECP in question.

15.1 The BA Entry Control Officer (ECO) shall:

- **Commit an emergency team(s), if available, and immediately inform the IC of the incident if -**
- Any team fails to return to the ECP by the indicated 'Time of Whistle';
- A DSU (PASS) alarm is operated;
- A communication line link with an interior crew is broken
- It is clear that a dangerous situation is developing which will affect the BA team; or
- It appears that any BA wearer is in distress

- If the IC is not available, the ECO shall initiate a radio assistance message stating, 'BA emergency'
- Prior to entry, ensure the emergency team are suitably briefed

15.1 **Deployment of an Emergency Team**

- The emergency team should rig (but not start-up on air) in BA and stand by at the ECP until instructed to enter the incident by the ECO, or until relieved of that duty;
- Prior to entry, the ECO will ensure that all members of the emergency team are fully briefed about the emergency, the likely location of the wearer(s) in distress (if this is known) and will collect the wearers' tallies and record their actions on the ECB;
- When available, existing BA guide lines or communications cables should be followed;
- Following deployment, the ECO (or the MCO) should inform the Officer-in-Charge of the incident, and call for a **replacement emergency team immediately**.

16. Communication

One of the most influential human failings is the inability to communicate effectively. We communicate with other humans and with our surroundings daily by using our senses. However, the message given out is often received in a different way. In some situations, for either technological or psychological reasons, the message is not transferred at all.

Where humans are stressed, occupied or psychologically challenged, the ability to transfer accurate information is hindered further still. On the fire-ground this failure to accurately transfer information has repeatedly led to life losses of both occupants and firefighters alike.

We must train and work hard to address this issue and acknowledge there is a problem in the first place. This training note has used bullet points as a means of imparting the critical parts of the message. Similarly, we must try to break down and impart our information in short 'chunks'. When passing information concentrate on identifying what is the real issue. Be clear, concise and await a response. Never ever think that your message has been received without a clear response or form of acknowledgement. In a face-to-face briefing this may simply be through a hand or face gesture. Where working on a radio it is absolutely critical that every message is acknowledged by a voice response to show the message has been received.

16.1 Communication – Key Factors

- Humans do not communicate well with other humans or with their environment
- This failing may be due to both technological and psychological issues
- To transfer key information effectively be clear and concise
- Concentrate on what the real issues or objectives are
- Always look for, or listen for, a response
- Never believe the transfer of information has taken place without a response
- The transfer of critical information takes place more effectively when calm
- Work hard at making yourself a good communicator generally in life and this will hopefully follow you onto the fire-ground

17. Principal Officer (First Chief) Command & Control

It is absolutely essential that the first arriving principal command officer/s establish/s their role as soon as possible. A careful balance must be drawn between establishing a clear transfer of command at the right moment as opposed to rushing in without an effective handover. Having said this, too many situations have occurred where first arriving principal officers failed to take command quickly and effectively.

It is established that a chain of events (known as the 'error chain') sometimes sets in from the moment firefighters arrive on-scene. This error chain may be the result of poor command decisions by the primary incident commander; lack of training; lack of command; lack of resources or staffing. Therefore the first five minutes of principal command is perhaps one of the most critical stages of a fire for it may be in this time-frame that the fire chief must address strategy and alter the tactical approach, in order to optimise resource deployments to good effect as well as securing team safety.

17.1 Principal commander's first 3 minutes following arrival

- 3-minute handover and transfer of command is the target
- The commander must **establish** and **assert** command
- Establish occupant status and search & rescue operations in progress
- The commander must review the current strategy and deployment
- Establish if crews have been deployed by command or have self-deployed
- Estimate resource requirements

17.2 Principal commander's first 5 minutes following arrival

- Following handover the principal commander has 120 seconds to halt any potential 'error chain' and implement changes to the strategy or tactics if necessary
- Confirm the fire's location and extent of development from outset to present
- Establish communication links to all sectors and interior positions as well as dispatch
- Confirm directly that interior operations have been safely and effectively deployed
- Ensure a continuous water supply has been established or consider firefighter evacuation, depending on water status and the potential for fire development
- Establish sector control, where possible, if not already done
- Assure team security for interior crews and confirm accountability
- Assign a safety officer where resources permit
- Send in a progress report

17.3 Crew Briefings & De-briefings

- Where crews are deployed they must be provided with a clear pre-deployment briefing (preferably face to face) by an IC or sector commander where the task objectives must be clearly explained
- Ensure that interior crews are kept up-to-date with the most recent and relevant information that may alter or influence their task objectives in some way
- Where crews are exiting the structure they must immediately be provided with a prompt post-deployment briefing (preferably face to face) by an IC or sector commander, where an exchange of information must be sought, documented and forwarded to relevant authority on the fire-ground

18. Large Volume Structures

One of the greatest hazards to firefighters are working fires in lightweight steel clad or large volume structures. These buildings should never be under-estimated when involved in fire and such a situation demands the greatest care and commitment to incident command, risk assessment and firefighter safety.

Fires in these buildings may quickly develop to weaken parts of the lightweight construction and sudden escalations in fire development may catch firefighters out where they have penetrated some way into the building. There are countless cases where multiples of firefighters have lost their lives as they became disoriented in the sudden lowering of the smoke layer.

18.1 General Mode of operations in Large Volume Structures (LVS)

- Potentially an offensive mode until the fire has involved the roof truss, which may commonly occur within ten minutes of arrival

- Ensure such buildings are frequently reviewed by firefighters with the objectives of pre-planning in mind
- Ensure firefighters are trained to identify roof truss systems
- Strict staffing control and fire-ground accountability is essential
- Do not over-commit resources but do make every effort to secure team safety
- Where the fire compartment is heavily smoke-logged and visibility is less than 5 metres then the deployment of firefighters, for deep penetration (in excess of one hose length) must be considered highly dangerous and a defensive approach should be considered until the compartment has been effectively ventilated
- Alternatively, an entry point closer to the fire should be sought, or created
- Ensure adequate flow-rate is deployed from the outset
- Anticipate sudden fire escalations as according to 'power laws', such fires can double in size every 30 seconds
- Consider and plan for the immediate evacuation of firefighters where a developing fire cannot be located quickly (within 5 minutes of entry to the involved compartment), or water is not reaching the fire
- Consider the use of thermal imaging cameras to assist size-up
- Recognize the dangers of fire spreading unnoticed or hidden by a smoke layer, in attic spaces or under high ceilings
- Use extreme caution when operating above or below wide-span roof trusses
- Fire departments should establish an SOP for operations in such structures
- Firefighters should not be committed to working either above or below a lightweight roof truss that is exposed to fire
- The sounds of 'popping' or 'cracking' from the ceiling area are a clear sign that the truss is involved, signalling an immediate evacuation

18.2 A risk-assessed tactical approach where occupants are **reported trapped** in a LVS

- Fires in structures of this nature are known to develop extremely rapidly
- Limit the number of firefighters entering the structure and assure their accountability through task based objectives and pre-entry briefings, as well as an effective accountability system of entry and egress
- Ensure hose-lines and water supplies are adequate for the task
- Be absolutely certain that the information you are providing search & rescue teams is the most up-to-date available at that time and communicate to them any changes to that information as made known
- As soon as occupants are accounted for, consider an immediate evacuation of firefighters and a defensive mode of attack where the roof truss or ceiling void is exposed to fire, heat or smoke
- Consider the safest and most logical entry point in relation to where occupants might be located
- Avoid horizontal ventilation as far and as long as possible, particularly where crews are working inside
- Take note of fire behaviour hazard indicators such as changes in smoke colour; sudden or powerful air-inflows that might indicate backdraft conditions; rising and lowering cycles of the smoke layer interface, indicating turbulence that accompanies rapid but unseen fire development etc
- The hazards associated with flashover; backdraft; or smoke explosion; are much greater in these type of premises

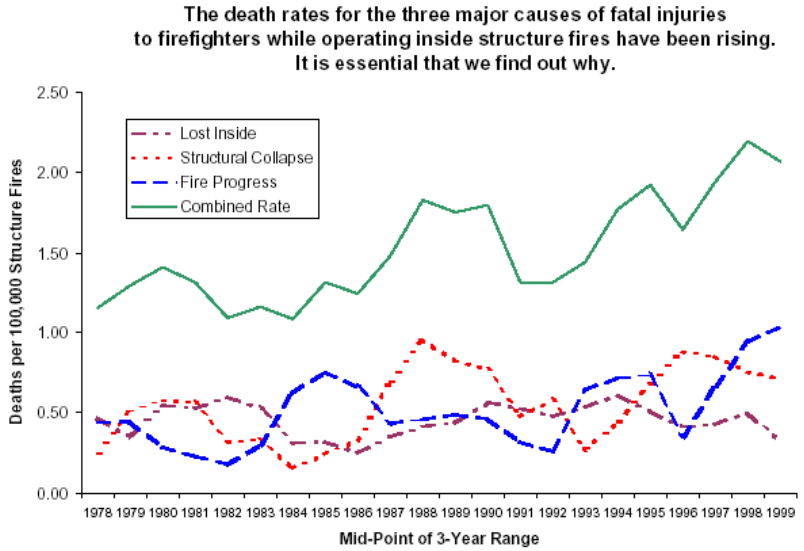
19. High-rise Buildings

Fires in high-rise buildings demand even greater attention is paid to the subject of Tactical Deployment. The logistical demands and communication time-lags involved in commanding a fire situated several floors up in a tall structure demands that this is addressed in another SOP.

Refer to SOP 2 : High-rise Fire-fighting – Model SOP
www.firetactics.com

20. The Most Common Reasons for Traumatic Firefighter Life Losses

The actual **rate** (per number of structure fires) of traumatic firefighter life losses have been steadily increasing over the past twenty years in the USA, according to the NFPA and the UK has similarly shown a dramatic increase in traumatic firefighter deaths at fires since 2004. There is no doubt that root causes include a reducing amount of real fire experience being handed down as fire workloads decrease; a transition from live-fire training to more theoretical training; a reduction in training; a reduction in emphasis or time applied to risk profiling and familiarisation visits, and a lack of discipline on the fire-ground that has lead to an increased level of complacency.



Various research studies have suggested that there are commonalities in the causal factors of traumatic firefighter life losses as follows -

20.1 **NIOSH** (USA) Five most common causal factors are attributed to -
- Lack of Incident Command from the first response onwards
- Inadequate Risk Assessment
- Lack of Accountability or SCBA Air Management (BA Control)
- Inadequate Communication
- Inadequate or ineffective SOPs

20.2 However, a review (Hartin) of 67 NIOSH LODD reports also demonstrated that -
- 35 of the incidents demonstrated Fire Behaviour as a causal factor
- Only 3 of the 67 reports gave recommendations related to Fire Behaviour

20.3 In another review (Emery) of NIOSH reports, Causal Factors were seen as -
- Lack of pre-incident knowledge and information (pre-planning)
- Most Significant problem not identified (situational awareness)
- Inappropriate tactical mode (offensive/defensive)
- No plan formulated and communicated
- Insufficient personnel (critical tasking)
- Absence of *tactical* accountability
- Span of control out of control
- Nobody watching the clock
- Poor fire growth management (fire behaviour)

- Insufficient flow-rate for involved fire load
- Fire officers operating at task (tactical) level
- Random undisciplined communication
- No regular, periodic situation reassessment

20.4 A further study by the IAFF (USA) into Fire-fighter injuries concluded the most common causes of injury were -

- Lack of situational Awareness (37.3%)
- Human error (10.6%)
- Lack of communication
- Breach of SOP protocols
- Lack of wellness or fitness

It must be said that these are the issues that arise again and again as causal factors in fire-fighter deaths and injuries. This training note has attempted to identify these causes and presents tactical solutions of a risk-based nature in order to address these issues. By following the advice and guidance in this training bulletin and expanding on the training issues raised therein, your firefighters will become safer on the fire-ground.

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Firetactics.com 2007