Networked Fire Control Services Partnership

Tactical Operational Guidance
Fire Residential Buildings High Rise

Part One	**Initial Attendance** Aide Memoire and Flowchart	**Aide Memoire** **Flowchart**
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Document overview

Guidance to support assertive, effective and safe incident command at incidents involving fire in high rise (i.e. above 5 floors) residential dwellings such as flats or maisonettes, hotels, boarding houses, hospitals, portable accommodation with sleeping risk, heritage buildings, etc.

For Fire Service purposes a building may be considered as high rise where it contains more than 5 floors above fire service access level or the height of the highest floor is more than 18m above that level.

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Part One – Initial Attendance Aide Memoire

1	Initial considerations

En route

☐ Consult any SSRI	☐ Identify water supplies
☐ Weather, wind, time of day	☐ Initial crew briefing
☐ Access for aerial appliance/ambulances	☐ Safe access/egress/RVP/marshalling areas
☐ Commence risk assessment process	

On arrival

☐ Confirm location of fire using: occupants, CCTV, visual inspection, AFD and 360° survey	☐ Appoint lift operator. Agree lift use protocols
☐ Establish whether persons are reported	☐ Secure lifts by firefighters' lift switch
☐ Information on layout, occupancy, available services, evacuation options from caretaker, manager or building plan	☐ Establish the need for rescues/level of intervention required
	☐ Secure water supplies (twin hose)
☐ Commit reconnaissance team (minimum of 1 x ICS L1, 2 x FF) with equipment, to confirm fire floor and nature of the incident	☐ Identify dry/wet riser, check riser outlets and communicate to all
	☐ Appoint Safety Observer(s) to monitor external fire condition
☐ Lift use – only following assessment by IC and where the lowest affected floor has been identified	☐ Identify/communicate RVP
	☐ Site/access route for aerial appliance
☐ Do not use if lift shaft or machine room is compromised	☐ Identify utilities/smoke control system and isolate or operate as appropriate
	☐ Establish casualty handling area
	☐ Consider impacts on surrounding risks

2	Incident information

☐ Location of fire compartment	☐ Location and prioritisation of persons requiring rescue
☐ Location of affected floors	☐ Evacuation strategy and status
☐ Location of Bridgehead	☐ Ventilation – effects on firefighting/ evacuation
☐ Wind factors	

3	Resource information

☐ Access for aerial appliance	☐ Incident escalation – early make up
☐ RVP for oncoming resources	☐ Available types of firefighting media

4	Risk information to inform planning

Key hazards

Key control measures

Key hazards	Key control measures
Confirm relevance of key hazards below:	Confirm relevance of key control measures below:
☐ Falling debris/occupants	☐ Three-line attack unless triggers met
☐ Moral pressure to act	☐ IC permission for initial entry
☐ Failure/breach of compartmentation	☐ Cordons
☐ Exposure to smoke and heat	☐ SSRI/AFD panel
☐ Wind driven fires	☐ Identification of fire floor
☐ Flashover/backdraught	

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☐ Insufficient flow rate ☐ Extended travel distance/arduous working conditions ☐ Loss of signal affecting ICS ☐ Exposed cables/cable fixings failure ☐ Lift failure ☐ Failure of safety rails/balconies ☐ Complex layout – disorientation ☐ Intimidation/violence ☐ Booby traps Other key hazards identified at incident	☐ Confirmation of internal layout ☐ Lift use protocols ☐ Safety Observer(s) (external) ☐ Assessment of wind direction/velocity ☐ Sufficient water supply ☐ Insulated wire snips ☐ Thermal imaging camera ☐ Incident ground communications

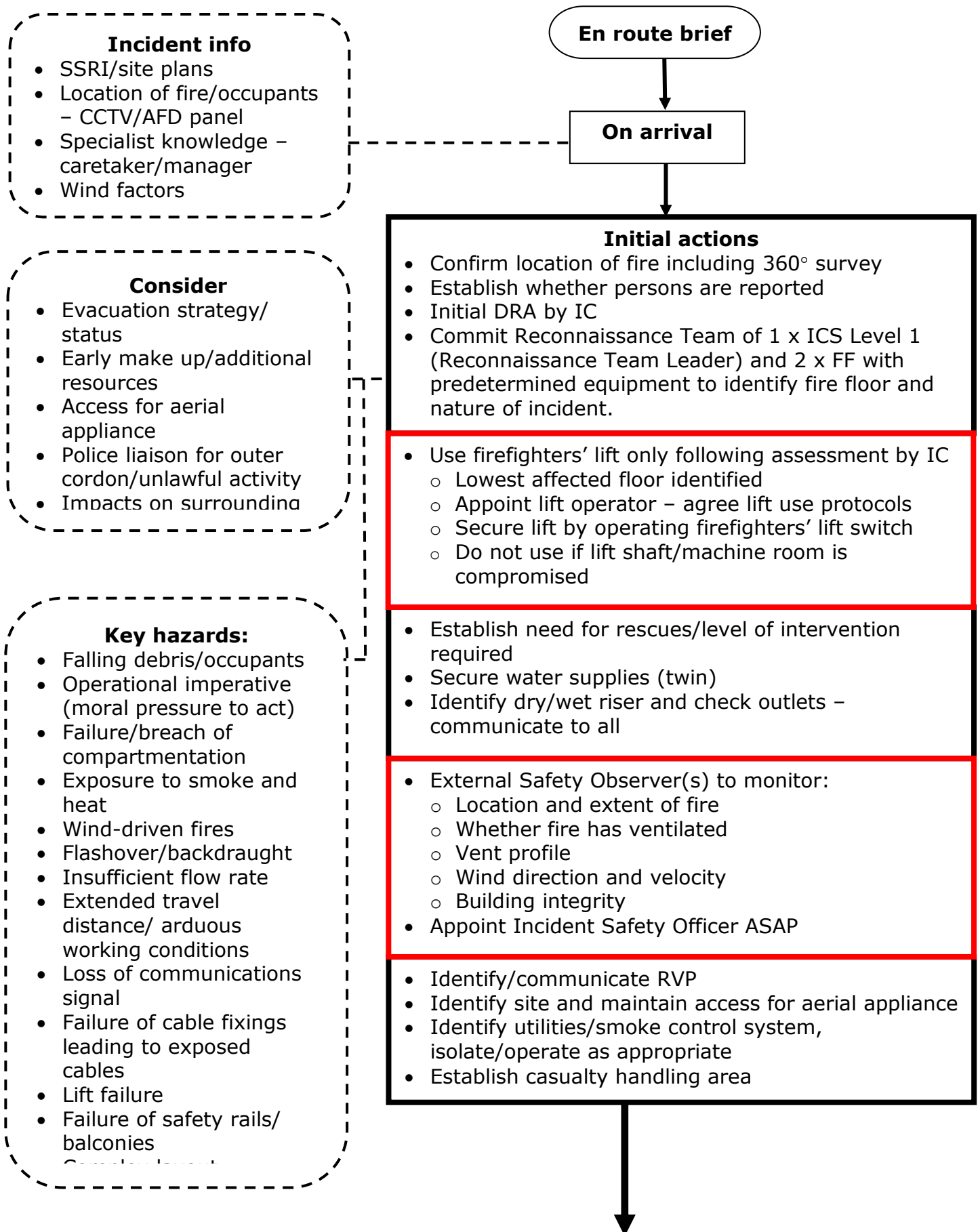## 5 Planning

Common prompts

☐ Resilient e.g. 'plan B' – relocating Bridgehead/communications/lift/riser failures	☐ Regularly reviewed ☐ Is this a Major Incident?

Incident specific prompts

☐ Incident Command established at ground floor/FRS access level
☐ Charge rising main
☐ Establish and maintain cordons
☐ Consider effect of firefighting tactics on evacuation (and vice versa)
☐ Clarify evacuation plan, requirements, resources and evacuee welfare
☐ Establish a Bridgehead 3 floors below the lowest affected floor unless conditions/SSRI allow otherwise
☐ Implement tactical plan and communicate between IC, Fire Sector and Lobby Sectors
☐ Initial entry to fire compartment must be authorised by IC
☐ BA Emergency Team to Bridgehead
☐ Tactical options include:
  o Fully developed compartment fire, or where unable to ascertain conditions: 3-line attack – attack jet, corridor protection, stairwell protection
  o Developing fire, requiring early life-saving intervention or to prevent escalation to a fully involved compartment fire where there no indications of a wind-driven fire (triggers met): 2-line attack – attack jet, corridor protection
	o Confirmed small fire, e.g. grill pan, waste paper bin: no BA/hose - immediate rescue or pre-emptive action to mitigate risk, e.g. turn off cooker, shut door, etc.
	☐ Early life-saving intervention triggers:
	  o Fire Control confirm that occupant is in telephone contact with them
	  o Occupant observed in the fire affected flat by FRS personnel from outside building
	  o Occupant heard/seen in the compartment by recon team
	  o Direct information from person who has just left compartment that others are in it
	  o Credible information from other source confirms person is likely to be in affected compartment
	☐ Minimum personnel for 2-line intervention: 1 x IC, 1 x Reconnaissance Team Leader, 2 x BA wearers (recon team), 2 x BA wearers (2nd line), 1 x ECO, 1 x pump operator, 1 x External Safety Observer
	☐ If any doubt exists regarding the safety of personnel, default to 3-line attack
	☐ Consider setting up staging area

Aide Memoire – Flowchart

Incident info
- SSRI/site plans
- Location of fire/occupants – CCTV/AFD panel
- Specialist knowledge – caretaker/manager
- Wind factors

Consider
- Evacuation strategy/ status
- Early make up/additional resources
- Access for aerial appliance
- Police liaison for outer cordon/unlawful activity
- Impacts on surrounding

Key hazards:
- Falling debris/occupants
- Operational imperative (moral pressure to act)
- Failure/breach of compartmentation
- Exposure to smoke and heat
- Wind-driven fires
- Flashover/backdraught
- Insufficient flow rate
- Extended travel distance/ arduous working conditions
- Loss of communications signal
- Failure of cable fixings leading to exposed cables
- Lift failure
- Failure of safety rails/ balconies
- Complex layout

En route brief

On arrival

Initial actions
- Confirm location of fire including 360° survey
- Establish whether persons are reported
- Initial DRA by IC
- Commit Reconnaissance Team of 1 x ICS Level 1 (Reconnaissance Team Leader) and 2 x FF with predetermined equipment to identify fire floor and nature of incident.

- Use firefighters' lift only following assessment by IC
  - Lowest affected floor identified
  - Appoint lift operator – agree lift use protocols
  - Secure lift by operating firefighters' lift switch
  - Do not use if lift shaft/machine room is compromised

- Establish need for rescues/level of intervention required
- Secure water supplies (twin)
- Identify dry/wet riser and check outlets – communicate to all

- External Safety Observer(s) to monitor:
  - Location and extent of fire
  - Whether fire has ventilated
  - Vent profile
  - Wind direction and velocity
  - Building integrity
- Appoint Incident Safety Officer ASAP

- Identify/communicate RVP
- Identify site and maintain access for aerial appliance
- Identify utilities/smoke control system, isolate/operate as appropriate
- Establish casualty handling area

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Fire Residential High Rise

Tactical intervention options

- Fully developed compartment fire or where unable to ascertain conditions: 3-line – attack jet, corridor protection, stairwell protection
- Developing fire, requires life-saving intervention (triggers met): 2-line – attack jet, corridor protection
- Confirmed small fire, e.g. grill pan, waste paper bin:
  No BA/ hose - immediate rescue or pre-emptive action to mitigate risk – e.g. turn off cooker, shut door
- If any doubt exists regarding safety of personnel, default to 3-line attack

Triggers for early intervention

For initial 2-line attack, at least one of these triggers must be applicable at the time rescue is initiated:

- Occupant (trapped) – Fire Control confirm that occupant is in telephone contact with them
- Occupant (trapped) – observed in the fire affected flat by FRS personnel from outside building
- Occupant can be heard and/or seen within the compartment by Reconnaissance Team
- Reconnaissance Team receive information directly from person, who has just left the compartment concerned, that other persons remain in it
- Credible information received from other source confirming person is likely to be in affected compartment

Consider

- 'Plan B' for relocating Bridgehead and for riser, lift, communications failures
- Ventilation – effects on firefighting and evacuation
- Subject matter advisers
- Firewater run-off

Actions on confirmation of fire

- Incident Command at ground/FRS access level
- Charge rising main – check landing valves
- Establish and maintain cordons
- Consider effect of firefighting tactics on evacuation (and vice versa)
- Bridgehead THREE floors below lowest affected floor unless conditions/SSRI allow otherwise
- Implement tactical plan and communicate between Fire Sector Commander/Lobby Sector Commander/IC
- No personnel in fire compartment without IC's permission

- Before intervention ensure:
- Rising main is charged and sufficient water is available at fire floor
- Intervention crews have appropriate firefighting media
- Consider appointing Safety Observer to monitor conditions on stairwell

- Incident escalation – consider early make up using METHANE message
- BA Emergency Team to standby at Bridgehead at earliest opportunity

Incident development

- ICS Level 2 for Fire Sector Commander
- Consider Search Sector
- Consider Search Coordinator
- Lobby Sector Commander controlling:
  - Building systems
  - Deployment and logging of crews and resources
- Logistics Officer (reports to Lobby Sector Commander)
- Staging Officer to set up staging area below Bridgehead
  - Reports to Lobby Sector Commander
  - Provides equipment and personnel to Bridgehead (supported by Lobby Sector)
- Full use of site plans. Confirm internal layout
- Use identical lower floors/building plans to brief crews on layout
- Complete log of occupants – location/who has been moved (and where to)/who has stayed/contact details etc.

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Part Two – Detailed Considerations to Assist Incident Command

1	Initial considerations

1.1 En route

a) Initial crew briefing appropriate to the predicted risk

- Need for disciplined actions, roles delegated and/or confirmed, key safety actions highlighted, any previous experience sought/shared

b) Consider available in-cab information

- Site Specific Risk Information (SSRI)
  - Access/RVP/safety zones
  - Water supplies/firefighting lifts/fixed installation inlets
- MDT for relevant operational guidance

c) External prompts that may influence planning

- Smoke plume and/or flame glow
- Weather, wind, time of day
- Traffic build up/public reaction

d) Consider resource management

- PDA (confirm other resources that are en route and estimated time of arrival)
- Space for special appliances and/or other responders e.g. ambulance

e) Start risk assessment process

1.2 On arrival

a) What has happened?

- Carry out 360° survey to include:
- location and extent of fire,
- whether the fire has ventilated,
- vent profile,
- wind direction, velocity and impact on surrounding risks

b) What is happening now?

- Potential fire spread
- Automatic Fire Detection (AFD) panel, CCTV, etc.

c) What is likely to happen?

- What is the likely fire spread when resources are ready for attack
- Early consideration whether additional resources are required

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d) Who/what is at risk?

- Seek specialist knowledge of the building including occupancy, available services and evacuation options from the caretaker or manager

- Gather information from Site Specific Risk Information (SSRI), building plans,

e) Are there any immediate risks?

f) Is immediate action required?

- Identify site and maintain access/egress route for aerial appliance

- Incident Command to be established at ground floor/FRS access level

- Establish water supplies. Twinned hose from hydrant to pump and pump to riser

- Check landing valves up to the Bridgehead at the earliest opportunity

- Determine whether use of a firefighters' lift is required.

  o The use of a lift during an incident must only be considered following an assessment by the IC and where the lowest affected floor has been identified utilising AFD, CCTV or other credible source where possible.

  o The machine room or lift shaft must not be compromised by fire, smoke or water

  o Secure lifts by operating firefighters' lift switch at fire service access level

1.3 Reconnaissance

a) Commit Reconnaissance Team of a minimum of 1 x ICS Level 1 and 2 x FF with predetermined equipment, including BA, to identify fire floor and nature of incident and confirm details with the IC

b) In the absence of a second ICS Level 1 officer, the Reconnaissance Team can be formed utilising the existing ICS Level 1 officer with incident command transferring to the ground/FRS access level at the earliest opportunity

c) It is vital that progress to the fire floor is only made following assessment of the conditions in the protected staircase

d) The Reconnaissance Team ascend staircase, or lift if deemed suitable

e) The Reconnaissance Team must not progress by lift beyond 3 floors below the suspected fire floor

f) If there is any risk of the lift shaft or machine room being compromised by water or fire products then use of that lift for transporting personnel must cease immediately

g) The Reconnaissance Team must not enter the suspected fire floor until they have confirmed that it is safe by use of vision panels, external signs and information from witnesses to assess the conditions

h) The Reconnaissance Team should attempt to confirm the location of the fire compartment, evacuate the compartments most at risk if appropriate, and communicate their findings to the IC, ensuring fire separation is not compromised

i) The Reconnaissance Team leader should establish the Bridgehead 3 floors below the lowest affected floor, unless conditions/SSRI allow otherwise. The Reconnaissance Team leader should then become the Fire Sector Commander

j) Once the Bridgehead has been established, the tactical plan should be communicated between the relevant commanders, e.g. Fire Sector Commander, Lobby Sector Commander and IC

k) Before any intervention ensure:

- The rising main is charged and sufficient water is available at the fire floor

- Intervention crews have appropriate firefighting media

1.4 Entering Compartments

a) The Reconnaissance Team may enter a compartment to conduct a rescue or prevent an escalation of the incident (such as the isolation of cooker controls) when the following conditions are met:

- No control measures in addition to full firefighting PPE are required in order to carry out the action

- Conditions within the compartment can be accurately risk assessed

b) If any doubt regarding the safety of personnel undertaking such actions exists, or additional controls, such as BA, are required, no intervention should be undertaken until further resources are in place

c) A 2-line intervention (fire attack and corridor protection team) with BA may be considered in the following two circumstances:

- Credible information is received that a rescue is required and at least one of the following triggers are met:
  o Fire Control confirms they are in telephone contact with the person in the compartment at the time the rescue is initiated
  o FRS personnel report from outside that they have seen persons in the affected compartment at the time the rescue is initiated
  o The Reconnaissance Team reports they have seen or heard the occupant within the compartment (i.e. through the letter box/vision panel)
  o Reconnaissance Team is told directly by a person who has just left the affected compartment that someone is still in the compartment.
  o There is credible information from other source which confirms a person(s) is likely to be in affected compartment

- If during the reconnaissance signs and symptoms indicate that escalation of the incident to a fully involved compartment fire can be prevented and there are no indications of a wind-driven fire.

d) For a 2-line intervention, as a minimum, the following personnel must be in place prior to commitment into the affected compartment:

1 x ICS L1	Reconnaissance Team leader
2 x FF	BA wearers (Reconnaissance Team)
1 x FF	Pump Operator – set into dry riser
2 x FF	BA wearers – deployed on arrival, support Reconnaissance Team
1 x FF	ECO – deployed on arrival to support Reconnaissance Team
1 x ICS L1	Incident Commander
1 x FF	External Safety Observer

e) A dedicated External Safety Observer should be maintained throughout the dynamic stages of the incident, reporting directly to the IC.

- The External Safety Observer should be suitably qualified to ensure that they can identify signs of fire development.

- The role of the External Safety Observer is to report information to IC regarding:
  - o Fire development
  - o Trapped occupants
  - o Failure of external openings (windows and doors)
  - o Rapid external fire spread (cladding/balcony fire loading)

f) Send informative message stating that crews are conducting a rescue or entering the affected compartment to prevent escalation.

g) If there are indications/conditions for a wind-driven fire, stairwell protection must be in place before entry is made to the fire compartment.

h) If there is a 2-line attack, stairwell protection must be adopted as soon as possible.

i) The opening of doors should be kept to a minimum to prevent smoke travel.

j) Fire Sector Commander to be enhanced to ICS Level 2 if/when appropriate.

k) An Emergency Team should be located at the Bridgehead as soon as resources permit.

2   Detailed Information Gathering

Fires involving residential high rise buildings are likely to be challenging due to the physical separation between IC, available resources and the scene of operations. The following detailed considerations break down the issues that may need to be addressed.

2.1   Common

a)   Confirm situation and overview including local factors such as weather, especially wind speed, time of day, etc.

b)   Establish incident parameters: immediate risks requiring action and wider impacts needing consideration.

c)   Is the incident:

- Dynamic or static

- Confined to one compartment, one floor or multiple floors

d)   Confirm multiple sources of information (360° survey/MDT/caretaker/ occupier/witnesses/SSRI, ongoing calls received by Fire Control) have been considered and information is current and up to date

e)   Confirm situational awareness with other responders to establish a common overview using METHANE message structure. Reconcile differences in information or conflicting priorities

f)   Incident review information, consider:

- Appropriateness of identified incident plan priorities and objectives

- Test of risk v benefit and confirm Tactical Mode

- Impact of existing and predicted wind speed and reflect in plan. Consider use of CHEMET etc.

- Effectiveness of implementation of existing incident plan – actual progress against anticipated timeline, review and amend as necessary

g)   Effectiveness/appropriateness of control and communication arrangements.

h)   Extent of incident ('major incident' etc.) – identify, consider and mitigate the potential wider impacts of the incident:

- Political – High profile incident has potential for incident outcome to be linked positively or negatively to political decisions etc.

- Economic – Incident affects high value property, response involves significant costs etc.

- Societal – Incident requires involvement of Local Authority to provide temporary accommodation for residents

- Technical – Good or poor performance of equipment, procedure etc

- Legal – Statutory duty not met, incident contains a crime scene etc.

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- Environmental – Incident affects watercourses, involves Site of Special Scientific Interest (SSSI) etc.
- Reputational – Potential to affect FRS reputation e.g. rise in reputation following successful or considerate intervention

2.2 Fires

a) How did the fire start?

b) How has it developed?

c) What options are there for containment?

d) Predicted fire spread before 'Stop' can be achieved

e) Who/what is at risk?

f) Are there any immediate risks?

g) Is immediate action required?

h) Fire location known/not known

i) Fire detection indicating location/spread

j) What is burning?

k) Unprotected exposures

l) Wind/weather effects on fire spread

m) Ventilation/pressurisation taking place. Risk of wind-driven fire

n) Use of building features to protect responders:

- Safe access
- Egress
- Bridgehead, lobbies, lifts etc.
- Fixed fire fighting installations and equipment
- Engineered fire safety solutions (SSRI)

o) Sufficient water supply/pressure available for firefighting and protection

p) Can separation/firebreaks be used or created

q) Impact of building characteristics:

- Occupancy
- Construction e.g. non fire-resistant external claddings
- Size
- Complexity of layout e.g. scissor construction, lifts serving alternative floors, etc.
- Alterations e.g. retro-fitted non fire-compliant doors, security doors, etc.

- Workmanship e.g. retro-fitted cabling, etc.
- Coverings
- Unprotected voids

r) Impact of fire

2.3 Rescues

a) Are persons reported within compartments affected by fire?

b) Are persons trapped in flats/apartments due to smoke spread and are they receiving survival advice from Fire Control?

c) Saveable lives/those most at risk

d) Is there a preferable search pattern?

e) Recording/logging of persons rescued, apartments/floors cleared, etc.

f) Are there any barriers to overcome e.g. compromised stairwells or egress routes?

g) Are specialist teams/resources required e.g. aerial platform, Hazardous Area Response Team (HART), etc.

2.4 Hazardous materials and environmental protection

a) Are Hazmats actually involved/likely to be involved?

b) Apply STEPS protocol

c) Use SSRI if available

d) Fire water run-off

3 Resource Requirements

Resources that are available or may be required and arrangements needed to manage them.

3.1 Resources

a) Consider PDA/ETA and what is:

- Already deployed
- In attendance but not yet deployed
- En route and expected to be available for deployment when prioritising objectives
- Required to meet initial and developing incident priorities, objectives and contingencies – firefighting/rescues, containment, search team, additional support for command and control, etc.
- Not needed and can be returned

b)   Consider other agencies, what is:

- In attendance and how can it be used to assist with the incident

- Needed to deal with the incident e.g. traffic management, temporary accommodation for residents, building control, etc.

3.2   Resource management

a)   Sectorisation – Fire Sector, Lobby Sector, Search Sector, etc.

b)   Any support sectors required – BA, on-site call handling for occupants at risk, etc.

c)   Equipment: pools/recovery/servicing/repairs/spares/recording etc.

d)   Reliefs/welfare arrangements

e)   Continually review resource management arrangements

4	**Risk Information**

Consider and review significant hazards and appropriate control measures.
The table below identifies the significant hazards and control measures identified through pre-planning. Utilise this information where relevant and the risk information gathered at the incident to develop risk assessments appropriate to the dynamics of the situation.

4.1 Significant hazards	**4.2 Control measures**
Falling debris/occupants ■ Glass/panels planing etc.	■ Cordons – one and a half times height ■ External Safety Observer(s) ■ Assess wind direction/velocity ■ Police for outer cordon
Operational imperative ■ The moral pressure to act	■ SSRI ■ Cordons ■ Critical incident stress management
Failure/breach of compartmentation	■ BA procedures ■ External Safety Observer(s) ■ Thermal imaging camera ■ Firefighting media ■ Corridor jet

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Exposure to heat and smoke ▪ Whilst undertaking fire ground operations	▪ SSRI ▪ BA procedures ▪ External Safety Observer(s) ▪ Stairwell Safety Observer(s) ▪ Tactical ventilation
Wind-driven fires ▪ Exposure to extreme heat ▪ Very rapid fire growth, etc.	▪ Cordons ▪ BA procedures ▪ Fire fighting media ▪ Corridor and stairwell jets ▪ Thermal imaging camera ▪ External Safety Observer(s) ▪ Tactical ventilation – identify and manage vent pathways ▪ Use of fire protection engineered solutions
Flashover/backdraught	▪ BA procedures ▪ Firefighting media ▪ Corridor/stairwell jet ▪ Thermal imaging camera ▪ External Safety Observer(s) ▪ Tactical ventilation ▪ Use of Heating, Ventilation and Air Conditioning (HVAC)
Insufficient flow rates ▪ Ineffectiveness of fire fighting media	▪ Check landing valves ▪ SSRI ▪ Tactical withdrawal ▪ BA procedures ▪ Use of aerial appliance for water tower ▪ Alternative water supply

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Extended travel distance/strenuous working conditions ▪ Multiple flights of stairs ▪ Hot conditions	▪ SSRI ▪ Use of lifts following IC's DRA ▪ Aerial appliance ▪ Crew rotation ▪ Welfare arrangements ▪ Use of staging team to carry equipment
Loss of signal ▪ Breakdown of command structure	▪ BA procedures ▪ Evacuation signal and roll call procedure ▪ Use of runners ▪ SSRI ▪ Leaky feeder/signal booster ▪ Use of airwave radios
Failure of cable fixings ▪ Electric shock ▪ Entanglement	▪ Isolation of services ▪ BA procedures ▪ Insulated wire snips ▪ Thermal imaging camera ▪ SSRI ▪ Lighting ▪ Alternative travel routes
Lift failure ▪ Entrapment ▪ Products of combustion	▪ SSRI ▪ Lift communications ▪ Lift use protocols
Failure of safety rails, balconies and windows ▪ Falls from height	▪ Safety Officer ▪ Crew briefing ▪ Cordons ▪ Advice from structural engineer

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Complex layout and disorientation ▪ E.g. Duplex apartments ▪ Trapped/isolated	▪ SSRI/building plans/liaison with building manager or caretaker ▪ Use of floor with same layout to brief crews prior to committing ▪ BA procedures ▪ Lighting ▪ Tactical ventilation ▪ Thermal imaging camera
Intimidation/violence	▪ FRS violence and aggression policy ▪ Avoid lone working ▪ Cordons ▪ Attendance of police
Electricity	▪ Isolation of services ▪ Attendance of utilities representative ▪ SSRI
Security doors ▪ Impact injures, etc.	▪ Door entry equipment/techniques ▪ Lighting ▪ Liaison with site management
Hazardous materials	▪ Isolation ▪ Avoid contact ▪ HMEPA ▪ BA procedures ▪ Cordons ▪ Hazmat procedures ▪ Decontamination procedures ▪ Post exposure reporting
Sharps/needles	▪ Lighting ▪ Hygiene/welfare procedures ▪ SSRI ▪ Use of sharps box if available ▪ Post exposure reporting

Contaminated water – **biohazards** - From dry/wet riser	- Avoid contact - Hygiene/welfare procedures - Decontamination procedures - Post exposure reporting
Body Fluids – **biohazards**	- Avoid contact - Hygiene/welfare procedures - Decontamination procedures
Fire loading - Rapid fire spread	- Firefighting media - BA procedures - Corridor/stairwell jet
Flammable atmosphere - LPG/natural gas	- Firefighting media - Isolation - Attendance of utilities representative - BA procedures - SSRI - Corridor/stairwell jet - Tactical ventilation - Gas monitoring - Intrinsically safe equipment
Obstructions/congestion - Crush injuries - Entrapment, etc.	- Identify safe evacuation route - Phased evacuation - SSRI - Evacuation plan - Lighting
Ground conditions - Slips, trips and falls	- Lighting - Cordons
Manual handling - Equipment and casualties	- Staging area - Use of lifts following IC's DRA - Manual handling techniques

Animals		Avoidance
▪ Bites	▪	Hygiene procedures
▪ Infection	▪	Decontamination procedures
▪ Puncture wounds	▪	Liaison with owner
	▪	Attendance of RSPCA/vet
	▪	Post exposure reporting
Booby Traps	▪	Identify and use avoidance routes
	▪	Cordons
	▪	SSRI
	▪	Local isolation of services
	▪	Attendance of police

5   Planning

5.1   Aim, objectives and priorities

Fires involving residential high rise buildings are likely to require a high degree of coordinated planning and action and the following objectives may need to be considered and prioritised to address the circumstances of the incident:

a)   **Life critical**

  ▪ Prioritise life-saving intervention – Reconnaissance/BA teams subject to triggers outlined in Part 2: Section 1: Entering Compartments

  o Prioritise rescues of those most at risk

  o Instigate a methodical search and a means of identifying cleared rooms; consider appointing a search co-ordinator

  o Establish casualty handling area if appropriate

b)   **Safety critical**

  ▪ Public safety, consider evacuation of:

  o Flats on same corridor as the one affected

  o Floors within fire sector

  o Floors above fire sector

  o Consider need for containment

  o Establish separate firefighting and evacuation staircases where possible

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- Safety of all responders
  - Establish and maintain cordons – use of police for outer cordon/unlawful activity
  - Regular safety briefings for all
  - Consider setting up staging area

c) **Prevent escalation and spread**

- Prevent and/or extinguish fires
- Isolation of utilities
- Corridor and stairwell protection jets
- External covering jets. Consider the use of CAF
- Limit water damage – ensure unused landing valves are closed
- Isolate water utility supply to affected area (if fire suppression not compromised)
- Salvage activities, particularly below the scene of operations

d) **Environmental protection**

- Mitigate and/or minimise the impact of fire water run-off and/or smoke plume in liaison with the Environment Agency/Environmental Health

e) **Preserve scene**

- Maintain records of moved items

f) **Return to new normality**

- Operations scaled down, resources released
- Actions to assist recovery

g) **Contingency planning**

- Develop alternative plans/options ('plan B') where necessary/prudent for:
  - Relocation of Bridgehead
  - Communications failure
  - Lift failures
  - Riser failures
- Regular review of the plan

6   Command and control

a)   Confirm that the command structure meets the needs of the incident plan with:

- Appropriate level of incident command
- Delegated roles, responsibilities and authority limits that are clearly understood and within the experience and capability of individuals within the command team
- Clearly defined reporting lines established
- Clearly defined communication routes/methods appropriate to the circumstances
- Manageable spans of control
- Sectors (operational and support if required), with coordinated working
- Adequate resources

b)   Command support established and command post suitably located and identified

c)   Any changes in the command structure and relevant details of the incident plan are clearly communicated and known to all on the incident ground

d)   Effective command is maintained incorporating the previous IC/command team.

7   Safety and welfare

7.1 Safety considerations

a)   Suitable and sufficient DRA/ARA conducted and appropriately reviewed

b)   Operating practices balance benefit against risk

c)   Safety Observers or Safety Officers with clear briefing regarding areas of responsibility and clear reporting lines confirmed

d)   Cordons established, controlled/entry records (e.g. at Lobby Sector)

e)   Holding areas

f)   Safety briefings

g)   Evacuation systems/routes. Establish separate firefighting and evacuation staircases where possible

h)   Once operational activity is completed, withdraw personnel and equipment from risk area

i)   First aid/ambulance service

j)   Exposure to heat, cold, weather limited or mitigated

k)   Safety events recorded/investigation initiated

7.2 Welfare considerations

a) Crew rotation and reliefs

b) Hydration, rest and feeding and toilet facilities

c) Consider relatives/others becoming aware/concerned (news, social media, mobile phones etc.)

d) Stress, initial support

e) Protracted incident:

- Reliefs for specialists considered
- Shelter for responders (out of sight?)
- Shelter for displaced residents (in consultation with local authority)

f) Support from voluntary services (e.g. Red Cross etc.)

g) Medical aftercare/occupational health referral

8 Communication

Establish reliable, accurate, timely communications

8.1 FRS exchange of information

a) Regular command team briefings/updates/relevant information sharing

b) Clear briefings by delegated command team/officers to cascade info

c) Clear lines of communication established

d) Confirmation that information passed is received, understood and being acted upon

e) Communication format is determined by incident needs (e.g. runners if poor radio reception)

f) Communication discipline maintained

g) Tactical Mode changes/updates broadcast

h) Changes to the plan are shared

i) Seek and give regular feedback regarding progress

j) Messages, METHANE

k) Brief senior commanders and interested parties remote from incident

8.2 Technical considerations

a) Single link with Fire Control established (except where on-site call handling for occupants at risk is in use)

b) Radio channels/call groups assigned

c) Appropriate links to other agencies

d) Specialist communications engineer

e) Specialist equipment

f)   Repeaters/aerials

g)   Intrinsically safe equipment

h)   Consider use of local systems

i)   Consider use of Mobile Telephony Priority Access Scheme (MTPAS)

9   Liaison

Effective liaison with external agencies and interested parties to build shared situational awareness.

9.1   Who?

a)   Emergency responders

b)   Local authority officers

c)   Structural engineers

d)   Owners/occupiers/caretakers

e)   Specialist advisers

f)   Fire Control

g)   Utilities and other agencies

h)   Voluntary services

i)   Public

j)   Media

9.2   How?

a)   Formal – Operational / Tactical / Strategic

b)   Regular recorded cross-agency meetings

c)   Media briefings

d)   Panel of advisers

e)   Informal – working alongside other agencies

f)   Liaison with off-site advisers

g)   Inter-agency Liaison Officer (ILO)

9.3   Why?

a)   Sharing of safety information

b)   Common aims/unity of purpose

c)   Specific responsibilities confirmed

d)   Relevant information sharing

e)   Involve and maximise assistance

f)   Better informed decisions

g)   Address conflicting priorities of other agencies

h)   Supports needs of other agencies

i)   Positive PR/accurate/common media messages

j)   Warning/informing public

10   Closing stages and post incident considerations

10.1 Scaling down operations

a)   Community impacts addressed, such as removing cordons as early as possible

b)   Once operational activity is completed, withdraw personnel and equipment from risk area

c)   Maintain recording, logging, Tactical Mode

d)   Provide any appropriate agreed assistance with site clearance

10.2 Safeguarding issues

a)   Noted and passed on to appropriate authorities

10.3 Investigations

a)   Scene preservation

b)   Logging any FRS photo/video evidence

c)   Breach of fire safety legislation/identification of trend

d)   Fire investigation

e)   Accident investigation

f)   Post mortem/Coroner's hearing considerations

g)   Criminal investigation/litigation considerations

h)   Public or Judicial Inquiry considerations

i)   Arranging potential joint investigations

j)   Identify key personnel/witnesses

10.4 Equipment issues

a)   A recovery plan that ensures equipment is:

- Recovered, cleaned and returned, or
- Decontaminated or bagged as appropriate, or
- Impounded if part of an investigation in accordance with service procedures
- If left in situ, recorded and replaced and/or recovered when appropriate

10.5 Economic considerations

a) Business as usual considered, scaling back of operations reducing impact on community

10.6 Incident recording

a) Gather information for IRS

b) Gather all incident command paperwork

c) Decision log secured

10.7 Debriefing and post incident welfare

a) Carry out hot incident debrief (include other agencies if appropriate)

b) Assess crew welfare issues/Occupational health referrals

c) Ensure critical incident debrief procedures initiated for incidents involving mass casualties/trauma

d) Incident debriefing and evaluation, sharing lessons learnt including effectiveness of evacuation strategy

10.8 Handover and site security

a) The incident should be handed over to the responsible person/authority

b) Site security considered

10.9 Other issues

a) Potential breach of fire safety legislation
b) VIP attendance
c) Review evacuation strategy on SSRI with responsible person

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Part Three – Incident Review

Incident Review Considerations	
Incident specific	**User notes**
1 Initial actions	
☐ Was available information/guidance gathered and considered? ☐ Were DRA/ARA completed and acted on? ☐ Did initial actions balance risk and benefit? ☐ Were initial priorities and sequence of objectives appropriate? ☐ Were adequate resources secured and managed? ☐ Were effective command, control and communication arrangements in place? ☐ Are remedial actions required?	
2 Incident information	
☐ What has happened? ☐ What is happening now? ☐ What is likely to happen? ☐ Who/what is at risk? ☐ Establish the parameters of the incident ☐ Are there any immediate risks? ☐ Is immediate action required? ☐ Are local factors understood and being addressed (wind, time of day, slope of ground etc.)? ☐ Are the wider impacts understood and being addressed (PESTLER)? ☐ Are equality and diversity implications being addressed? ☐ Has SSRI, operational guidance been consulted? ☐ Are actions in line with operational guidance?	

Incident specific	User notes
3 Resources information	

☐ Confirm resource requirements, consider:
   o FRS
   o Other agencies
   o Contingencies
☐ Are resources appropriate to the plan?
☐ Is resource management adequate?	

4 Hazard and safety information	
☐ Are DRA/ARA/pre-planned RA, significant hazards and control measures incorporated into incident planning? ☐ Has operational guidance/SSRI been considered? ☐ Do actions balance risk against benefits?	
5 Planning	
5.1 Priorities and objectives	
☐ Objectives identified and priorities appropriate ☐ Incident activity appropriate	
5.2 Plan	

☐ Is there a plan and is it working?
☐ Will it deliver the actions required to meet the priorities and objectives of the incident:
   o Is it appropriate to the incident type?
   o Is it based on relevant information?
   o Does it follow a logical sequence?
   o Is it appropriately delegated?
   o Does it balance risk and benefit?
   o Does it reflect the Tactical Mode?
   o Is it correctly resourced?
   o Is it communicated and understood?
   o Is it flexible?
   o Is it resilient e.g. 'plan B'/ contingencies?
   o Is it monitored, reviewed, evaluated, maintained and, if amended, communicated?	

Incident specific	User notes
6 Command and control	
Confirm existing arrangements meet the needs of the incident plan, with appropriate: ☐ Balance of risk and benefit ☐ Level of command ☐ Organisational structure ☐ Sectorisation (operational and support) ☐ Roles and responsibilities, (clearly defined and understood) ☐ Spans of control ☐ Clear communication routes ☐ Continuity – initial IC/command team ☐ Resources ☐ Shared situational awareness FRS/others ☐ Command support/command post ☐ Changes communicated to all	
7 Safety and welfare	
Confirm adequate safety arrangements: ☐ DRA/ARA conducted and reviewed ☐ Safety briefings ☐ Safety observers/Safety Officer(s) ☐ Cordons established, controlled ☐ Holding areas ☐ Evacuation systems/routes ☐ Operating practices appropriately balance risk and benefits ☐ First aid/Ambulance service ☐ Safety events recorded/investigation ☐ Welfare of personnel and others: ☐ Protracted incident ☐ Crew rotation and reliefs ☐ Rest, feeding, hydration ☐ Toilet facilities ☐ Shelter ☐ Friends and relatives concerns ☐ Stress, initial support ☐ Medical aftercare/occupational health ☐ Evacuation shelter – local authority ☐ Voluntary services support (Red Cross etc.)	

Incident specific	User notes
8 Communications	
☐ Clear lines of communication established and maintained: 　ο Between incident and Fire Control 　ο Between all FRS personnel at incident 　ο Between FRS and others agencies ☐ Briefings and information exchange/cascade: 　ο Between all FRS personnel at incident 　ο Between FRS and other agencies ☐ Communication format appropriate ☐ Tactical Mode changes/updates broadcast ☐ Changes to the plan are shared ☐ Changes in IC/Command team shared ☐ Regular feedback/sit reps ☐ Messages, METHANE ☐ Brief senior commanders and interested parties remote from incident ☐ Technical considerations addressed	
9 Liaison with other agencies and interested parties	
Consider and confirm: **Who:** ☐ Emergency responders ☐ Medical teams ☐ Local authority officers ☐ Structural engineers ☐ Owners/occupiers or on-site knowledge ☐ Experts/specialists/site specialists ☐ Control rooms (railway, motorway, shopping complexes) ☐ Utilities and other agencies ☐ Public ☐ FRS media department/public media **How:** ☐ Formal – Gold, Silver, Bronze ☐ Regular recorded cross-agency meetings ☐ Media briefings ☐ Panel of advisers ☐ Informal – working alongside other agencies ☐ Liaison with off-site advisers ☐ Inter-agency Liaison Officer	

Incident specific	User notes
Why: ☐ Sharing of safety information ☐ Common aims and unity of purpose ☐ Specific responsibilities confirmed ☐ Relevant information sharing ☐ Involve and maximise assistance ☐ Better informed decisions ☐ Address conflicting priorities of other agencies ☐ Supports needs of other agencies ☐ Positive PR/accurate information release/common media messages ☐ Warning/informing public	

10 Closing stages and post incident considerations	
☐ Investigations/actions supported ☐ Coroner's hearing ☐ Criminal investigation ☐ Public or Judicial Inquiry ☐ Fire investigation ☐ Accident investigation ☐ Litigation ☐ Safeguarding passed to authority ☐ Breach of fire safety legislation/identification of trend ☐ Financial loss/cost recovery ☐ Scene preservation/securing evidence/records ☐ Returning to new normality ☐ Equipment decontamination/recovery plan ☐ Re-inspection organised ☐ Local prevention activities ☐ Scaling back of operations ☐ Incident closure preparation ☐ Completion and securing of records ☐ Gather information for IRS etc. ☐ Incident debriefing and evaluation, sharing lessons learnt ☐ Site clearance ☐ Handover – site safety and security briefing, responsibility – record	

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Part Four – Document References

1.   Technical references

- GRA 3.2. v2 (2008) – Firefighting in High-rise premises
- GRA 5.8 (2009) – Flashover, backdraught and fire gas ignitions
- TB 1/97 – Breathing apparatus guidance
- Fire and Rescue Manual Vol 2 Incident Command System v3 (2008)
- RICE – Tactical framework 2012
- Physiological Assessment of Firefighting, Search and Rescue in the Built Environment, Fire Research Technical Report, 2/2005