



National Operational Guidance



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Introduction

The Future of Incident Command (CFOA, 2015) set out the argument for Fire and Rescue Services (FRS) to consider how incident commanders are selected, developed and trained to ensure they are prepared to be competent and confident all hazard commanders against a backdrop of reducing operational opportunities (see appendix 1). Of critical importance is exposing them to a variety of training interventions, especially realistic training, to complement real command experience.

This report provides guidance on training interventions designed to complement real command experience. The report describes the reduction in incidents and how a number of factors may limit the opportunities for incident commanders to naturally gain command experience and find it difficult to become effective commanders. It will outline the elements that constitute 'command experience' and the impact of declining incident rates. Finally, it will set out a framework for developing incident command training and describe training methods linked to the essential elements of command along with suitable evaluation methods.



Gaining command experience

Over recent years, there has been a great reliance on incident commanders practising their incident command skills – in particular decision making - through natural exposure to operational incidents. With such a heavy emphasis on direct operational experience, an incident commander's opportunity to gain experience can be limited by a number of factors. These include their length of service and the number and types of incident that they have attended (Cohen-Hatton et al, 2015), the latter of which have been declining for several years, albeit with a trend of increasing numbers of special service incidents (see Table 1). Notably, the number of fires have reduced by over 32% in the last nine years (Home Office, 2018; NI FRS, 2018, Scottish FRS, 2018; Statistics for Wales, 2018).

UK fire and rescue service totals	2009-10	2017-18	Percentage difference
Number of fires	314,410	212,718	-32.34%
Total number of incidents	859,608	717,890	-16.49%

Other factors limiting the number of opportunities for incident commanders to naturally gain



command experience include:

- Service mobilising policy for example, when and to what levels 1 – 4 commanders are mobilised
- Specialist roles commanders are trained to undertake, such as; Hazardous materials advisers (HMA) Urban Search and rescue or National Interagency Liaison Officer (NILO) which means at times they may be designated to perform one of them instead of the incident commander role;
- Work location (and standby base for senior commanders) in relation to areas of high operational activity
- Work location (and standby base for senior commanders) in relation to colleagues on same rota group

Beyond these factors it is crucial to understand that whilst individuals may be mobilised many times and be regarded as busy operational commanders, it does not follow that they end up in charge of incidents, or if they do, that they remain incident commander for very long. Therefore, a 'busy' operational commander cannot necessarily be an experienced incident commander. It is the time spent in command positions, making decisions under the pressures presented in emergency situations, that generates the most valuable and holistic experience. Yet, it is also important for that experience to be varied in terms of the type of incidents attended and their context, for example, time pressured with high risks, or low risks with no time pressures.

The reducing number of naturally occurring opportunities for incident commanders to gain direct experience has meant their ability to gain sufficient experience to become confident all hazards commanders is at risk. It is important for Services to understand the duration and breadth of experience their incident commanders need to perform the role safely and efficiently. An established baseline of experience would assist services in analysing tailored training needs.



Direct and indirect experience

Command experience can be gained directly – though direct exposure and participation, or indirect, from simulated scenarios or observation. As Table 2 indicates there are many opportunities within training and learning environments to gain indirect command experience.

Table 2: Comparison between opportunities for incident commanders to gain direct and indirect command experience

Direct command experience



Environment Opportunities

Real incidents

Number of times, variety of incidents attended, and length of time spent as an incident commander, operations commander or sector commander

Indirect command experience

Environment Opportunities

Real incidents

Number of times, variety of incidents, and length of time spent as a Strategic or Tactical Commander supporting an incident commander as part of a Coordination Group

Number of times, variety of incidents attended, and length of time spent as a monitoring officer/quality assurance officer, or functional sector commander



Training & learning
interventions

Number of times, variety of simulated incidents, and length of time spent as an incident commander in training simulations (practical exercises, computer simulators, tabletop exercises, etc.)

Participation in case study reviews

Participation in incident/exercise debriefs

Participation in professional discussions with mentors

Participation in human factors training:

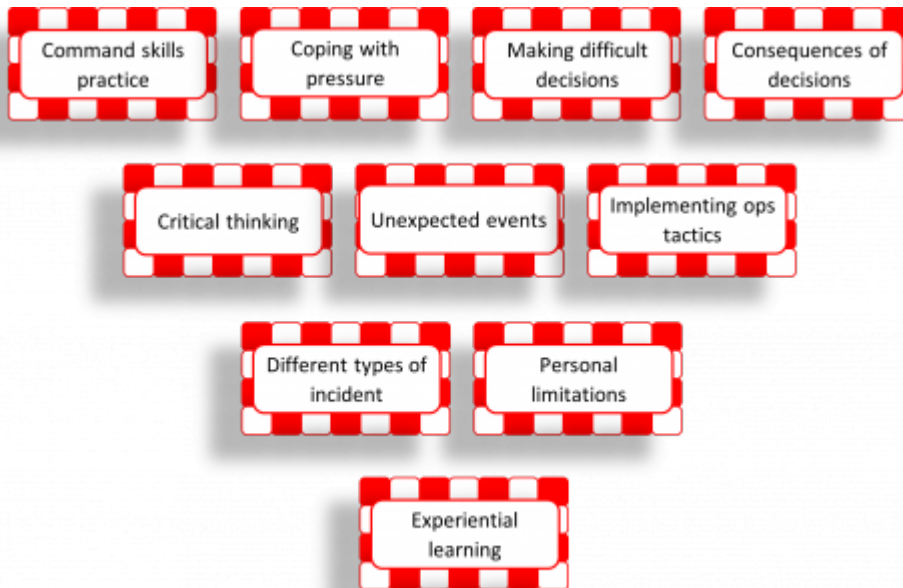
Command skills knowledge and practice

Practical incident commander 'knowhow'^[1] via:

- Use of incident command-related knowledge, such as, risk assessment, operational procedures and appliance capabilities
- Use of information communications technology, such as, computer software and radios
- Use of command support resources, such as, command support units, other agencies, strategic and tactical coordinating groups

Undertaking qualifications:

- Incident command qualifications



The Elements of command experience vital to safe and efficient incident command

[1] Practical knowledge on how to best use resources in support of their command, for example. control officers, command support unit, information and communications technology, incident command system, standard operating procedures, etc.



Elements of command experience

Command experience can be broken down into a number of elements, as described in Figure 1. Services should consider how they ensure commanders have adequate opportunity to exercise these elements, either directly or indirectly.

The impact of lost experience

Command Skills: A number of the elements of experience listed above are directly related to command skills, as detailed in the National Operational Guidance for Incident Command. Experience of practising command skills can be gained at real incidents, but also in training simulations. A lack of experience or opportunity to practice these command skills can have a detrimental effect on incident command, as outlined in Table 3.



Table 3: The Potential Impact of Underperformance of Command Skills Due to Loss of Experience.

Command Skill	Potential Impact of Underperformance Due to Loss of Experience
Leadership	The active demonstration of effective leadership by an incident commander is expected by firefighters and others, including the public. A lack of leadership will adversely impact upon the confidence others have in an incident commander, such as, . in their judgement and decisions. This will effect levels of trust and followership potentially leaving an incident commander isolated and a breakdown of teamwork leading others to freelance.
Command decision making Operational discretion	Decision making is a process that produces judgements and decisions to meet the demands of an incident. It involves different methods that relate to the situation confronted by incident commanders, but is critically important in high risk settings. Poor decision making by incident commanders can directly impact the safety of firefighters, the public and/or the reputation of the Service.
Incident commander communication	Communication is a foremost characteristic of teamwork and is fundamental to safety and efficiency. It facilitates the exchange of information and ideas and shares knowledge. Poor communication can put others at risk or lead to a breakdown in teamwork and interoperability.



Command Skill

Potential Impact of Underperformance Due to Loss of Experience

Personal
resilience

The ability to recognise and manage stress and fatigue in one's self and others is a critical command skill. Stress is an adverse reaction an individual has to excessive pressure or other demands placed upon them. Incidents generate acute stress which can interfere with behaviour and affect safety. Fatigue is associated with feelings of tiredness and long hours of work. It impairs cognitive skills such as decision making, motors skills, communication and social skills. Stress and fatigue are linked to accident causation across many industries. Failure to manage them can impair the performance of all the other command skills and impact upon the safety of the incident commander, firefighters and others.

Situational
awareness

Knowing what is going on around you, i.e. the cognitive skill of situational awareness, is a dynamic, complex concept that demands attention for it to be achieved and maintained in order to anticipate the outcomes of critical tasks. It is closely associated with decision making and is a leading causal factor in accidents. A lack of situational awareness can lead to inappropriate decisions, which may impair the efficiency of operations and cause unnecessary loss or harm.

Operational team
effectiveness

Team working and interoperability are central to the safe resolution of incidents. To function effectively teams require a common understanding of how they are expected to work together. An incident commander will be reliant on their team formation, communication, coordination and, cooperation skills to work cohesively with others. Poor communication can result in poor teamwork, but other factors such as a lack of preparation or role clarity can also have a similar impact. Poor teamwork can lead to a mismatch of skills to role and different levels of situational awareness across an incident ground or multiple agencies.



Coping with pressure

Whilst this is a feature of personal resilience, pressure comes in a variety of forms at incidents including moral, peer, political and public pressure. The challenge for incident commanders is to be able to cope with such pressures, and still effectively apply their command skills. This may be achieved by managing the stress caused by them, which begins with individual commanders being aware of the how stress affects them. The inability to cope with pressure causes stress, which as seen in the Table 3 above impairs all aspects of human performance from cognitive to social skills. Lost incident command experience would make it more likely that incident commander's developed stress and that this response would occur sooner.



Difficult decisions and exposure to the consequences of decisions

These are a feature of decision making and the term 'difficult decisions' refers to those that may be particularly high stakes or feature uncertainty. It also includes the use of operational discretion, i.e. the rare or exceptional circumstances where strictly following an operational procedure would be a barrier to resolving an incident, or where there is no procedure that adequately deals with the incident.

Dealing with the consequences of decisions refers to the rare occasions where any decision made will result in unfavourable consequences, i.e. no win situations. Incident commanders do not expect to make such decisions, they are trained to deal with what is reasonably foreseeable and expect to resolve incidents using standard operating procedures. In order to prepare incident commanders to make difficult decisions and to be able to cope with their consequences, they need experience of such decision making. Exposure naturally to such decisions is by their nature very limited so the impact of reducing incident command experience will only compound an existing lack of experience. Incident commanders confronted by having to make such decisions will also be under stress.



Critical thinking and exposure to unexpected events

Critical or reflective thinking is a process of evaluating what is known (assumptions, beliefs and knowledge) in light of supporting evidence and understanding what that implies. The process involves quickly asking a set of questions focused on what you know and your plan. The Decision Control Process is a good example of critical thinking.

When commanders actively engage with critical thinking they are less likely to suffer from tunnel vision and information bias under conditions of pressure and uncertainty, and can improve situational awareness. The benefits of critical thinking include a reduction in the likelihood of commanders being surprised by unexpected events, decision making errors and incorrect assumptions. The impact of lost experience due to the reducing number of incidents means that opportunities to practise critical thinking are diminishing.



Implementing operational tactics and different types of incidents

The reliance on experience to make intuitive decisions under pressure and in ambiguous situations has been well established. So it is important for incident commanders not only to get incident command experience, but the right incident command experience in relation to the Service and area they cover within it. This will develop mental 'libraries' of operational tactics and the implications of implementing them, including of patterns of thoughts, behaviours, information and relationships between them. These are automatically accessed by incident commanders to inform their decision making in response to fully or partially matching situations. Reduced levels of exposure to a wide variety of incidents restricts the range of operational tactics implemented by incident commanders and limits their incident command experience.

CFOA (2015) highlighted the importance of incident commanders training under realistic conditions as this provides them with the most realistic incident command experience. Training to command a variety of incidents under such conditions will assist incident commanders to develop confidence in their abilities to command and allow them to develop their mental 'libraries' of operational tactics.



Personal limitations

Being self-aware, knowing your own strengths and weaknesses is a key leadership characteristic. A thorough understanding of personal limitations will enable incident commanders to intervene to compensate for them when they recognise they are becoming exceeded. Personal limitations include stress, fatigue, knowledge, and interpersonal communication skills. Interventions to manage them include workload and time management, mindfulness techniques, delegation and the use of experts. However, reducing experience of practicing incident command will impact upon awareness of personal limitations. This will make it more likely that an incident commander will try to function in an environment that has exceeded their cognitive and/or physical abilities.



Experiential learning

None of the above would prove beneficial if incident commanders are inadequately supported and fail to learn from their experiences. A blame-free culture that encourages commanders to learn from every experience is essential. Self-reflection is an important part of the learning process as it enables experience to be reflected, generalised and then applied to new situations. In light of reducing opportunities to gain real incident commander experience Services should consider how they maximise learning when an opportunity occurs, and the impact their culture has on the efficacy of such opportunities.



Replacing lost experience

Incident command training methods

A number of training methods exist that can be used to complement real command experience. There are a variety of ways in which the elements of command experience developed through repeated experiences can be practically simulated. Whilst it is difficult to replicate lost experience completely using one intervention exclusively, this can be achieved using a combination of methods, which are explored in this section. The precise combination can vary depending on who is to receive the training and the level of command. It is important that services consider the



individual needs of each commander, in line with their exposure to command and individual experience.

Theoretical learning

Knowledge-based training develops the knowledge which underpins the recognition of an incident type, the expectations associated with it, and how to respond. This can include incident commander knowhow, typical risks, resource requirements and actions expected. For example, knowledge-based training supports the development of situational awareness about the range of incidents commanders are likely to attend, and in particular may form the basis of assumptions that underpin situational awareness when there is incomplete or inaccurate information. It develops mental models which are psychological representations of real, hypothetical, or imaginary situations that incident commanders use to represent the surrounding world, the relationships between its various parts, and their perception of how their actions will effect the situation. These mental models subsequently underpin skills such as intuitive decision-making, which research has shown to be used greatly in an on-scene environment.

Knowledge-based training methods

There are a variety of training methods that can be used to deliver knowledge-based training. Brief descriptions of the primary methods are listed below together with a table illustrating the advantages and disadvantages of the method, its links to the elements of command and suitable evaluation methods:

Lectures: Are used to transmit knowledge, such as, explaining how to implement a standard operating procedure. However, they do not impart understanding, for that a different method must be used. Lectures help to protect against the loss of experience by providing knowledge about types of incident, standard operating procedures, incident commander knowhow, etc (Table 7).

Table 7: how lectures complement real incident command experience

Lecture			
Advantages	Disadvantages	Elements of command experience	Evaluation Methods



Good for large numbers
of learners
Convey a large amount
of information in a
short time
Increases knowledge
about topic
Extends or creates
schema with new
knowledge and insight
on topic
Can be put online for
distance learning
Cheap

Passive learning experience
Learning experience
impacted by level of trainer's
lecturing skills and quality of
materials

All

Pre and post
lecture test

Case studies: Are used to examine real often problematic incidents and are structured to ensure learning takes place or is reinforced. Often used to analyse what went wrong in a given situation and to consider how failure could have been avoided, for example, large or major incidents. Case studies help to protect against the loss of experience by reinforcing best practice, raising awareness of decision errors and their consequences, and developing critical thinking skills and self-reflection (Table 8).

Table 8: how case studies complement real incident command experience

Case Study			
Advantages	Disadvantages	Elements of command experience	Evaluation Methods



Real, current incidents
can be studied

Increases knowledge
about topic

Can be an individual
or group activity

Engages learners

Reinforces best

practice and/or
lessons learned

Creates memories of
incident type and
operational tactics
used

Develops critical
thinking skills

Develops problem
solving skills

Encourages self-
reflection

Can be put online for
distance learners

Cheap

Must have clear learning
intentions

Must be well structured

Learning experience

impacted by level of
trainer’s preparation of

case study

Different types of
incident

Implementing

operational tactics

Critical thinking

Making difficult
decisions

Consequences of
decisions

Pre and post
case study test

Discussions: Are used to help solve problems or explore a particular topic of interest or concern, for example. operational discretion. They have to be managed to ensure learning takes place and are good for exploring and changing attitudes. Discussions help to protect against the loss of experience by allowing commanders to explore new ideas, concepts or problems and improve their critical thinking and problem solving skills (Table 9).

Table 9: How discussions complement real incident command experience

Discussion			
Advantages	Disadvantages	Elements of command experience	Evaluation Methods



Increases knowledge about topic
 Extends or creates schema with new knowledge and insight on topic
 Challenges preconceived ideas by presenting new ideas
 Useful for changing attitudes
 Develops problem solving skills
 Encourages creative solutions
 Develops critical thinking to pick out important points
 Develops social and inter-personal communication skills
 Encourages self-reflection
 Can be done online
 Cheap

Can be risky if topic viewed as controversial
 Unless well managed can breakdown into an informal chat
 Learning experience impacted by level of trainer's discussion management skills

All

Pre and post discussion attitudinal questionnaire
 Pre and post discussion test

Debates: Are similar to discussions but have more formal rules and are used to examine topics where there is no right answer and both sides of the argument would benefit from exploration, for example. worst case scenarios. Debates help to protect against the loss of experience by allowing commanders to explore contentious, problematic issues and develop their critical thinking, self-reflection and social skills (Table 10).

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Table 10: how debates complement real incident command experience

Debate



Advantages	Disadvantages	Elements of command experience	Evaluation Methods
<p>Clear structure and introduces an element of competition</p> <p>Useful to explore contentious topics</p> <p>Exposes both sides of an argument</p> <p>Learner preparation increases knowledge about topic</p> <p>Extends or creates schema with new knowledge and insight on topic</p> <p>Challenges preconceived ideas by presenting new ideas</p> <p>Useful for changing attitudes</p> <p>Promotes teamwork</p> <p>Develops critical thinking to pick out important points</p> <p>Develops social skills and including inter-personal and formal communication skills</p> <p>Encourages self-reflection</p> <p>Can be done online</p> <p>Cheap</p>	<p>Can be risky if topic viewed as controversial</p> <p>Time taken for learners to prepare for debate</p> <p>Some learners will may dominate the debate</p> <p>Learning experience impacted by level of trainer’s debate management skills</p>	All	<p>Pre and post-debate attitudinal questionnaire</p> <p>Pre and post-debate test</p>



Question and answer: Often used in conjunction with lectures to promote critical thinking and understanding of a topic, for example. interoperability. May also be used as an informal assessment technique. Question and answer sessions help to protect against the loss of experience by allowing the sharing of knowledge and expertise (Table 11).

Table 11: How question and answer sessions complement real incident command experience

Question and Answer			
Advantages	Disadvantages	Elements of command experience	Evaluation Methods
Encourages the sharing of knowledge and expertise Increases knowledge about topic Provides an insight on the depth of knowledge of others Develops social and inter-personal communication skills Develops critical thinking Promotes self-reflection Can be done online Cheap	Not all learners may participate Trainer must be able to respond to learner's questions Learning experience impacted by level of trainer's knowledge about the topic	All	Post question and answer test

Seminars: Are used to get incident commanders to brief a small group on a specific incident command topic followed by a discussion. They allow commanders to learn about any aspect of incident command through the researching and sharing of knowledge and experience. Seminars help to protect against the loss of experience by linking theory to practice (Table 12).



Table 12: how seminars complement real incident command experience

Seminar			
Advantages	Disadvantages	Elements of command experience	Evaluation Methods
<ul style="list-style-type: none"> Can focus on specialised aspects of incident command Encourages the sharing of knowledge and expertise Links theory to practice Increases knowledge about topic Provides an insight on the depth of knowledge of others Develops social skills, including inter-personal communication Develops critical thinking Promotes self-reflection Cheap 	<ul style="list-style-type: none"> Can take time to prepare Learning limited to learner's investment in researching and presenting the topic Trainers must know topic intimately to correct errors and prevent bad habits/practice from being passed on 	All	Pre and post seminar test

Workshops: Are used to develop practical skills in a training environment, for example. how to use ICT. They often begin with a demonstration and allow commanders to progress at their own pace with emphasis placed on monitoring their performance and correcting errors. Workshops help to protect against the loss of experience by overtly linking theory with practice, for example. communication theory with communication practice (Table 13).

Table 13: how workshops complement real incident command experience



Workshop			
Advantages	Disadvantages	Elements of command experience	Evaluation Methods
<ul style="list-style-type: none"> Links theory to practice Can be a good basis for problem solving Encourages the sharing of knowledge and expertise Provides an insight on the depth of knowledge and skills levels of others Develops practical skills in relation to skill area Develops social and inter-personal communication skills Develops critical thinking Promotes self-reflection 	<ul style="list-style-type: none"> Can be expensive in terms of time and equipment Can take time to prepare Availability of sufficient equipment Trainer must be able to respond to learner's questions Learning experience impacted by level of trainer's knowledge and skills about the topic 	<p>All</p>	<p>Pre and post workshop practical test</p>



Practical learning

Demonstration and practice-based training develop the skills that incident commanders must demonstrate to be safe and effective when in charge. For example, these skills include the ability to use information and communications technology, to perform the command skills, and to implement operational tactics. The training methods include demonstrations, practical exercises and computer-based simulations. However, some are often resource intensive in nature, and exercises and simulations may have a limited number of command positions available. So, they do not readily provide an every-day opportunity to practise command skills, hence the great emphasis on operational incidents as a forum to do so. Yet, there is evidence to demonstrate the



performance of incident commanders during immersive simulations is similar to that they demonstrate on the incident ground. Fundamentally, the more realistic simulations are the better the incident command experience gained.

Demonstration and Practice -based Training Methods

There are a variety of training methods that can be used to deliver demonstration and practice-based training. Brief descriptions of the primary methods are listed below together with a table illustrating the advantages and disadvantages of the method and its links to the elements of command:

Demonstrations: Used primarily to demonstrate a practical skill, for example. command skills or use of ICT. The skill and its importance are explained and then demonstrated (video clips of experts can be used as they add realism and/or can demonstrate dangerous or one-off situations) after which the learners practice the skill. It is useful for correcting errors with individuals. Demonstrations help to protect against the loss of experience by allowing crucial technical and command skills to be practised and developed into automatic responses (Table 14).

Table 14: How Demonstrations Complement Real Incident Command Experience

Demonstration			
Advantages	Disadvantages	Element(s) of Command Experience	Evaluation Methods



Links theory and practice
 Demonstrations by experts (including via video clip)
 Videos of learners practising the skill can be used for feedback and/or self-reflection to enhance learning
 Key points can be stressed and repeated
 Sequence of actions can be observed
 Creates cues and memories
 Develops social and motor skills into automatic responses
 Builds confidence in use of skill
 Encourages self-reflection
 Encourages questions
 Can be done online

Learning experience impacted by trainer's ability to demonstrate the skill, for example. bad habits or techniques can be passed on

Command skills practice
 Coping with pressure
 Making difficult decisions
 Dealing with unexpected events

THINCS
 behavioural marker system
 Technical skills assessment

Role plays: Are used to enable incident commanders to feel the influences and pressures of their role, for example. conflicts of interest or team conflicts that must be resolved. They are very effective at dealing with personal and social skills, and attitudinal issues, for example. how an individual views the work of another team or agency, or how they view experts. They are also useful for linking theory to practice. Role plays help to protect against the loss of experience by exposing incident commanders to feelings of pressure experienced as part of their role and allowing them to use their interpersonal skills in difficult situations (Table 15):

Table 15: How role plays complement real incident command experience



Role play			
Advantages	Disadvantages	Elements of command experience	Evaluation methods
<p>Links theory and practice</p> <p>Develops social and interpersonal communication skills</p> <p>Useful for changing attitudes</p> <p>Develops problem solving skills</p> <p>Encourages creative solutions</p> <p>Develops critical thinking to pick out important points</p> <p>Creates cues and memories</p> <p>Develops personal resilience</p> <p>Builds confidence</p> <p>Encourages self-reflection</p> <p>Encourages questions</p> <p>Videos of learners practising the skill/attitude can be used for feedback and/or self-reflection to enhance learning</p> <p>Cheap</p>	<p>Can make some learners feel threatened</p> <p>Can take time to prepare</p> <p>Learning experience impacted by trainer's ability to prepare, facilitate and debrief the role play</p>	<p>Command skills practice</p> <p>Coping with pressure</p> <p>Making difficult decisions</p> <p>Dealing with unexpected events</p> <p>Experiential learning</p>	<p>THINCS behavioural marker system</p> <p>Questionnaire</p> <p>Debrief/interview of incident commander(s)</p>



Tabletop Exercises: Are used are discussion-based exercises where team members meet to discuss their roles during an emergency and their responses to a particular emergency situation. They are useful for testing the response to a new risk or standard operational procedure. Multi-agency tabletop exercises provide an insight into the roles, needs and priorities of other agencies. Tabletop exercises help to protect against the loss of experience by allowing incident commanders to test their knowledge and practice their command skills. They develop their understanding of problems associated with specific sites and enable them to explore the implementation of new standard operational procedures (Table 16).

Table 16: How Tabletop Exercises Complement Real Incident Command Experience

Table top Exercise			
Advantages	Disadvantages	Elements of command experience	Evaluation Methods



Can simulate a real or possible situation, including at specific sites

Can be used to test a new standard operational procedure

Allows technical skills to be practised, for example.

implementation of operational tactics

Allows command skills to be practised

Allows the consequences of decisions to become obvious

Creates cues and memories

Allows experience and knowledge to be shared

Extends or creates schema with new knowledge and insight associated with incident type and the challenges faced

Builds confidence and self-belief

Develops critical thinking

Develops self-reflection

Encourages experiential learning, for example.

actively seeking

understanding and

reflecting on rationale for decisions - such learning

becomes available for

future intuitive decision making.

Can be expensive to facilitate

Take time to organise

Availability of suitable venues

Learning experience limited if:

- No quality assurance of incident command undertaken

- Timely debrief or feedback fails to take place

Learning experience impacted by level of

trainer's exercise

design and

organisation skills

All

Pre and post exercise test

Questionnaire

Debrief/interview of incident commander(s)



Small-scale live exercises: Are used for level 1 and 2 commanders to practise their technical and command skills. They can be made realistic by taking place in real time, at a relevant location, using live casualties, with escalations in command, and by introducing realistic stressors. Small-scale exercises help to protect against the loss of experience by allowing incident commanders to practise under controlled conditions and develop their knowledge of standard operational procedures, self-awareness and confidence (Table 17).

Table 17: How Small-scale Live Exercises Complement Real Incident Command Experience

Small-scale Practical Exercise

Advantages	Disadvantages	Elements of command experience	Evaluation Methods
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Can simulate a real or possible situation
 Allows technical skills to be practised and developed under realistic conditions, for example.
 implementation of operational tactics
 Allows command skills to be practised and developed under realistic conditions
 Allows the consequences of decisions to become obvious
 Develops awareness of personal limitations
 Creates cues and memories
 Allows experience and knowledge to be shared
 Extends or creates schema with new knowledge and insight associated with incident type and the challenges faced
 Builds confidence and self-belief
 Develops trust in others of a commander(s) abilities
 Develops critical thinking
 Develops self-reflection
 Encourages experiential learning, for example. actively seeking understanding and reflecting on rationale for decisions - such learning becomes available for future intuitive decision making.

Can be expensive to facilitate
 Take time to organise
 Resource intensive
 Availability of suitable venues
 Availability of operational resources
 Learning experience limited if:
 • No quality assurance of incident command undertaken
 • Timely debrief or feedback fails to take place
 Learning experience impacted by level of trainer's exercise design and organisation skills

All

THINCS behavioural marker system
 Technical skills assessment
 Questionnaire
 Debrief/interview of incident commander(s)



Large-scale multi-agency live exercises: Are used for commanders of all levels to practise their technical and command skills. They can be made realistic by taking place in real time, at a relevant location, with other agencies, using live casualties, with escalations in command, and by introducing realistic stressors. Large-scale multi-agency exercises help to protect against the loss of experience by allowing incident commanders to practise under controlled conditions and develop their knowledge of standard operational procedures, interoperability, the work of other agencies, and high risk sites. They allow commanders to explore their leadership, decision making, stress management and all other command skills to develop confidence and an understanding of their personal limitations (Table 18).

Table 18: How Large-scale Multi-Agency Live Exercises Complement Real Incident Command Experience

Large-scale Multi-agency Live Practical Exercise			
Advantages	Disadvantages	Elements of command experience	Evaluation Methods



Can simulate a real or possible situation

Allows technical skills to be practised and developed under realistic conditions, for example. implementation of operational tactics and use of ICT

Allows command skills to be practised and developed under realistic conditions, for example. leadership, interoperability and stress management

Allows the consequences of decisions to become obvious

Develops awareness of priorities and needs of other agencies

Develops awareness of personal limitations

Creates cues and memories

Allows experience and knowledge to be shared

Extends or creates schema with new knowledge and insight associated with incident type and the challenges faced

Builds confidence and self-belief

Develops trust in others of a commander(s) abilities

Develops critical thinking

Develops self-reflection

Encourages experiential learning, for example. actively seeking understanding and reflecting on rationale for decisions. Such learning becomes available for future intuitive decision making.

Are expensive to facilitate

Take a long time to organise

Resource intensive

Availability of suitable venues

Availability of operational resources and those of other agencies

Learning experience limited if:

- No quality assurance of incident command undertaken
- Timely debrief or feedback fails to take place

Learning experience impacted by level of trainer's exercise design and organisation skills

All

THINCS behavioural marker system

Technical skills assessment

Questionnaire

Debrief/interview of incident commander(s)

Computer simulation suite exercises: Are used for commanders of all levels to practise their technical and command skills via computer simulators. These involve use of a number of pods



used to represent different perspectives of an incident, for example. a replica command vehicle or strategic coordination group. They can be made realistic by taking place in real time, based on real locations/sites, with other agencies, with escalations in command, and by introducing realistic stressors. Computer simulation suite exercises help to protect against the loss of experience by allowing incident commanders to practise under controlled conditions and develop their knowledge of standard operational procedures, interoperability and the work of other agencies. They allow a commander to explore their leadership, decision making, personal resilience and other command skills to develop their confidence and improve awareness of their personal limitations (Table 19).

Table 19: How Computer Simulation Suite Exercises Complement Real Incident Command Experience

Computer Simulation Suite Exercise			
Advantages	Disadvantages	Elements of command experience	Evaluation Methods



Can simulate a real or possible situation

Can be used where it is not feasible to use the real site, for example. high security locations such as a military or international airport

Can be repeated for either the same or different commanders until a desired level of learning is achieved

Can facilitate multi-agency exercises

Can use role-players to represent essential participants, for example. other agencies

Allows technical skills to be practised and developed

Allows command skills to be practised and developed, for example. leadership, decision making and stress management

Can develop awareness of priorities and needs of other agencies

Develops awareness of personal limitations and resilience

Creates cues and memories

Allows experience and knowledge to be shared

Extends or creates schema with new knowledge and insight associated with incident type and the challenges faced

Builds confidence and self-belief

Develops trust in others of a commander(s) abilities

Develops critical thinking

Develops self-reflection

Encourages experiential learning, for example. actively seeking understanding and reflecting on rationale for decisions. Such learning becomes available for future intuitive decision making.

Cost of computer software/software license

Cost of computer hardware

Can be expensive to facilitate, for example. if a multi-agency exercise

Take a long time to develop and organise

Availability of a computer simulation suite

Availability of operational resources (and those of other agencies)

Learning experience limited if:

- No quality assurance of incident command undertaken
- Timely debrief or feedback fails to take place

Learning experience impacted by level of trainer's computer simulator, exercise design and organisation skills

All

THINCS behavioural marker system

Technical skills assessment

Questionnaire

Debrief/interview of incident commander(s)

Virtual reality computer simulation exercises: Are used to enhance the environmental realism of a



computer simulation. It is a medium composed of interactive computer simulations that sense the commander's position and actions, and replace or augment the feedback to one or more senses, giving the feeling of being mentally immersed or being "present" in the simulation. A virtual reality may be created within a headset or via a CAVE (Cave Automatic Virtual Environment) which uses multiple projectors to display a scene on 3 – 6 sides of a cube-shaped room. Virtual reality computer simulations enable commanders at all levels to practise aspects of their technical and command skills. They help to protect against the loss of experience by allowing incident commanders to practise under controlled conditions and develop their knowledge of standard operational procedures, specific sites, or operational environments. They permit commanders to explore their decision making, situational awareness, and personal resilience to develop their confidence and improve awareness of their personal limitations (Table 20).

Table 20: How Virtual Reality Computer Simulation Exercises Complement Real Incident Command Experience

Virtual Reality Computer Simulation Exercise

Advantages	Disadvantages	Elements of command experience	Evaluation Methods
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Can simulate a real or possible situation

Can be used where it is not feasible to use the real site, for example. high security

locations such as a military or international airport

Can be repeated for either the same or different commanders until a desired level of learning is achieved

Can use role-players to represent essential participants, for example. other agencies

Allows technical skills to be practised and developed

Allows command skills to be practised and developed, for example. leadership, decision making and stress management

Can develop awareness of priorities and needs of other agencies

Develops awareness of personal limitations and resilience

Creates cues and memories

Extends or creates schema with new knowledge and insight associated with incident type and the challenges faced

Builds confidence and self-belief

Develops critical thinking

Develops self-reflection

Encourages experiential learning, for example. actively seeking understanding and reflecting on rationale for decisions. Such learning becomes available for future intuitive decision making.

Cost of computer software/software licence

Cost of developing new simulations

Cost of computer hardware

Cost and availability of dedicated virtual reality facility

Learning experience impacted by the level of immersion achieved by the simulator, for example. the degree of realism portrayed via crowd behaviour, interaction with avatars, real-world environment, and FRS equipment

Learning experience limited if:

- No quality assurance of incident command undertaken
- Timely debrief or feedback fails to take place

Learning experience impacted by level of trainer's abilities to facilitate and design a virtual reality computer simulation exercise

All

Pre and post exercise test

Questionnaire

THINCS behavioural marker system

Incident commander(s) interview/debrief



Personal computer (PC)-based simulation exercises: Are used to develop their knowledge of standard operational procedures, for example. tactical withdrawals, emergency evacuations and BA emergencies. PC-based simulations help to protect against the loss of experience by allowing incident commanders to practise the implementation of operational tactics at a variety of incidents, the sending of incident messages and resourcing of an incident (Table 21).

Table 21: How Personal Computer-based Simulation Exercises Complement Real Incident Command Experience

Personal Computer-based Simulation Exercise

Advantages	Disadvantages	Elements of command experience	Evaluation Methods
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Can simulate a real or possible situation
 Allows a limited range of technical skills to be practised and developed, for example. knowledge of standard operational procedures
 Allows a limited range of command skills to be practised and developed, for example. decision making and situational awareness.
 Develops awareness of knowledge limitations
 Creates cues and memories
 Extends or creates schema with new knowledge and insight associated with incident type and the challenges faced
 Develops critical thinking
 Develops self-reflection
 Can be done online

Cost of software/software license
 Learning experience limited if:
 • No quality assurance of incident command undertaken
 • Feedback fails to take place
 Learning experience impacted by level of trainer’s computer simulator exercise design skills
 Learning experience limited to available simulations

Making difficult decisions
 Implementing operational tactics
 Different types of incident

Pre and post exercise test
 Questionnaire

Tactical decision exercises: Are used to practice decision making and other command skills such as situational awareness, personal resilience, interpersonal communication, and teamwork. They allow commanders at all levels to develop and improve their intuitive decision making and judgement and boost their expertise via repeated exercises that are critiqued at the end. Tactical decision exercises help to protect against the loss of experience by developing shared



understanding and recognition of problems and expanding repertoires of patterns that can be recognised and acted upon at incidents (Table 22).

Table 22: How Tactical Decision Exercises Complement Real Incident Command Experience

Tactical Decision Exercise

Advantages	Disadvantages	Elements of command experience	Evaluation Methods
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Very simple to create
 Simulate, short specific instances of an incident, for example. arrival and take over
 Can simulate real or possible situation
 Allows a limited range of technical skills to be practised and developed, for example. knowledge of standard operational procedures
 Allows command skills to be practised and developed, for example. decision making and situational awareness
 Develops awareness of problems associated with aspects of incident command, for example. briefing
 Develops awareness of knowledge limitations
 Allows experience and knowledge to be shared
 Develops trust in others of a commander(s) abilities
 Creates cues and memories
 Extends or creates schema with new knowledge and insight associated with incident type and the challenges faced
 Feedback and debrief of incident command built into its design and ensures bad habits and errors are highlighted
 Develops critical thinking
 Develops self-reflection
 Can be done online
 Cheap

Learning experience impacted by level of trainer's abilities to facilitate and design a tactical decision exercise

All

Pre and post
 exercise test
 Questionnaire



Pre-mortem exercise: Are used to explore what can contribute toward catastrophic incident outcomes. Such incidents are rare and associated with worst case scenarios, i.e. hypothetical, future events that have extreme negative outcomes. The identification of worst case scenarios assists incident commanders to develop plans to reduce the likelihood of the event from happening or to mitigate its consequences. The technique may also be adapted to explore the decision making and critical thinking associated with the use of, for example operational discretion. Pre-mortem exercises help to protect against the loss of experience by reducing the chance of being surprised by unexpected events, highlighting faulty assumptions and errors in decision making, identifying actions to reduce the probability of a worst case scenario event occurring, and identifying ways to reduce the severity of the outcomes (Table 23).

Table 23: How Pre-mortem Exercises Complement Real Incident Command Experience

Pre-mortem Exercise			
Advantages	Disadvantages	Elements of command experience	Evaluation Methods



Very simple to create
 Can simulate unexpected events within an incident, a rare type of incident, or a worst case scenario situation
 Can be adapted to explore issues such as operational discretion, tactical withdrawal, etc
 Allows technical skills to be practised and developed, for example. knowledge of standard operational procedures
 Allows a range of command skills to be practised and developed, decision making, situational awareness, interpersonal communication and personal resilience
 Develops awareness of problems associated with aspects of incident type/situation
 Develops awareness of knowledge limitations
 Allows experience and knowledge to be shared
 Develops trust in others of a commander(s) abilities
 Creates cues and memories
 Extends or creates schema with new knowledge and insight associated with incident type and the challenges faced
 Feedback and debrief of incident command built into its design
 Develops critical thinking
 Develops self-reflection
 Can be done online
 Cheap

Learning experience impacted by level of trainer's abilities to facilitate and design a pre-mortem exercise

All

Pre and post exercise test
 Questionnaire



Video reviews of performance: Are used to consolidate and develop an incident commander’s experiential learning and self- awareness. The performance of an incident commander may be captured on video via a fixed system in a computer simulation suite or via a helmet or body worn camera. The video of a commander’s performance is replayed during a review of their performance (preferably with a coach or mentor) to act as a means for them to recall information, for example. why they did something. It also allows them to see their behaviours when performing the role and what impact they had on those around them and their command. Video reviews of performance help to protect against the loss of experience by encouraging commanders to think critically and self-reflect, which are crucial features of experiential learning and encourage deep learning (Table 24).

Table 24: How Video Reviews of Performance Complement Real Incident Command Experience

Video Review of Performance

Advantages	Disadvantages	Elements of command experience	Evaluation Methods



Allows technical and command skills to be observed and critiqued

Video can be stopped and replayed to highlight key areas for discussion

Develops awareness of problems associated with behaviours demonstrated as incident commander

Develops awareness of knowledge limitations

Develops awareness of personal limitations

Allows experience and knowledge to be shared

Creates cues and memories

Extends or creates schema with new knowledge and insight associated with incident commander behaviour

Feedback and debrief of incident command built into its design

Develops critical thinking

Develops self-reflection

Cheap

Cost of equipment

Special arrangements required for use of helmet or body worn cameras

Learning experience impacted by level of trainer's incident command expertise to effectively review an incident commander's performance

Experiential learning
Critical thinking
Personal limitations

THINCS behavioural marker system
Incident commander(s) feedback/debrief



Coaching and mentoring: Is used to develop the knowledge and skills of personnel. Most incident commanders are developed and assessed by their line manager. So by default, line managers act as coaches to develop their commanders to be an effective and safe. Mentors are independent of a developing commander’s formal assessment processes and offer impartial insights into their development. The role of a mentor should be highly sought after and valued. Coaching and mentoring help to protect against the loss of experience by exposing commanders to new ideas and ways of thinking, concentrating self-reflection on their own command practice, and providing encouragement to boost their confidence. Mentoring also provides experienced commanders opportunities to reflect on their own command practice, enhance their status, share their experience with new or progressing incident commanders, and enhance their job satisfaction. By sharing their experience mentors create a way to transfer lessons learned from a Service’s command history from one generation of commanders to the next (Table 25).

Table 25: How Coaching and Mentoring Complement Real Incident Command Experience

Coaching and mentoring			
Advantages	Disadvantages	Elements of command experience	Evaluation Methods



Allows the performance
of technical and
command skills to be
analysed and critiqued
based on real and
simulated incidents

Can correct errors and
bad habits

Develops incident
commander knowhow
Develops awareness of
problems associated
with behaviours
demonstrated as
incident commander

Develops awareness of
knowledge limitations
Develops awareness of
personal limitations

Allows experience and
knowledge to be shared

Creates cues and
memories

Extends or creates
schema with new
knowledge and insight
associated with different
types of incident

Extends or creates
schema with new
knowledge and insight
associated with incident
commander behaviour

Develops critical
thinking

Develops self-reflection

Availability of suitably
qualified, experienced
incident commanders
to act as coaches or
mentors

Learning experience
impacted by level of
incident command
experience of coach or
mentor

Learning experience
restricted to ability of
coach or mentor to
perform the role

Cost of coaching and
mentoring
qualifications

Experiential
learning
Critical thinking
Personal
limitations

Incident
commander(s)
feedback/debrief



Appendix 1 :Improving incident command despite declining operational experience

The CFOA publication 'The Future of Incident Command' made a number of recommendations to fire and rescue services with regards to improving incident command. Challenge 1 confronts the reducing number of incidents and the need to maintain command experience.

Challenge 1: Recommendations

- Increase opportunities to gain command experience:
 - Fire and Rescue Services may wish to consider the findings of this research in relation to their operational and training strategies
 - Fire and Rescue Services may also wish to review the amount of opportunity that incident commanders of all levels reasonably have to practice incident command
 - Fire and Rescue Services may also wish to review the pressures under which commanders are expected to operate and assure themselves that commanders have ample opportunity to practice command skills under realistic pressures, and have the opportunity to gain the expected knowledge needed to command incidents in their risk areas
 - Fire and Rescue Services may also wish to review their organisational culture and the extent to which it provides an environment that encourages the uptake of command opportunities through a positive learning environment
 - Fire and Rescue Services may also wish to assure themselves that operational preparedness, in the sense of providing adequate opportunities to practice command and succession planning, is fully accounted for when considering alternative working patterns and capacity to undertake additional activities
- Consider the elements of operational experience lost through the reduction in incidents and explore a wide range of methods to replace them:
 - Fire and Rescue Services may wish to explore a wide range of methods to replace elements of incident command lost through the decline in operational incidents, giving consideration to methods such as tactical decision making exercises and other forums to share experiences
 - Fire and Rescue Services may wish to consider the balance between the methods of simulation, and assure themselves that incident commanders have enough opportunity to practice all command skills under realistic pressures
 - Fire and Rescue Services may wish to consider the amount of investment in the development of simulations and command training, including considering the effectiveness of simulated exercises and the competence of those designing and



delivering incident command training

- Fire and Rescue Services may wish to consider the use of helmet-mounted video cameras for self-development and to share learning