Incident Commander as the leader on-scene
Research methods, tasks and roles
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I. INTRODUCTION

Many types of unexpected event that threatens values, such as health and environment call for the need of the emergency services; The police, the ambulance services and the fire department. Typically, it is the moment at which a threat is transformed into actual fatalities or other substantial loss, there is a need for immediate response from the emergency services. The response aims to avoid undesired outcomes, e.g. causing death. Incidents involving all of the emergency services are e.g. traffic accidents, buildings fires, collapsing structures, leakage of hazardous materials and terror attacks. The first local response and rescue effort on-scene the incident, is a joint operation between the local police, the fire department and the medical service. Accidents, crises etc. can be described as the ultimate test of plans, preparedness and the management and emergency response capability of a society. The ability to cope effectively when crises arise is becoming increasingly relevant because of factors now tending to exacerbate risk and the increased focus on these. Especially the media, calls for urgent and effective action. The statement of Boin (2005) [1], “Crisis management bears directly upon lives of citizens and the well-being of societies” (p.1), emphasises why crises have to be coped with effectively. A crisis calls for management and leadership. The management and immediate actions taken by the local authorities and the emergency services need to result in mitigation and success. According to Fredholm (2006) [2] every response operation needs leadership. The more complex and less routine, the more need of coordination, strategic planning, prioritising and decisions to cope with the problems at hand. He calls for distinct and explicit leadership in demanding situations. Responses to incidents, as building fires, are responses to unexpected, unplanned, unprecedented and unpleasant (especially to the victims) situations [3]. These un-ness challenges the traditional way of research of accidents and crises. The situation on-scene and the development when time is running are influenced by the actors on the fire ground and by the inherent variables in the situation by itself, as the physical element and what’s on stake. The situation is rapidly changing, has multiple actors and first responders always respond to unique situations, sometime with large uncertainty [4]. Immediate action is needed, measures cannot be postponed and the responder cannot take a time - out.

This paper discusses incident command as presented in the research literature and reviews the research methods to uncover the incident commander’s leadership and the subsequent effect. Researchers face several challenges [5], and the paper present some solutions to address more rigor scientific results. Our studies were designed to better understand the role, performances and influence of fire services ICs during response. Our data are collected from relatively major emergency response actors on a Scandinavian scale, but not the largest. We cannot claim that our data are representative for all types of emergency response structures, even though the data showed typical patterns in ICs’ reasoning and behaviour in fire services across Scandinavia. By use of observations in real time [5,6], use of head mounted cameras [7,8,9,10], and subsequent interviews it is possible to study the role of leadership. Finally, we will discuss potential for improvements to manage complicated accident scenes taking the rescue services’ contexts into consideration.

The central research question we ask is: In which way does the conceptualisation of incident command and our methodological approach affect our judgements regarding the performance of the incident commander, and to what extend we can conclude if the outcome is successful or not?
Firstly we present the role, task and leadership of the incident commander and our reflections, then the research in the field and how it can be improved, some findings from our research and finally some reflections upon improvement and future research.

II. WHAT IS INCIDENT COMMAND ABOUT?

On scene at the emergency, the incident commander (IC) is the predetermined manager and leader. This individual is responsible for all aspects of the actions, coordination’s and efforts of multiple organisations and individual responders, and finally the outcome of the activity at the incident ground (Bigley and Roberts, 2001) [11]. In Manual for the use of Fire brigades published ca. 1920 [12], has the chief officer (incident commander) “the entire responsibility, and consequently, he has the entire command of the whole”. Responders, superiors and the public expect the incident commander to have command and control. The aim of IC includes reduction of uncertainty, provide an authoritative account of what is going on, why it is happening, and what has to be done to minimise the impact. The position of IC is often seen as the responsibility of a single designated person. His responsibility is to be the commanding officer and have overall management on scene. Overall management includes tasks as determining incident objectives and strategy, setting immediate priorities and assigning subsequent priorities, working out an action plan, approving requests for additional resources or for the release of resources, informing agencies and organisations of the incident status and demobilising when appropriate.

The emergency services respond solely to a number of situations without assistance from other services. E.g. the ambulance services to a heart illness, the police to domestic violence and the fire service to a chimney fire. In this paper we will use the term incident commander about the leader from the police, the ambulance service and the fire service. The objectives of the commanders from the police and the fire brigade in acute settings are to ascribe, assess and negotiate objectives of the commanders from the police and the fire service. The incident commander is expected to be able to handle uncertainties through “anomalizing” and “proactive sensemaking” [14], towards facilitating coordination and reliable performance in an “unknowable” and “unpredictable” context [15]. The operational procedures assume that such an enactment and negotiation of sense is unproblematic even though research into sensemaking have shown how complex collective sensemaking and heedfulness can be to retain in vulnerable situations [16,17].

The on-scene commanding structure and the IC in particular play an important role in fighting emerging crises. Formal leaders carry a special responsibility for making sure that the tasks of leadership are properly addressed and [1]. In general, the leader affects responders’ performances and the outcome. Fiedler [18] states that how well the leader’s particular style, abilities, and background, i.e. experience, contribute to performance is largely contingent on the control and influence the leadership the situation provides for. When the first officer arrives on scene the IC sizes up the situation while the units carry out the standard arrival procedures. Depending on the situation the IC either monitors the progress of the response or initiates a plan that differs from the chosen procedures. The officer is in charge. The IC must establish an appropriate organisation and coordinate the activities for all emergency units. The IC normally acts at tactical level and his subordinate commanders, such as the medical officer, at operational level. On the operational level the IC is at the sharp end of the action, located at a command post, and directs the team performing the orders, the decided tasks. The IC’s role at tactical level is to implement the plans and achieve the objectives set by the strategic level. The tactical level prioritises, plans and coordinates actions on the operational level.

The major aim of a standardised and hierarchical command structure is to have an effective and predictable command system: a functional system well known to all the responders. Leadership is both a position and a process involving collaboration, teamwork, and cooperation. Leadership on-scene an accident can be described, as Boin [1], do, as a set of strategic tasks that encompass the activities associated with the scenes/stages of management. The leadership function seems pivotal to coping and vital to how the incidents evolve. The leadership of teams, as the first responders, is challenging [19, 20, 21,22], and the inherent potential of collapsing leadership can be vital, devastating and in uttermost impact deadly [23,24].

Research into accidents and crises is essential if we are to understand the emergencies at hand, its features, the challenges, the coping and the commander’s leadership. A necessity aim for the researcher will be to understand the incident command process, especially the decision-making process in a way that will help to develop principles and models for increasing the efficiency of incident commanding as the command and control skills [25]. For example, can the research contribute to improving the fire services’ preparedness, it’s actions on the fire ground an IC’s leadership.

III. STUDYING INCIDENT COMMAND AS SENSE ALREADY MADE

A general research approach to incident commanding is inadequate, and our studies show that we need more research related to answering the core question ‘what is incident command inherently about, and which key features and elements affect the leadership and finally the outcome of the response’. It is important to adopt a normative and descriptive approach, but it can be problematic to understand and subsequently improve the process if researchers confine their research work as Kohler and Harvey [5]. describe. They pinpoint practical questions and applied settings as important features in research of decision making, an important part of the incident commanding. Post-accident investigations provide in-depth analyses of causal factors relating to the responsible parties of the systems and objects involved and rarely discuss the effort of the emergencies.
A critical in-depth view of crisis management and IC’s performance is rarely seen. The discotheque fire disaster in Gothenburg, Sweden, 1998, killing 63, and the terror attack at Utøya, Norway, 2011, killing 69 [27,28] are on the other hand, thorough analyses of the response and the IC’s efforts. The IC’s performances are contextual and should be assessed on the specific evidence, circumstances and his assessments. Very little research with real-time observations exists that sheds light on the incident commander’s role and exercise [4].

Most of the research of incident commanding and features affecting the response on-scene has been carried out in the aftermath of the accident and tend solely to focus on the cognitive capabilities of the individual commander [14,15,17,29]. The commander becomes the privileged sense maker and the centre for intra (Police / EMS) - and intersectoral negotiation of sense (units from the Fire Service). Recent studies have shown that the notion of the individual commander as the centre for leadership is incomplete, and that the function of the commander to a higher degree should be conceptualised as a sense-facilitator [30]. Studies in Scandinavia shows furthermore, that the commander often ends up behaving reactively instead of proactively, even though our standard operational procedures expect then to do so [4,8], and often differ from normative models [31]. This interest into challenging our notion of the commander as the leader on the top of the hierarchy, complies with a broader tendency in research into leadership through terms as shared leadership [31] or collective leadership [33]. Researchers as Klein [6,36-41] Fredholm [22,42-45], Flin [20,21,24] and Tissington [46] has focused on incident commanding and improvement of IC’s leadership. Their research findings are mainly based on case studies and historical data, e.g. obtained from interviews or documents studies as reports from a board of inquiries.

IV. STUDYING INCIDENT COMMAND AS SENSE IN THE MAKING

The notion of the commander as the centre for decision-making allows us to study the intersection between orders and actions in hindsight. But, if we revise the conceptualisation of the commander as a sense-facilitator we need to revise our methods too. From a methodological perspective the challenge is, that we need to change the unit of analyses from “sense already made” to “sense in the making”. Sense already made can to some extend be reconstructed by historical data, e.g. obtained from interviews or documents studies. Studying sense in the making demands methods, which are capable of capturing and condensing tentative micro-sociological processes as used in studies related to decision-making in natural settings [7,25,30,47]. Observations, transcript and retrospective interviews provide a solid basis for analysis, but access and resources to secure and control the data is often lacking. Gaps and errors must be filtered out. Even public inquiry reports as [28] turns out to have factual errors and misunderstandings. These factors hamper the traditional way of research.

The practice of the incident commander can be characterised as a privileged sense- and decision maker. Fulfilling such a function is not solely a cognitive endeavour but is also a social process that shapes interpretations contingent on the conduct of others [17,29]. The manager is “a parliament of selves” [48].and these selves are constructed, tested and modified through interaction. These ongoing interactions and negotiations is affected by sociocultural factors, which are constructed and reconstructed in the community of practice [49,50]. We have to reframe incident command as relational management and reframing the function of the incident commander as a sense-facilitator [51].

A normal fire service response is considered to be 90-95% of all call-outs [52], in which standard procedures work very well and the uncertainties are minor. It indicates that the need of a leader of the response, an IC, normally is minor. Stålsett et al. [54] studied crisis operations in the oil and gas industry, which has payed huge efforts in safety procedures, drills and multi-level leadership. Their study indicates that the “the utilized leadership practices hamper efficient intra- and intergroup cooperation during normal routine operations. In addition, and more alarming, the shift to authoritarian “control and command” leadership during crisis settings, which emphasizes rapid decisions and effectivity, hinders teams’ ability to adapt to and handle unforeseen and chaotic situations”.

In contrast to studying IC from a solely cognitive approach as “sense already made” our research in sense in the making shows, that the ICs merely do any systematic risk management strategies. The ICs did not consider critically the contents of the alarm messages and rarely asked for more information. The initial response is generally automatic and starts before the leader has grasped the situation and outlined the response to be made which can explain his behaviour. Automatic response behaviour was prominent, even at major incidents where the units had limited experience from similar situations. Tissington [46] claims that the IC’s recognition can be described by four by-products: crew safety, casualty rescue, containment and time assessment. The essence of the incident is captured if these by-products are understood. The first three coincide with every fire fighter’s prioritised goals for their response and the fourth is part of the prevalent contextual frame condition. However, incidents will always contain some degree of uncertainty, especially novel and dynamic situations. Our data material did not support the presence of a structured risk management process by the individual ICs. The idea of identifying critical observable quantities is interesting, for example those proposed by Tissington [46] or the situational cues described by Klein [37] , in order to assess the hazards at stake and the possible actions available. Rake [55] has outlined a model addressing observable quantities in action and relates uncertainties to these quantities in order to provide insight and proactive management strategies on the scene.

The findings from studying IC as “sense in the making” can be summarised this way:

- Incident commanders gave few commands
- The influence from tacitly understood routines and procedures on strategic and tactical decisions on scene
is considerable. Recognition should include the ICs’
general reliance on established practice.
- Very few ICs searched for additional information
beyond what was provided by the call centre,
especially in the earliest phases of a call-out
- On arrival it was vital to the preliminary response what
the IC immediately observed. The observation can be
described as an initial outline of the situation and not
an entire and essential sizing-up
- The responses were mainly reactive, comprising direct
action to deal with the visible concrete hazard known
to the ICs. Pro-active strategies aimed at revealing and
tackling uncertain events and quantities were rarely
seen
- Risk assessments were mainly used to clarify the
responders’ personal safety.

The IC’s does not make many decisions because many premises
are in place before the IC is operational. The initial phase on
scene is Hence, it could be questioned whether he actively
manages the crises or whether it is more correct to regard the
IC as a passive, but important, supervisor, important for
maintaining the communication flow.

V. FUNDAMENTAL METHODOLOGICAL CHALLENGES

Regardless of the unit of analysis both methodological
perspectives face fundamental challenges but share
indeed the common premises that the analyses of the
incident and the incident is divided in time and space. It
is therefore regardless of the methodological approach
impossible to reconstruct the situation and control all the
variables, which are vital to understand not only the
individual commander, but also the context which
influence – and is being influenced by the commander and
the incident crew.

The challenge of the research process is at least
twofold; validity and reliability. The first relates to
the measures of what you intended to measures. It’s
the interpretation of the data that is validated, not the
measurement methods themselves or the test that are
carried out. Secondly to get reliable data, i.e., the extent
to which the measurement gives results that are
consistent. Research cannot be valid unless it is reliable.
Manipulation of variables to be studied, control of cause and
the following effects, randomising, control groups, falsification
and ethical considerations also challenges the traditional view
of research. Even if its methodological problems the research
on incident commanding can follow the sociological qualitative
tradition by use of case studies, observations and even action
research. The latter implies that the researcher must be on-scene
when the incident and the response unfold.

A. How can we assess successful or un-successful incident

The research into incident command shows that we need to
acknowledge that the practice of doing incident command
encompass some vital contradictions.
- Incident command relates to the cognitive
capability of the individual, but as well the shared
cognition, understood as the negotiation of sense
in (and between) the incident command team(s).
- The coordination of the decision-making relies as
well on the construction and negotiation of sense
intra-sectorial and inter-sectorial. Such a
construction of sense challenges a merely
cognitive perspective and encompass that the way
we relate to others is situated and sociocultural
embedded.

The experienced incident commander’s serial approach to
making decisions is seen as a key element to succeed and this
is presented in a positive manner in the NDM-research literature
as [36,37,38]. A sociological perspective takes the opposite
view to the serial approach. According to researchers as
Rosenthal and Hart [3,56] the incident commander who
maintains a certain chosen course of action, being unable to
reflect on and redefine the situation, threatens effective
response. Groupthink, information over-/underload, prioritising
the source of information, and increased communication
demands are all issues that could hamper the IC’s ability to
make good decisions.
In our opinion, making inferences about the IC’s performance
and acting on-scene must include analysis of a wider social
perspective in a team framework containing regulatory,
organisational and technological frame conditions as well as
situational characteristics, including physical energy, physical
requirements, mental requirements, emotional requirements,
cooperation prerequisites and dynamics [57,58]. The incident
commanders we observed had varying experience from real
actions, but very few had been involved in abnormal responses.
Their level of expertise is thus rarely challenged nor is it part of
traditional training and debriefing activities. Research of these
possible connections is missing.
The question then becomes, how can we combine a cognitive
and a sociocultural perspective. Our perspective upon this
question is inspired by the use of awareness supporting
technologies [51] combined with participatory action research
[59]. Such a focus allows us to capture and retain the cognition –
the sense making, and the sociocultural situated negotiation
of sense.

Awareness supporting technologies does indeed not allow us to
access “reality”, but it allows is to capture and present an
illustration, which allows the researchers and practitioners to
examine the past as a mutual endeavour. Such an approach
makes it possible for the practitioners to recall the situated
thoughts and feelings in a dialogical session with the researcher.
Such an approach allows us to re-visit the past in a real time
perspective, and by doing so it becomes possible to examine the
incident command-practice conducted and as well the

...
The use of awareness supporting technologies combined with an approach, inspired by participatory action research in Scandinavia shows that our guidelines and standard operational procedures are written from a merely normative perspective. The normative expectations which inscribe expectations of the commander being “proactive, highest educated, high arousal, high technical, tactical as well managerial capacity etc. Our findings (1,2,10) indicates that the incident commander merely give orders on-scene. The incident commander rather monitors the ongoing response and only intervene when the situation is escalating and when the uncertainty is “unpleasant”. The case seems to a higher degree to be, that the incident commander orchestrates the overall area of response (11).

The Norwegian study followed fire service IC’s from Norway and Sweden. The observer was an experienced fire officer with nearly 30 years of experiences from the fire service. The data material includes real – time participant observation of 22 incidents, as traffic accidents, building fires and diving responses. The IC’s were followed from the call-out and until return to the fire station. The emergency responses lasted from five minutes to eighteen hours, according to the complexity of the situation and the type of response called for, from demanding situations with large uncertainties to “normal responses”, in which standard procedures work very well. Decision points/nodes and communication were registered. Normally the IC was interviewed immediately afterwards the response.

The Danish study followed IC’ from Denmark and Norway (both from the fire service and the police) through 1 year in total, and examined the interruptions of the sense-making processes using awareness supporting technologies such as helmet-mounted cameras combined with participatory observation. The camera makes it possible to retain what the IC was doing and saying in the midst and action. The recording was then analysed through dialogical sessions, which enrolled the IC as co-researcher into examining reflective and reflexive processes regarding the IC’s own IC-practice. The dialogical sessions not only made it possible for the IC to reflect upon own practice, but made it possible to examine how interruptions in the sense-making processes was negotiated and handled in the situated context between the members of the incident crew.

Both studies observed and interviewed fire service responders, which are full-time employed, well-equipped, educated and trained responders with substantial experience from normal incidents but less from severe incidents. The national differences between first responders’ experience were minor.

After arrival on the accident scene, whether it concerned a traffic accident, drowning fatality or fire in a block of flats the IC’s focused immediately on what they saw in front of them. They concentrated on details instead of sizing up the incident in relation to the threats and risks. It was very difficult to make them describe what they had to cope with and answer the question: “Are there any contextual elements to consider?”. We did not observe that the ICs were involved in any operational tasks. In one traffic accident the driver was trapped in his damaged car. After the successful response the IC was asked which commands he had given; “Only one, it was to remove the roof of the car”. The IC explained that when the response evolved according to the procedures and his expectations, it was not necessary to interfere. He was only monitoring the response and when the activity was according to his expectancies he did not intervened. The common way of managing the incident scenes was characterized by few decisions and the IC’s monitoring of the activity, even in the case of unfamiliar complex accidents. During the response phases the constant need for information was solved visually and verbally. Every commander got information by generally walking around and talking to his own crewmembers and officers from other emergency units. It was typical that command post on scene was not established. The observed incidents were not considered as major at the time of the occurrences.

VI. CONCLUSION

Our review of the current research into IC shows, that the diversion between focusing on the individual commander from a perspective of “sense already made” and focusing on the commander in the situated context with the incident crew as “sense in the making” reveals very different findings regarding the effect of the role of the IC. When we focus on the capabilities of the individual commander, research tends to conclude, that the individual commander is the very centre for leadership, sense-making and vital decisions. When we explore the incident commander in the situated context it appears to be the case, that the IC to a higher degree becomes a sense-facilitator, but to a less degree is the proactive decision maker. It seems to be, that the methodological approach and the theoretical conceptualisation of IC muddy up our discussions regarding to what extend the commander is successful or not. Is it bad incident command, if the commander takes no decisions, but ensure that the overall handling of the incident is reasonable and the incident crew works effective?

Further research needs to a higher degree to combine the cognitive and the sociocultural perspectives to pursuit that question, and to a higher degree embed the commander (the individual) in the situated sociocultural context. An alternative approach would be to conclude, that the different approaches examines different unit of analysis regarding IC, and we therefore should accept, that we inherently will end up with very different notions regarding what incident command is, and what successful incident command is about. The researcher must thoroughly, in one way or another, follow the incident commander in real actions if we want to reveal important elements of the IC’s leadership and elements affecting the performances.
REFERENCES


