

Why Do Firefighters Sometimes Make Unsafe Decisions? Some Preliminary Findings

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Project D2.3: Safety in Decision Making and Behaviour

Abstract

This poster (a) introduces the "Human Factors Interview Protocol", HFIP, a post-incident interview protocol specifically designed to identify the underlying (human factors) causes of potentially unsafe decisions and (b) presents some preliminary findings obtained in pilot testing the HFIP with 34 firefighters, ranging from Crew Leaders to Incident Controllers.

The Human Factors Interview Protocol¹

In order to maximise the extent to which persons can report on psychological factors it is important that (a) interviews are conducted while the information is still fresh in their minds (preferably within 24 hours) and (b) interviewing techniques are used that stimulate accurate memory recall while countering the natural tendency to offer self-protective justifications.

- 1. Set the parameters:** Introduce the project, the interview itself, the confidentiality mechanisms etc.
- 2. Elicit a narrative summary noting key events as "chapters":** Use maps and check with the person that the list of key events (chapters) elicited matches their recollections.
- 3. Collaborative analysis of each "chapter" in the narrative sequence:** This is the core of the interview. Chapter 1 is always the 24 hours previous to the incident. For each chapter in turn, encourage the person to reflect, recollect and recount in as much detail as possible his or her experiences. Be alert for significant decision points, especially those with potential safety implications.
- 4. Stepping back – wisdom of hindsight:** (a) If you could magically turn the clock back, what might you have done differently? Why? (b) If someone less experienced than you had taken the call, how might he/she have got it wrong?
- 5. Anything else check?** Ask if there is anything else that might be important in this incident. Ask if any (any other) previous experiences, incidents, or war stories might have influenced what they did.
- 6. Big picture—Safety Climate:** (a) What is it like being a member of your crew/work group? (b) How would you say your brigade/region is going with regard to crew safety generally?
- 7. Even bigger picture—Safety Culture:** (a) Overall how would you say your organisation/agency is doing in managing fires? (b) How would you say your organisation/agency is going with regard to crew safety generally?
- 8. Wrap it up:** Thanks, remind of confidentiality, clear finish of the interview

Note: at all steps the person being interviewed is (a) treated as a co-collaborator, rather than as an object of investigation and (b) encouraged to freely recall all experiences rather than being criticised or evaluated

Selection of Incidents

Suitable incidents are any natural or prescribed wildfire that is sufficiently challenging (uncertain) as to require attention be given to maintaining safety (which is just about any incident).

Deliberate steps were taken to avoid all potentially serious incidents so as not to contaminate, or be contaminated by, other interview processes including formal judicial enquiries and critical stress diffusion debriefings.

In this poster we report preliminary findings from the thirty four interviews we have so far conducted, the incidents ranging from small hazard reduction burns to level 3 wildfire incidents. The fire agencies involved comprised the NSW RFS, CFA Vic, and DSE Vic.

Preliminary Findings

As soon as possible after each interview, interviewers listened to the tape recorded interview and reviewed any hand-written notes so as to provide a summary account of what appeared to be the major safety themes.

Our impression from the interviews as a whole is that firefighters, both volunteer and career, do very impressive things, sometimes under quite difficult circumstances. Our focus here is to identify tendencies that are inevitable given human social and cognitive evolution. In acknowledging these tendencies, operational and training practices can be implemented that take such inherent tendencies into account.

Individual Factors

- Mental overload - persons in field command roles (particularly local incident controllers) frequently appeared to be significantly mentally overloaded but reluctant to recruit a dedicated assistant or scribe, or to activate a formal Incident Management Team.
- Firefighter wellbeing - despite the general awareness of, and concern with, the effects of fatigue and dehydration, the primary focus on getting the job done often appears to override such concerns.
- Frustration, complacency and erosion of morale, if required to 'wait' or if tasked to a less interesting part of the fire
- Complacency if the incident appears routine (e.g., at a prescribed burn)
- Reluctance to abandon a current plan and retreat from the fire
- Overinvolvement, particularly if own assets threatened (self-deploying after release from shift)
- Overconfidence in plan (overestimate suppression effectiveness while underestimating fire spread rate).
- Failure to develop backup plans
- Reluctance to admit to personal impairments (illness, fitness, medication effects etc)

Small Group Factors (crew or primary work-group)

- Trust issues - lack of trust in information provided by firefighters one does not know personally
- Cursory changeover briefings - reluctance on the part of both outgoing and incoming shift personnel to engage in detailed, time-consuming briefings
- Negative stereotyping of out-of-region brigades
- Negative stereotyping across career/volunteer roles
- Reluctance to acknowledge and deal with members who place themselves and others at risk

Large Group Factors (agency and/or community)

- A legal and administrative approach to safety focuses on policies and procedures rather than on pragmatic and practical issues
- Inadequate leadership training - brigade captains elected by popularity not leadership skills (who buys the most beers in the pub)
- Funding priorities emphasise (a) shiny trucks over communication networks and (b) numbers of firefighters over suitability of firefighters.



Photo: Adam Hollingworth

Implications of Preliminary Findings

The fact that potentially interesting safety themes emerged from these interviews suggests that research into decision making at even relatively benign fires can be expected to generalise to other fires, including those that pose serious threats to safety and, in fact, progress to severe adverse outcomes.

While many of these preliminary findings may not come as a surprise, there is a need to make explicit the factors that hitherto have only been suspected of being implicated in safety compromises.

With respect to which firefighter roles to target for interview, although useful information was obtained regardless of rank, interpreting this information was easiest if we had also interviewed the Incident Controller, and if appointed, the Safety Officer. Furthermore, if an Incident Management Team (IMT) was activated, the members of the IMT could usefully be targeted, decisions taken in the IMT constraining the decisions made on the fireground².

Note that controlled experimentation using computer simulated scenarios³ will be conducted to confirm these provisional and any subsequent interview findings.

Finally, although the current Bushfire CRC research project avoids potentially serious incidents these preliminary findings suggest that agencies might consider adapting the HFIP interview tool for their own purposes such as (a) debriefing training exercises, (b) operational debriefs, and (c) formal accident and near miss fire investigations.

In Conclusion

Many of the firefighters we interviewed seemed to grasp well the idea that human factors issues are vital and that it is just as important to understand human behaviour as it is to understand fire behaviour. This awareness suggests a likely receptivity should operational guidelines and training materials be modified to embrace human factors issues more thoroughly.

References

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- 2 McLennan, J.P., Holgate, A., Omodei, M.M., Wearing, A.J. (2005). *Bushfire Incident Management Team Decision Making*. Pater accepted for presentation at the 7th International Naturalistic Decision Making Conference. Amsterdam: the Netherlands
- 3 Omodei, M.M., Elliott, G.C., & Walshe, M (2004) *Development of computer simulated wildfire scenarios for the investigation of unsafe decision making*. Bushfire CRC Report 2:2004, Melbourne: Australia (available on the Bushfire CRC website).



Photo: Nick Moir