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Submission Number: NND.001.00651

Submission Of: David Gamble

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What is your submission based on? I am making this submission based on my professional knowledge, qualifications or experience or on behalf of a group or organisation

What is your area of professional expertise?

If you are lodging your submission on behalf of a group or organisation, what is the name of the group or organisation?

Your Submission

In your experience, what areas of the bushfire emergency response worked well?

The mobile phone apps "VicEmergency" and "Fires Near Me NSW" worked well. I personally used information from these two apps to evacuate my family from Mallacoota 24 hours before the fire arrived. Unfortunately 4000 other people did not have my CFA training and were trapped. CFA advice was contradictory.

All Australian Emergency Apps should be seamlessly integrated. I was constantly swapping from one to the other during the critical period.

In your experience, what areas of the bushfire emergency response didn't work well?

Good briefing and up to date fire ground information is critical for the safety of fire fighters and the efficient management of firefighting operations. Traditionally this is achieved by Incident Shift Plans (ISP). ISPs often do not get to the fire crews and they are frequently ignored as too complex and up to 8 hours out of date.

In your experience, what needs to change to improve arrangements for preparation, mitigation, response and recovery coordination for national natural disaster arrangements in Australia?

Staff at CFA Wodonga have developed a technique to deliver the ISP and real time fire ground maps digitally with provision to update throughout the shift. This technology was successfully used by CFA crews operating at Batemans Bay in NSW. The technology is not generally used throughout the CFA and was not being utilized at Corryong when the author was working as Staging Area Manager.
All fire fighting vehicles should be fitted with Digital Equipment (iPad, Android tablet) so that Incident Shift Plans can be delivered and updated rapidly.
This equipment costs less than $1000.

Is there anything else you would like to tell the Royal Commission?

See attached

Do you agree to your submission being published? Yes I agree to my submission being published in my name

Supporting material provided:

Incident Shift Plans.pdf

Incident Shift Plans (ISP) and Fire Ground Situational Awareness.

Summary

Good briefing and up to date fire ground information is critical for the safety of fire fighters and the efficient management of firefighting operations. Traditionally this is achieved by Incident Shift Plans (ISP). ISPs often do not get to the fire crews and they are frequently ignored as too complex and up to 8 hours out of date. Staff at CFA Wodonga have developed a technique to deliver the ISP and real time fire ground maps digitally with provision to update throughout the shift. This technology was successfully used by CFA crews operating at Batemans Bay in NSW. The technology is not generally used throughout the CFA and was not being utilized at Corryong when the author was working as Staging Area Manager.

Incident Shift Plans (ISP)

Incident Shift plans are prepared at the Incident Control Centre (ICC) and distributed at the Staging Area to the fire fighters at shift change.

ISP are in the standard SMEACS briefing format and are essential for the safety of crews and the efficient operation of firefighting activities. Unfortunately ISP frequently fail to arrive at the Staging area prior to deployment, are too complex to rapidly assimilate, contain out of date information and are in a format that is difficult to utilize given the high stress environment of the modern fire ground. Given the lead time to print hundreds of copies and transport them many kilometers to the staging areas, Strike teams frequently depart without this critical information.

There is no mechanism to update an ISP during the shift apart from wireless communications.

Given modern electronic data processing and low cost hardware (less than $1000 per vehicle) it is now possible to dramatically improve the relevance of ISP. Attempts to achieve this following the 2009 were technically successful however failed due to lack of user acceptance. Nowadays given the widespread use of smart phones, tablets and other devices there is no excuse to not adopt this technology.

ISP preparation

ISP are prepared by the planning section of the ICC using the information available at the time, The information is collated, printed and distributed to the crews prior to the change of shift. The ISP can be a large document, 20 pages or more including:

- Situation
- Mission
- Detailed maps of the fire ground showing tracks, control lines, water points, hazards. Fire front, hotspots. Note that this information is extremely time dependent. Crowning and spotting fires can easily travel 20 kilometres in an hour. The information contained in an ISP map is frequently 24 hours or more out of date.
- Spot weather forecasts, including possibility/location of the hugely dangerous Pyrocumulonimbus clouds (http://media.bom.gov.au/social/blog/1618/when-bushfires-make-their-own-weather/)

A better way

For many years Forest Fire Management Victoria (FFMV) has used a digital mapping App known as Avenza https://www.avenzamaps.com/maps/how-it-works.html. The App is also used by a few CFA Brigades.

In early January 2020 strike teams en route to the Batemans bay fire were given the opportunity to download the Incident Shift Plan and associated tactical maps. This proved to be invaluable for the crews who were operating well outside their normal areas. Once downloaded an internet connection was no longer required.

The downloaded maps in the Avenza App showed a high level of detail as well as the position of the vehicle. The maps could be upgraded mid shift and information from the field (such as water points, dangerous road conditions etc) could be sent back to the ICC mapping unit to be incorporated into the next map release.

With virtually no training the majority of crews had little difficulty in using Avenza software. Note that the software is free with some limits on the number of maps that can be downloaded. FFMV have a corporate license that gives unlimited access.

The perceived advantages by the crews were:

- High quality maps available for the unfamiliar area.
- Location of the vehicle shown on the maps.
- ISP available for perusal before committing to the fire ground.
- Information was up to date, and could be updated during the shift.
- Fire ground spatial intelligence could be rapidly updated and distributed back to the ICC and to other crews

From the ICC point of view the advantages were:

- Crews received the incident plan and maps in timely manner while en route.
- Huge reduction in printing requirement.
- Briefing could be done via Youtube or other method.

Hardware requirements

The system will work with any smart phone however a small tablet is ideal. Tablets are best used in a flexible mount. Ideally the tablet should have a SIM card however an internet share from a private phone will work. Cost for a tablet plus mount ranges from under $1000 (Android) to $1500 (Apple iPad). In addition a PAYG SIM card will cost around $30 month.

The Author

David Gamble has served for over 20 years in the CFA

- 2006-2010. Captain Acheron RFB during the 2009 Black Saturday fires
- 2009 Developed and installed a mobile computer system in the Alexandra Group Forward Control Vehicle (FCV). This system worked well but required a level of computer familiarity that was not wide spread in the Group at the time.
- 2012-2018 Deputy Group Officer, Alexandra Group
- 2020 Staging Area Manager – Corryong
- National Emergency Medal, Life Member CFA