Enhancing emergency management decision making

NHRA Project T2 A4

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Outline of today's webinar…

→ Background to the project

→ Overview of the key phases of work

→ Outline the three literature review streams

→ Some preliminary findings from our survey and interviews

→ Implications for developing tools and training materials

→ End-user perspective (SL)

→ Q&A

Brief background to this project

The project has three main components:

1. Review of existing knowledge, tools and training options targeted to key decision making skills.

2. Identification and assessment of options for new and/or enhanced training and learning products.

3. Development, testing and implementation of selected new or enhanced evidence-based training and learning products.

The team

- Chris Bearman
- Peter Hayes
- Jim McLennan
- Greg Penney
- Phil Butler
- Melinda Kuhn
- Rhona Flin
- Sandra Lunardi
- Ian Tanner
- Tyron Clarke

Partner research organisations

- ❖ NSW SES
- ❖ SES SA
- ❖ DEECA (VIC)
- ❖ CFA
- ❖ NSW NPWES
- ❖ FRV
- ❖ Air Services
- ❖ NFCC (UK)
- ❖ NPCC (UK)
- ❖ AACE (UK)

Outline of the project's activities

→ **Phase 1: Review of existing knowledge, tools, and training options**

- 1a: Literature review (academic and grey literature, EM & HRO)
  - Challenges for emergency management (EM) decision making
  - Cognitive aids for EM decision making
  - Training to improve EM decision making
- 1b: Survey and interviews (Australia & UK)

→ **Phase 2: Identification and assessment of intervention options**

→ **Phase 3: Development and evaluation of training and learning products**

→ **Phase 4: Reporting**

Literature review: Challenges

Challenges for EM decision making

→ Adverse impact of stress and fatigue on decision making

→ Interoperability

→ Ethical challenges for decision makers

Literature review: Cognitive Aids

Cognitive aids for EM decision making

- Issue of correct cognitive aid selection for the situation

- Poorly designed cognitive aids may cause more harm than good

- Need for training in how to select and use cognitive aids

- Differing needs of personnel – tools are applied differently between novices and experts
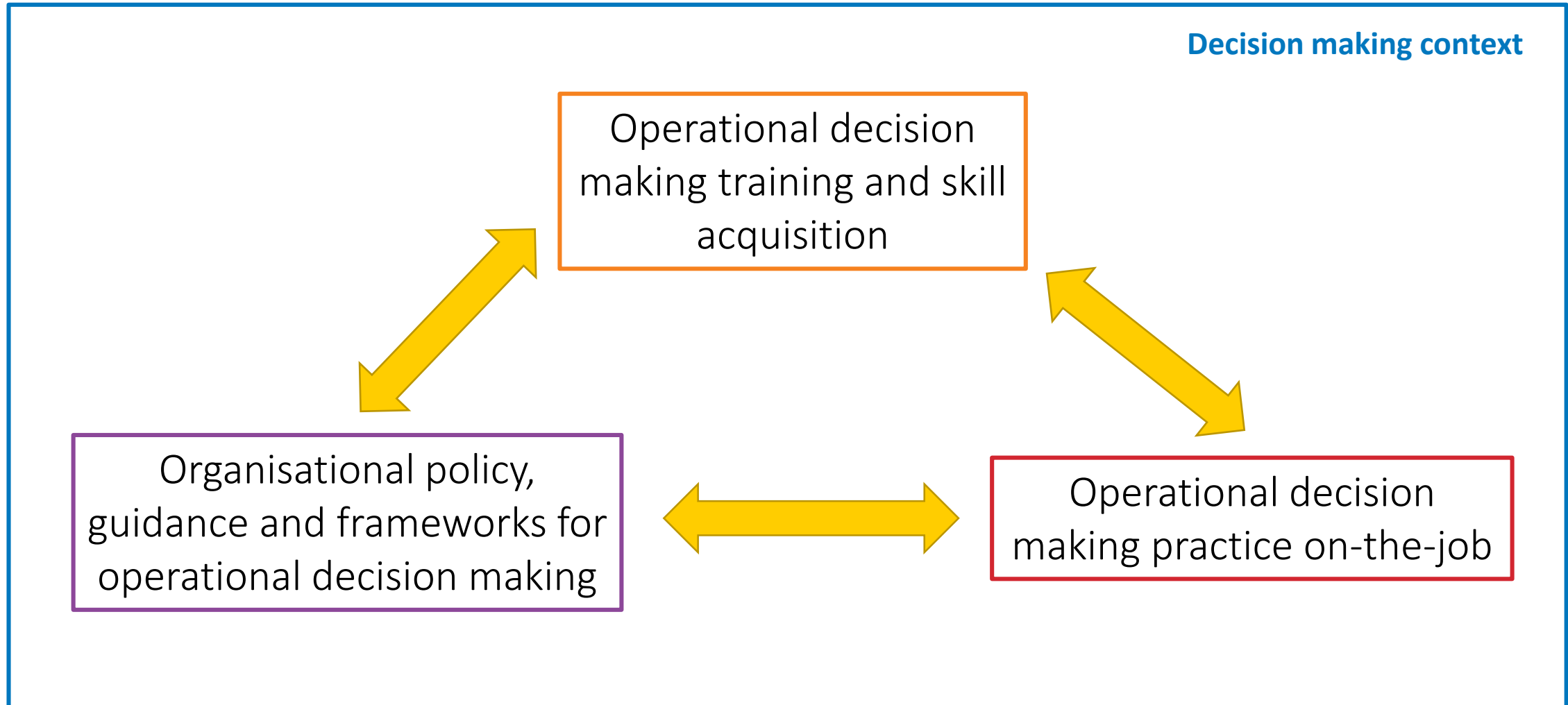
Literature review: Training

Training to improve EM decision making

- Is there an organisation-wide program of EM decision making training, development and maintenance covering all the four levels of EM decision making?

- Is the organisation's EM decision making program adequately resourced in terms of both training staff expertise and material resources?

- Does the EM decision making training program match the organisation's operational EM decision making responsibilities?

Start point for the project's survey & interviews...

Decision making context

Operational decision making training and skill acquisition

Organisational policy, guidance and frameworks for operational decision making

Operational decision making practice on-the-job

Preliminary survey and interview

Australia survey *n* = 154

83% M, 15.5% F, and 0.5% NB

Australia interviews *n* = 36

86% M, 14% F

|	QLD	NSW	VIC	TAS	SA	WA	NT	ACT
Survey	14	60	28	8	12	25	3	4
Interviews	1	18	4	2	3	6	1	0

	Metro	Regional	Country	Other
Survey	74	46	30	4
Interviews	18	17	5	0

Hazard environments managed	
Structure fires	Swift water rescue
Bushfire/wildfire	Storm
Road crash rescue	Cyclone/hurricane
Heavy rescue	Earthquake/landslide/building collapse
Hazmat	Tsunami
Flood	

What training in decision making do people receive and how good do they think it is?

→ Just over half (54.55%) of survey participants said Yes they had attended formal DM training, 20% (19.48%) said Maybe, and a quarter (25.97%) said No.

→ Nearly half of the survey participants (48.05%) felt that the approach to operational decision-making taught during any training was sometimes ineffective, with a further 11.69% saying that training was ineffective most of the time.

→ Nearly a third (29.22%) of survey participants said that decision making training rarely or never changed their on the job practice.
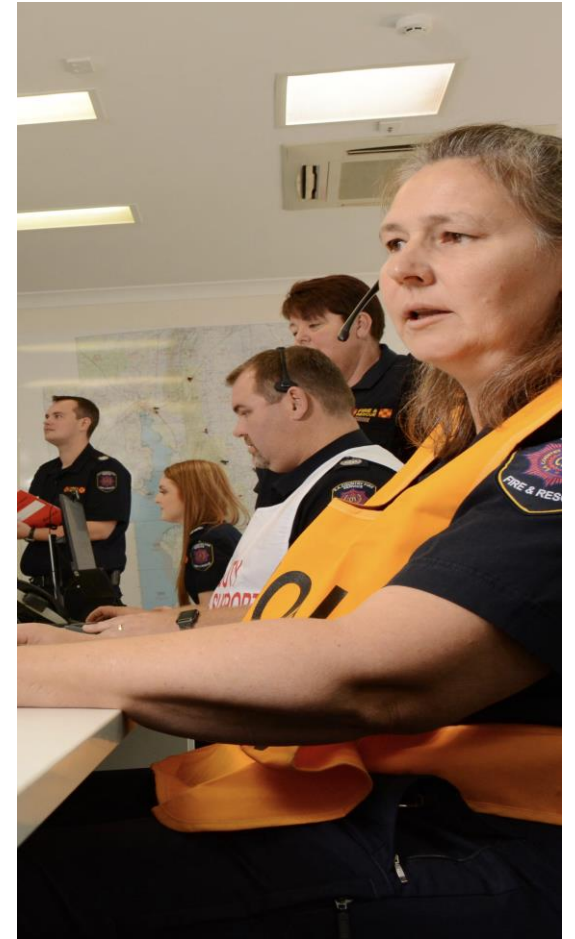
How do EM organisations shape practitioner decision making?

→ 83.12% of survey participants Mostly/Always followed the procedures and rules of their organisation in their operational decision making.

→ 50% of survey participants stated that the best decision based on their previous experience Sometimes contradicted their organisation's formal policies or procedures

→ 40.26% of survey participants stated that the best decision based on their training Sometimes contradicted their organisation's formal policies or procedures.

→ Nearly a quarter of survey participants (24%) thought that the organisation didn't provide clear instructions on how to make operational decisions.

How do EM practitioners make decisions?

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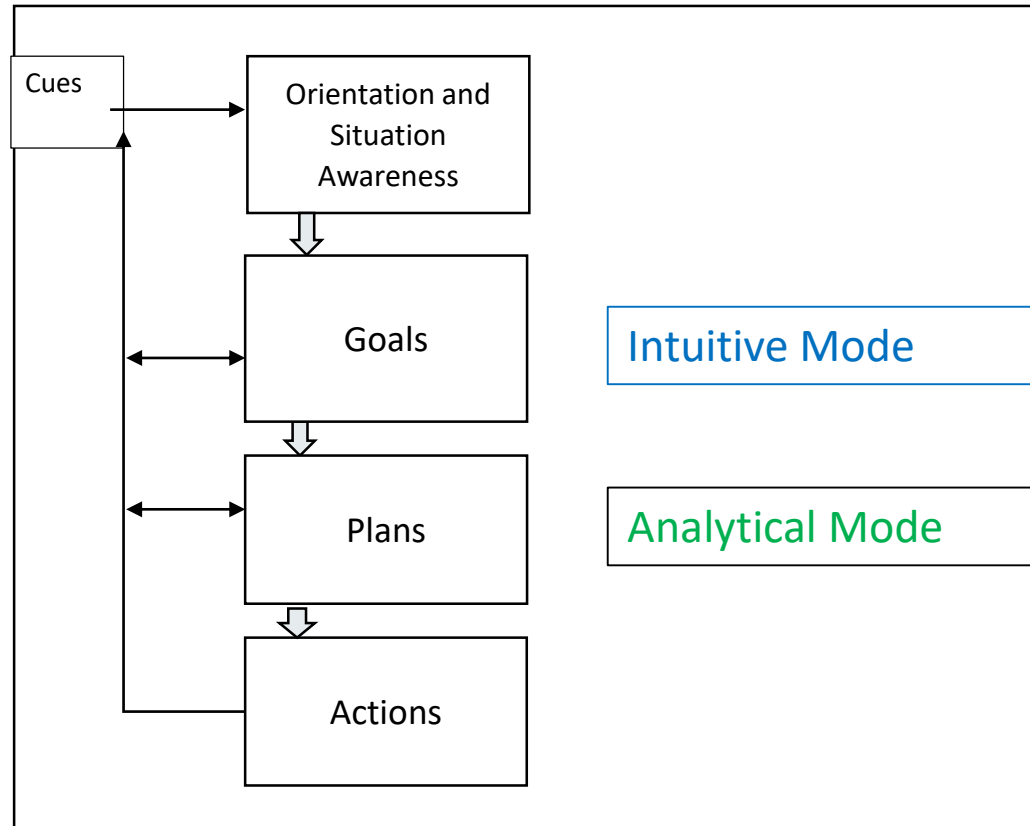
3. How do EM practitioners make decisions?

→Nearly 70% (69.48%) of survey participants said they mostly or always knew the right decision to make when they arrive at an incident, indicating that they are using an intuitive or recognitional decision strategy.

→Interviews participants reported that structured decision making was more likely to occur where there was more time or where the decision was critical.

→While some participants clearly have some level of insight into their decision making processes most reported that they do not understand the strengths/limitations of the different types of decision making.

Some preliminary survey and interview findings

1. There is a clear opportunity to enhance EM decision making training.

2. The large majority of participants follow their organisations' rules and procedures, however there can sometimes be a mismatch between what the rules and procedures say and the best decision based on participants' knowledge, experience and training.

3. EM decision makers generally use a combination of recognitional and analytical processes to make decisions.

Implications for training

Area of improvement	Resource or tool
Decision making practice	• Guidance on the strengths and pitfalls of different decision making approaches • Evaluation of cognitive aids • Guidance on how to select and use cognitive aids to support decision making
Organisational policies, procedures and guidance	• Guidance on operational discretion
More general training and skill development	• Develop the skill acquisition framework concept

Connected and capable emergency management in Australia and New Zealand

Sandra Lunardi OAM

Director, Industry Workforce Development

AFAC Membership

Our core Members support Australian and New Zealand communities through mitigation and response phases of emergency management and the transition to recovery.

34 AFAC Members are Enterprise RTOs along with many AFAC Affiliate Members using PUA Public Safety Training Package.

35 Members

- Urban fire services
- Rural fire services
- State emergency services
- Land management agencies
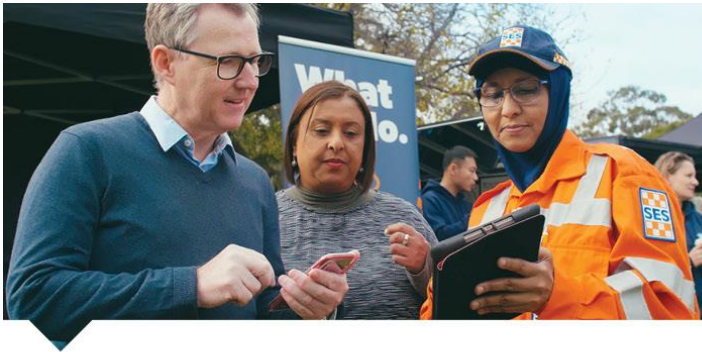- Emergency Management Australia
- Airport Fire Services

22 Affiliate Members

→ Non-profit

→ Councils/local government

→ International fire services

→ Maritime

→ Surf Life Saving

→ Australian Red Cross

17,751 Associates

- For staff and volunteers of AFAC members, affiliates and partners.

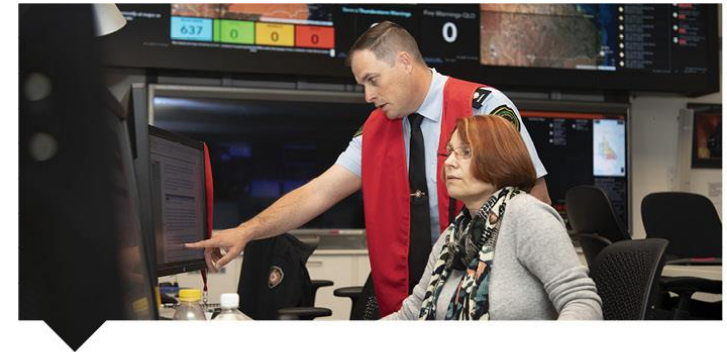# AFAC Council's Strategic Directions Informed by Research

Direction 1
Supporting resilient communities through risk reduction

Direction 2
Providing a trusted response

Direction 3
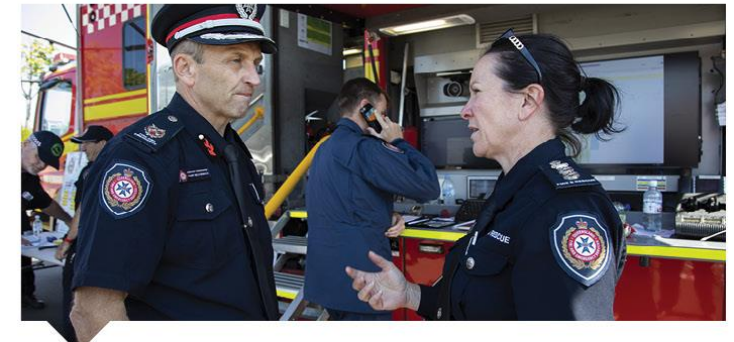Using credible and timely information and data

Direction 4
Safe, capable and diverse workforce

Direction 5
Informed by knowledge, innovation and research

Direction 6
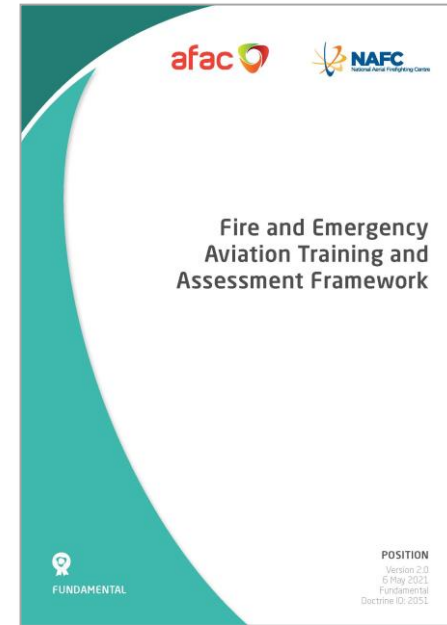Effective and transparent governance

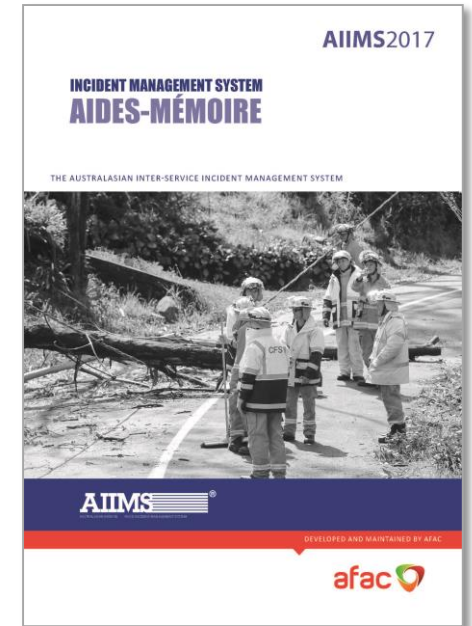afac

Our Doctrine

2

Capstone

23

Fundamental

58

Procedural

39

Technical

Research Utilisation - Professional Development

Decision Making Under Pressure

Facilitating Debriefs

How to Conduct a Staff Ride

Managing in Adversity

Simulation Training

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Opportunities for Embedding the Research - Doctrine

→ Develop fundamental doctrine on decision-making that is principle and evidence-based to inform future industry practice. The creation of national doctrine allows for consistent approaches to be implemented at the agency level.

→ The doctrine should include guidance on the approaches to decision-making and when they are most appropriate, (e.g., novice versus experienced practitioner; routine versus novel situations).

→ Organisational decision-making may be further enhanced by cognitive aids, e.g. procedures, checklists and other tools that are consistent with the fundamental doctrine.

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Opportunities for Embedding the Research - Training

→ Explore ways in which decision-making doctrine can be embedded into emergency management training and scaffolded across each AQF level.

→ Increase professional development of the instructor/facilitator cohort so they can embed decision making into training.

→ Increase professional development of coaches and mentors to support development of operational decision-making.

→ Provide exemplars of the use of simulation and other technologies to focus on decision-making.

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Opportunities for Embedding the Research – Developing Practitioners' Decision-making Capabilities

→ Conduct after-action reviews of operational decision-making (in real and simulated environments) to examine approaches adopted and effectiveness of decisions made.

→ Encourage (where appropriate) opportunities for people to verbalise their decision-making approach (prior to decision/action) and invite feedback.

→ Incorporate lessons identified into doctrine, training and broader organisational systems, as part of a process of continuous improvement.

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Thank you
Q&A

Further questions
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