NATURAL HAZARDS

RESEARCH FORUM

STREAM 2 WORKSHOP 1

Enhanced decision making and emergency management

A/Prof Chris Bearman
Dr Peter Hayes

CQUniversity





#NHRF23









Decision Making in Emergency Management

A/Prof Chris Bearman & Dr Peter Hayes

Central Queensland University
Natural Hazards Research Australia

A/Prof Greg Penney (CSU)
Prof Jim McLennan (LTU)
Prof Rhona Flin (RGU)
Dr Phil Butler (CU)



Overview

- Decision making and non-technical skills
- Analytical and naturalistic decision making
- EMNoTS behavioural markers
- Analysis of decision making in action



"Effective decision making requires sound and timely decisions based on an adequate understanding of the situation; a suitable decision making approach and the appropriate involvement of others in the decision process."

(Hayes et al., 2021)



Decision making involves selecting one option from several possibilities (Eysenck & Keane, 2020)

A decision is a point (or incision) contained within a stream of events that seeks to affect the later flow of events in a particular way

(Chia, 1994)



Structured/Analytical Decision Making

- 1. Canvas a wide range of options
- 2. Survey full range of objectives
- 3. Weigh the costs, risk, benefits
- 4. Search for information to evaluate options
- 5. Assimilate all information
- 6. Examine the consequences (positive & negative)
- 7. Carefully plan to include contingencies

(Janis & Mann, 1977)



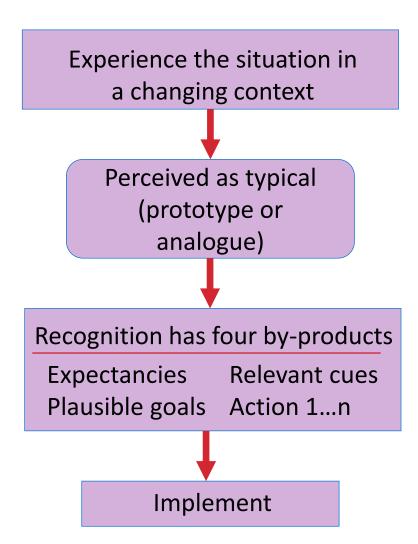


Intuitive Decision Making (RPD)

Situation Awareness

Decision Making

Communication





I Emergency Management **Non-Technical Skills**

PURPOSE

This tool helps emergency and incident management teams enhance non-technical skills (such as communication or leadership skills) to develop more effective teamwork capabilities.

There are seven core non-technical skill categories. divided into elements and behavioural markers.

To help ensure that both positive (helpful) and negative (unhelpful) behaviours are considered, there are negative behavioural markers included in the checklist - these are marked in italics.

The EMNoTS can be used in several ways:

- · as a simple checklist, by completing the unshaded columns to quickly capture which non-technical skills are in play for a team
- · to facilitate an after-action review at the end of a shift or training exercise
- · to collect more detailed data to ascertain how well non-technical skills are being used, by completing the shaded columns.

COMMUNICATION	NOT APPLICABLE NOT OBSERVED SOMETIMES NOSTLY CONSISTENTLY	COORDINATION	NOT APPLICABLE NOT OBSERVED OBSERVED	SOMETIMES	ONSISTENTLY	Individuals are creating unnecessary conflict LEADERSHIP
Effective communication	Z Z O S Z 8	COORDINATION Clear roles, responsibilities and expectations	2 2 8		¥ 8	Creates a suitable team environment
nformation is passed on	000	Actions are always carried out as expected	000			Good behaviour is consistently modelled Inclusive behaviours are modelled
nformation is passed on accurately		There is a clear and common purpose				that enables others to speak
eam members ensure that nformation has been received	000	Everyone has a common understanding relating	000			up and offer suggestions and constructive comment
nd understood by others		to the operation				Others are not treated with respec
nappropriate communication procedures are used		The roles and responsibilities of team members are unclear	000			Provides focus, direction and coo
Proactive communication		Adjusting to demands				There is a focus on the important tasks at hand
ituation updates are provided		Everyone is adjusting to meet				Appropriate direction and
eam members are not		the demands of the situation				guidance are provided
roviding constructive omments to one another		Team members are not correcting any mistakes made by others	000			Activities are not well-coordinated within the team

OOPERATION	NOT APPLICABLE	NOT OBSERVED	OBSERVED	SOMETIMES	MOSTLY	CONSISTENTLY
ontributes to a positive				OB	SERV	ED
veryone shows willingness o work as a team						
eam members are open nd approachable						
eam members do not exhibit onfidence and trust in each other						
lignment of efforts and managemer	nt of	con	flic	t		
veryone is following team objectives vithout opting for independence						
ifferences of opinion are esolved effectively						
ndividuals are creating nnecessary conflict						
FADERGUID						

LEADERSHIP

Creates a suitable					
team environment		OBSERVED			
Good behaviour is consistently modelled	000				
Inclusive behaviours are modelled that enables others to speak up and offer suggestions and constructive comment	000				
Others are not treated with respect					
Provides focus, direction and coordination					
There is a focus on the important tasks at hand	000				
Appropriate direction and guidance are provided	000				



Decision Making Behavioural Markers

NTS category	Element	Behaviour
Decision making	Sound, timely decisions Appropriate decision making approach	 Decisions are being appropriately prioritised Decisions are not being made on a timely basis* Appropriate decision making approaches are applied to the situation at hand (e.g., speed vs. thoroughness) Plans are not readily adjusted as the situation changes*
	Engaging others in decision making	 Others' ideas and inputs are incorporated into decisions when practicable There is flexible matching of communication style to the audience Decisions (and intent) are not clearly communicated*



Situation Awareness Behavioural Markers

NTS category	Element	Behavior
Situation Awareness	Gathering and analysing information	 Patters and trends are identified in a timely manner Team members ask others about the situation to improve their situational awareness The consequences of the options available are not identified*
	Identifies contingencies, problems and expectations	 Contingencies are discussed and future potential problems identified Expectations are not articulated (i.e., goals and potential event evolution)*
	Sharing information and insights	 Views are shared of the current situation with others Team members do not effectively participate in team briefing to build and share situational awareness*



Communication Behavioural Markers

NTS category	Element	Behavioural marker
Communication	Effective communication	 Information is passed on in a timely manner Information is passed on accurately Team members ensure that information has been received and understood by others Inappropriate communication procedures are used*
	Pro-active communication	 Situation updates are provided Team members are not providing constructive comments to one another*



Assessing a Team's Decision Making



"Ghostbusters ECTO-1" by relux. is licensed with CC BY-SA 2.0.

Activity: Use EMNoTS to evaluate the performance of the decision making in the video



Use of EMNoTS

- Real-Time Performance Evaluation
- After Action Reviews & Debriefs
- To Build Better Teams



Questions...

