

# Proceedings of the EMII Members Briefing: Navigating Decision-Making in VUCA Environments – Sept. 2024

Briefing Organised by the EMII Board of Directors.

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EMII

# NAVIGATING DECISION-MAKING IN VUCA ENVIRONMENTS



**DONAL O'DRISCOLL**

# RATIONAL DECISION-MAKING PROCESS

1. Outline the goal or outcome/analyse the problem
2. Gather data/consider factors
3. Develop/prioritise alternative courses of action
4. Consider the pros and cons of each alternative
5. Make the decision
6. Act - implement the decision
7. Learn from the action/decision

# NATURALISTIC DECISION-MAKING PROCESS

1. Recognition of the decision requirement
2. Sensemaking/situational awareness
3. Option generation
4. Option evaluation:
5. Decision-making and action
6. Outcome monitoring and adjustment

# DUAL PROCESS THEORY OF REASONING

## SYSTEM 1

### AUTOMATIC 'FAST' PROCESSING

Non-conscious control/Fast/Effortless/Emotional/Non-verbal/**Inconsistent**

## SYSTEM 2

### CONTROLLED 'SLOW' PROCESSING

Conscious control/Slow/Effortful/Verbal/Unemotional/**Consistent**

# RATIONAL **V** NATURALISTIC DECISION-MAKING PROCESSES

## RATIONAL DM PROCESS ( S2)

- Deliberative, logical process
- Theoretical approach
- Utilising all available information
- Ample time-frame
- More stable environments
- Rigid - consistent

## NATURALISTIC DM PROCESS (S1)

- Intuitive/**heuristic** process
- Empirical approach – reality **V** theory based
- Utilising currently available information
- Using limited time available
- Dynamic VUCA environments
- Flexible - unique

# DECISION-MAKING CHALLENGES

- High consequence & accountability
- Imperative – not deciding is not an option
- High complexity
- Time constraint/pressure
- Incomplete/inaccurate info & intel
- Adversarial decision-making
- **Dynamic, dangerous, VUCA environments**
- Physiological factors
- Psychological factors
- Inherent cognitive biases DM Traps

# VUCA ENVIRONMENTS

## **VOLATILITY**

Speed & magnitude of change in an environment

## **UNCERTAINTY**

Lack of predictability in an environment

## **COMPLEXITY**

Interconnectedness & interdependencies of various elements

## **AMBIGUITY**

Confusion & lack of clarity leading to misunderstanding

# COUNTERING VUCA

## VOLATILITY

- Act quickly and decisively to stabilise the situation
- Rapid establishment of effective, shortened command/communication structures and processes
- Continuous real-time monitoring to track the volatile developments and adapt strategies accordingly

## UNCERTAINTY

- Relentless gathering of info/intel from all credible sources to reduce unknowns.
- Development of effective/flexible plans and contingencies
- Regular briefings - up, across & down – a common, real time operating picture

# VUCA ENVIRONMENTS

## COMPLEXITY

- Identify/understand the interdependencies
- Employ expert crisis managers/advisors
- Adopt a comprehensive approach

## AMBIGUITY

- Dynamic and continuous situational analyses – provide a common operating picture
- Clear/direct comm's to avoid misunderstandings
- Regular briefing/debriefing and updates to clarify

# CYNEFIN 'SENSEMAKING' FRAMEWORK: DOMAINS

**DISORDER**

**ORDERED**

Simple (Obvious) Domain

Complicated Domain

**UNORDERED**

Complex Domain

Chaotic Domain

# DISORDER

<b>ORDERED SIMPLE</b>	<b>ORDERED COMPLICATED</b>	<b>UNORDERED COMPLEX</b>	<b>UNORDERED CHAOTIC</b>
<p>KNOWN KNOWNS</p>	<p>KNOWN UNKNOWNNS</p>	<p>UNKNOWN UNKNOWNNS</p>	<p>UNKNOWABLE UNKNOWNNS</p>
<p>NO EXPERTISE REQUIRED – FOLLOW INSTRUCTIONS</p> <p><math>C = E</math></p>	<p>EXPERTISE IN MANY FIELDS REQUIRED</p> <p><math>C \sim E</math></p>	<p>EXPERTISE MAY BE INSUFFICIENT</p> <p><math>C \neq E</math> (Hindsight)</p>	<p>EXPERTISE MAY BE INSUFFICIENT</p> <p><math>C \neq E</math></p>
<p>BEST PRACTICE (SOPs) FIXED CONSTRAINTS</p>	<p>GOOD PRACTICE GOVERNING CONSTRAINTS</p>	<p>EMERGENT PRACTICE ENABLING CONSTRAINTS</p>	<p>NOVEL/ADAPTIVE ACTION NO CONSTRAINTS</p>
<p><b>PREDICTABLE</b> OUTCOME</p>	<p><b>PREDICATBLE</b> OUTCOME</p>	<p>RELATIVELY <b>UNPREDICATBLE</b> OUTCOME</p>	<p>WHOLLY <b>UNPREDICTABLE</b> OUTCOME</p>
<p><b>CORRECT ANSWER</b></p>	<p><b>MANY CORRECT ANSWERS</b></p>	<p><b>EMERGING ANSWERS</b></p>	<p><b>NO YET KNOWABLE ANSWERS</b></p>

# SOME COMMON BIASES 1

- ❖ **Confirmation Bias:** over- focusing & relying upon information that confirms one's own existing beliefs and opinions whilst ignoring alternatives facts and contradictory evidence
- ❖ **Anchoring Bias:** focussing or over-relying or 'anchoring' ones' beliefs on the first piece of information (the 'anchor') encountered or proffered to you when making decisions
- ❖ **Overconfidence Bias:** overestimation of one's own abilities, skills, and ability to forecast events leading to inappropriate risk-taking
- ❖ **Loss Aversion Bias:** exaggerated fear of loss leading to an over-avoidance of risk-taking at the cost of gaining any potential benefits.

# COMMON BIASES 2

- ❖ **Dunning-Kruger Effect:** overestimation by persons of low or limited competence of their true capabilities or skills due to their underestimating the degree of difficulty of a task or skill. Conversely some individuals with high ability can underrate their true competence and underestimate their knowledge and skills
- ❖ **Hindsight Bias:** incorrectly believing that, in hindsight and after the fact, one had accurately predicted the future. This can lead to a misplaced overconfidence in ones' ability to predict future outcomes
- ❖ **Status Quo Bias:** preference for maintaining the current state of affairs despite the fact that it may be less than optimal can lead to inappropriate resistance to change
- ❖ **Framing Effect:** the same or similar information 'framed' or presented differently, can support different and contradictory choices or decisions.

# COMMON BIASES 3

- ❖ **Groupthink or Bandwagon Effect:** thinking or doing the same thing as others out of a fear of making independent decisions or taking independent action.
- ❖ **Sunk Cost Fallacy:** continuing in an endeavour even when it may be wrong, unprofitable or unbeneficial, solely because of the effort, time and resources already invested.
- ❖ **Recency Bias:** The tendency to focus more on more familiar recent, rather than more distant past events and experiences

# COMMON BIASES 4

- ❖ **Self-Serving Bias:** taking personal credit for successes whilst blaming other people and external factors for one's failures.
- ❖ **Cognitive Dissonance:** holding two or more conflicting or contrary opinions at the same time. This can lead to can lead to rationalising decisions to align with existing beliefs in an effort to reduce that dissonance.
- ❖ **Expectation bias:** hearing or seeing what you expect to hear or see contrary to the reality, where expectation of an outcome overrides reality and existing information.

# DECISION MAKING BIASES

## COMPLACENCY

CONTENTMENT WHILST UNAWARE OF/MINIMISING

PENDING DANGER

*'PROBABLY NEVER HAPPEN HERE/TO ME'*

## NORMALCY BIAS

UNDERESTIMATION OF LIKELIHOOD/EFFECT –

COGNITIVE DISSONANCE *'THINGS CAN'T BE THAT BAD'*

## CONFIRMATION BIAS

SELECTION OF EVIDENCE THAT CONFIRMS

EXISTING BELIEFS

*'JUST AS I THOUGHT- PROBABLY BE FINE'*





# DECISION MAKING BIASES

## PERFECTIONISM

PROCRASTINATING/STRIVING FOR FLAWESSNESS TO ATTAIN UNREALISTIC GOALS

*'THE ENEMY OF A GOOD PLAN IS THE DREAM OF A PERFECT PLAN'.*

*'IT IS BETTER TO ACT QUICKLY AND ERR THAN HESITATE UNTIL THE TIME OF ACTION IS PAST'.*

(Von CLAUSEWITZ)

# DECISION MAKING BIASES

## STATUS QUO

A PREFERENCE FOR THE CURRENT STATE OF AFFAIRS

*'IN ANY MOMENT OF DECISION, THE BEST YOU CAN DO IS  
THE RIGHT THING, THE NEXT BEST THING IS THE WRONG  
THING, AND THE WORST THING YOU CAN DO IS NOTHING'*

(THEODORE ROOSEVELT)

# DECISION MAKING BIASES

## AUTHORITY/EGO

WON'T LISTEN TO 'SUBORDINATES'/BIG EGO

CONSULT/LISTEN/CRM

## CONFORMITY

WON'T SPEAK TRUTH TO POWER

*SPEAK UP/IF YOU SEE IT, SAY IT*

## HABIT

WE ALWAYS DO IT THIS WAY

*'THE MOST DANGEROUS WORDS IN THE ENGLISH LANGUAGE' HOPPER*

# DECISION MAKING BIASES

## **SUNK COSTS**

'STAYING THE COURSE' DUE TO TIME/EFFORT RESOURCES INVESTED  
REGARDLESS OF CHANCES OF SUCCESS

## **GROUP THINK**

FOLLOWING THE HERD

## **ANCHORING**

FOCUS/INVEST ON FIRST PIECE OF INFO RECEIVED/ADVICE GIVEN

# DECISION MAKING BIASES



## EGO

### CREW RESOURCE MANAGEMENT (CRM)

“Issue an operations bulletin to all air carrier operations inspectors directing them to urge their assigned operators to ensure that their flight-crews are indoctrinated in principles of flight-deck resource management, with particular emphasis on the merits of participative management for captains and assertiveness training for other cockpit crew members.”

(Class II, Priority Action: X-79-17)

# DECISION CHALLENGES

## THE 40-70 RULE – GEN. COLIN POWELL

◀ 40% BOUND TO BE WRONG - MORE INFO/INTEL NEEDED –

Impulsive or snap decision-making

› 70% STRIVING FOR CERTAINTY - TOO LATE

Procrastination/paralysis by analysis

# HEURISTICS 1 (SAMPLES)

- **Gaze Heuristic:** rapidly judging the distance, speed and angle of travel of moving objects and adjusting one's gaze or position to maintain, close or increase the distance, speed and angle between oneself and that object.
- **Affect Heuristic:** based decisions on intuition, 'gut-feelings' or cursory impressions
- **Commonsense Heuristic:** based decisions upon subjective, experienced-based observations
- **Familiarity Heuristic:** using familiar, regularly encountered solutions to solve regularly encountered problems
- **Representativeness Heuristic:** associating probability with cases or stereotypes that are known to us, whilst ignoring actual statistical probabilities

# HEURISTICS 2

- **Recognition Heuristic:** favouring familiar solutions over unfamiliar but possibly superior options
- **Fluency Heuristic:** trusting that simple solutions are superior/more effective than complicated solution
- **Satisficing Heuristic:** accepting an easily available 'satisfactory' solution rather than searching for the optimum solution.
- **Similarity Heuristic:** mistaken belief that similar decisions will lead to similar outcomes in different albeit similar circumstances
- **Default Heuristic:** inappropriately choosing a default/preselected option because it requires less effort

# HEURISTICS 3

- **Scarcity/Availability Heuristic:** attaching greater value to an option because it is scarce or limited in availability – conversely, attaching lower value based on ready availability
- **Social Proof Heuristic:** assuming that an option is correct, safe, or preferable because others around us have chosen it
- **Take-the-Best Heuristic:** selecting options that appear to have the best attributes without considering other less obvious but important attributes
- **Effort heuristic:** basing the value placed upon an option/task on the amount of time and effort it requires.

## CESSNA 172

### ENGINE FAILURE DURING FLIGHT



### **NB:** AVIATE, NAVIGATE, COMMUNICATE

1. Airspeed - 65 KIAS
2. Carburettor Heat - ON
3. Fuel Selector Valve - BOTH
4. Mixture - RICH
5. Throttle - FULL
6. Ignition Switch - BOTH (or START if propeller is stopped)
7. Primer - IN and LOCKED

# COUNTERING VUCA CHALLENGES - CHECKLISTS

## Surgical Safety Checklist



World Health  
Organization

Patient Safety  
A World Alliance for Safer Health Care

### Before induction of anaesthesia

(with at least nurse and anaesthetist)

Has the patient confirmed his/her identity, site, procedure, and consent?

Yes

Is the site marked?

Yes

Not applicable

Is the anaesthesia machine and medication check complete?

Yes

Is the pulse oximeter on the patient and functioning?

Yes

Does the patient have a:

Known allergy?

No

Yes

Difficult airway or aspiration risk?

No

Yes, and equipment/assistance available

Risk of >500ml blood loss (7ml/kg in children)?

No

Yes, and two IVs/central access and fluids planned

### Before skin incision

(with nurse, anaesthetist and surgeon)

Confirm all team members have introduced themselves by name and role.

Confirm the patient's name, procedure, and where the incision will be made.

Has antibiotic prophylaxis been given within the last 60 minutes?

Yes

Not applicable

#### Anticipated Critical Events

To Surgeon:

What are the critical or non-routine steps?

How long will the case take?

What is the anticipated blood loss?

To Anaesthetist:

Are there any patient-specific concerns?

To Nursing Team:

Has sterility (including indicator results) been confirmed?

Are there equipment issues or any concerns?

Is essential imaging displayed?

Yes

Not applicable

### Before patient leaves operating room

(with nurse, anaesthetist and surgeon)

#### Nurse Verbally Confirms:

The name of the procedure

Completion of instrument, sponge and needle counts

Specimen labelling (read specimen labels aloud, including patient name)

Whether there are any equipment problems to be addressed

#### To Surgeon, Anaesthetist and Nurse:

What are the key concerns for recovery and management of this patient?

# 7 QUESTION COMBAT ESTIMATE

## 7 Questions

1. What is the situation and how does it affect me?

2. What have I been told to do and why?

3. What effects do I need to achieve and what direction must I give in order to develop my plan?

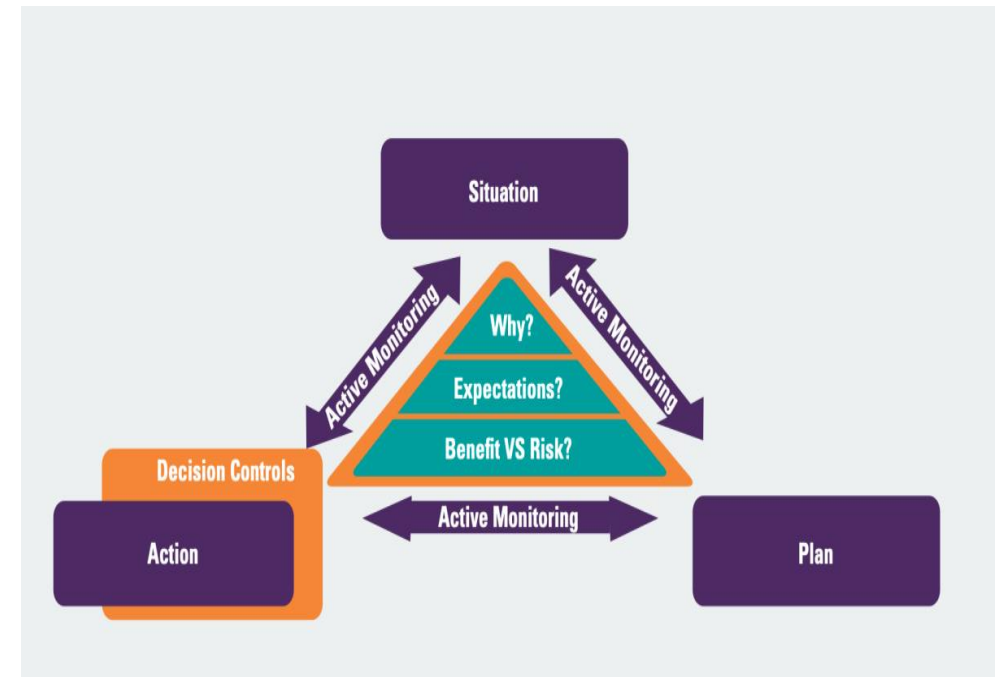
4. Where can I best accomplish each action/effect?

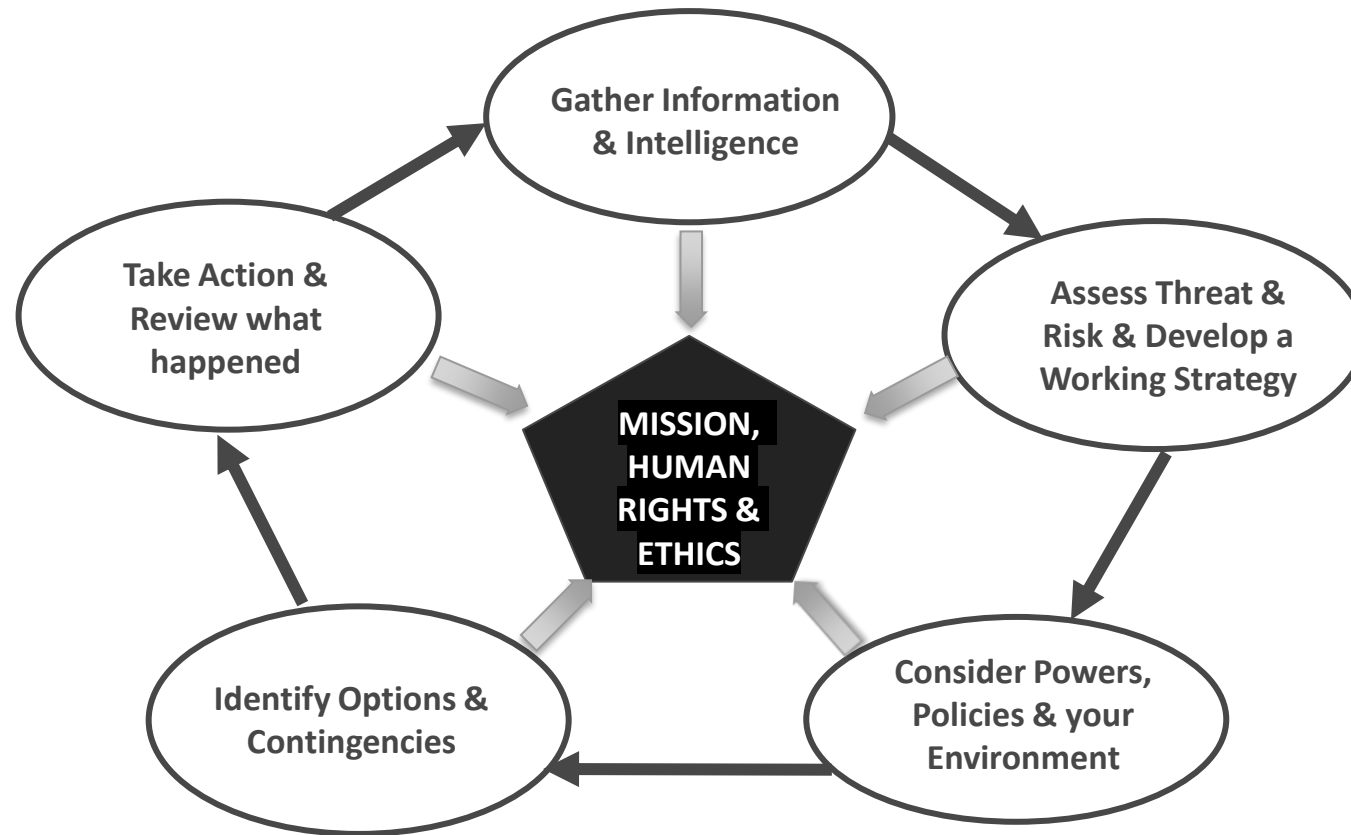
5. What resources do I need to accomplish each action/effect?

6. When and where do the actions take place in relation to each other?

7. What control measures do I need to impose?

# DM MODEL EXAMPLES: GARDA DM MODEL & THE DECISION CONTROL PROCESS (DFB)





# ADVERSARIAL DM MODEL - BOYD'S 'OODA' LOOP



# DECISION-MAKING CHALLENGES

## **TAKEAWAYS**

# STRESSORS

## SITUATIONAL

- VOLATILITY/UNCERTAINTY
- COMPLEXITY/AMBIGUITY
- INFORMATION
- ENVIRONMENT
- TIME PRESSURE
- HIGH CONSEQUENCE
- STRESS
- FATIGUE

## EMOTIONAL

- COMPLACENCY
- PERSONAL EGO/AMBITION
- PERSONAL REPUTATION
- FEAR OF PUBLIC SCRUTINY
- FEAR OF LEGAL SCRUTINY
- FEAR OF PEER SCRUTINY
- PHYSICAL FEAR

## COGNITIVE

- MENTAL CAPACITY
- COMPETENCE/TRAINING
- CONFIDENCE
- OVERLOAD
- COMPETING PRIORITIES

## ORGANISATIONAL

- REPUTATION
- EGO
- CULTURE
- ACCOUNTABILITY
- EXPECTATIONS

# TAKEAWAYS: PREPAREDNESS

➤ SITUATIONAL AWARENESS

BE SWITCHED ON, ORIENTED & READY – ‘CYNEFIN’

➤ BE PREPARED

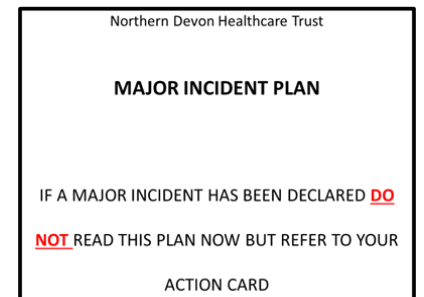
CONSTANT TRAINING & PRACTICE

➤ PLANS

CIRCULATE/TRAIN/PRACTICE

➤ BRIEF AND DEBRIEF THOROUGHLY

ALWAYS - FEEDBACK & FEED FORWARD



# TAKEAWAYS: PROCESSES/TOOLS

➤ PROCESS

APPLY PROCESS WHEN/WHERE POSSIBLE

➤ MODELS

SELECT/IMPLEMENT A MODEL - TRAIN & PRACTICE

➤ CHECKLISTS

UTILISE WHEN/WHERE POSSIBLE

ACKNOWLEDGE & PROTECT AGAINST HUMAN FRAILITY

# TAKEAWAYS - COMMAND

- APPROPRIATE COMMAND STRUCTURES IN PLACE

AT THE EARLIEST OPPORTUNITY

- FORMAL ASSUMPTION/HANDOVER

ONLY WHERE CAPABLE/INFORM ALL/RECORD

- COMMANDER CO-LOCATION

ON-SITE OR REMOTE AS APPROPRIATE?

MULTIAGENCY – COMMON OPERATING PICTURE

- ADEQUATE SUPPORT RESOURCES

DELEGATE/DEVOLVE

- EXPERT ADVICE

SEEK IT/CONSIDER IT/RECORD IT

- IMPERATIVE

YOU MUST DECIDE AND MUST ACT

# TAKEAWAYS: INFORMATION & INTELLIGENCE

➤ NOT ENOUGH

RELENTLESSLY SEEKING MORE & BETTER – REMEMBER 70/40 RULE

➤ TOO MUCH

COGNITIVE OVERLOAD – PRIORITISE & DELEGATE

➤ CREDIBILITY

IDENTIFY SOURCE - ASSESS & GRADE

➤ COMMUNICATE

TIMELY TRANSFER- BRIEFING DOWN/ACROSS IN APPROPRIATE  
ORDER

# TAKEAWAYS: PEOPLE

## ➤ SUITABILITY

SELECT SUITABLE & APPROPRIATELY EXPERIENCED PERSONNEL

## ➤ TRAINING

APPROPRIATELY/CURRENTLY TRAINED & QUALIFIED

## ➤ TEAM ORIENTED

EGO IS AN ENEMY/ENCOURAGE MODESTY & COLLABORATION

## ➤ RESOURCES

PROVIDE ADEQUATE/APPROPRIATE RESOURCES

## ➤ COLLABORATION

CREW RESOURCE MANAGEMENT

# TAKEAWAYS: PHYSICAL ENVIRONMENT

➤ SECURE

SAFE, SECURE, ACCESSIBLE, COMFORTABLE - ERGONOMICS

➤ HYGIENE

MINMISE DISTRACTIONS/PERSONNEL/BREAKOUT ROOM(S)

➤ ADEQUATELY RESOURCED

SUPPORT PERSONNEL & TECHNOLOGY

➤ BACK-UP/REDUNDANCY

ENSURE CONTINUITY COMM'S/POWER/DATA - MALICE

➤ SCALEBALE/FLEXIBLE

CONSIDER OFF-SITE REQUIREMENTS/CONTINGENCIES

➤ EXTERNAL COLLABORATION

ON-SITE & REMOTELY – DEDICATED & TRAINED LIAISON OFFICERS

# TAKEAWAYS: ACCOUNTABILITY

➤ ACCEPT & EMBRACE IT

OWN YOUR DECISIONS

➤ RECORD EVERYTHING YOU CAN

INFO/DECISIONS/SUPPORTING RATIONALE, USED  
& DISCOUNTED DECISIONS/ADVICE

➤ FACT **V** ASSUMPTION

IDENTIFY & DIFFERENTIATE IN RECORDS

# TAKEAWAYS: STRESSORS 1

➤ FATIGUE

BE AWARE – MANAGE/MITIGATE - MANDATORY RELIEF & REST PERIODS

➤ EMOTIONAL STRESS

BE PRESENT/IDENTIFY & ACKNOWLEDGE IT - FOCUS & CONCENTRATE

➤ EXTERNAL PRESSURES

STAKEHOLDERS

➤ PERSONAL PRESSURES

DOMESTIC/FINANCIAL/RELATIONSHIPS/FAMILY

➤ PRESSING

'JUST GET IT DONE & LET'S GO HOME'

➤ EXPECTATIONS

OF MANAGEMENT/THE PUBLIC/MEDIA

➤ MANAGING & COORDINATING

DELEGATING & COGNITIVE OFF-LOADING

# TAKEAWAYS – STRESSORS 2

➤ MANAGING MEDIA

➤ MANAGE POLITICAL PRESSURE

➤ LIMITED RESOURCES

DELEGATE TO EXPERTS

DELEGATE UPWARDS (WHEN POSSIBLE)

REQUEST WHAT IS NEEDED & RECORD REQUEST

# TAKEAWAYS – STRESSOR EFFECTS 1

➤ DISTRACTION/JUMPING/TUNNEL VISION

PRIORITISE & FOCUS

➤ COGNITIVE OVERLOADING

COGNITIVE OFFLOADING/DELEGATION

➤ IMPULSIVE DECISION-MAKING

APPLY PROCESS/MODELS

➤ PROCRASTINATION

APPLY PROCESS/MODELS

➤ INERTIA

RELIEF/REST

➤ MISDIRECTED AGGRESSION

RELIEF/REST

# TAKEAWAYS – STRESSOR EFFECTS 2

➤ WITHDRAWAL

RELIEF/REST

➤ RIGIDITY

RELIEF/REST

➤ ACCEPTANCE OF LOWER STANDARDS

RELIEF/REST

➤ NEGLECTING SMALLER TASKS

RELIEF/REST

# TAKEAWAYS: BIASES & HEURISTICS

BE AWARE OF THEM & HOW THEY CAN INFLUENCE & AFFECT  
THINKING & DECISION-MAKING

# TAKEAWAYS

**Understand and accept that decision making in VUCA environments cannot always lead to guaranteed and desired outcomes – often *'the least worst'* decision may be the best decision you can make**

**ALWAYS DO THE RIGHT THING FOR THE RIGHT REASON**