EAGLE WARRIOR 17

GIVING WINGS TO RAF FORCE DEVELOPMENT AND WARGAMING

ISMOR 35 presentation
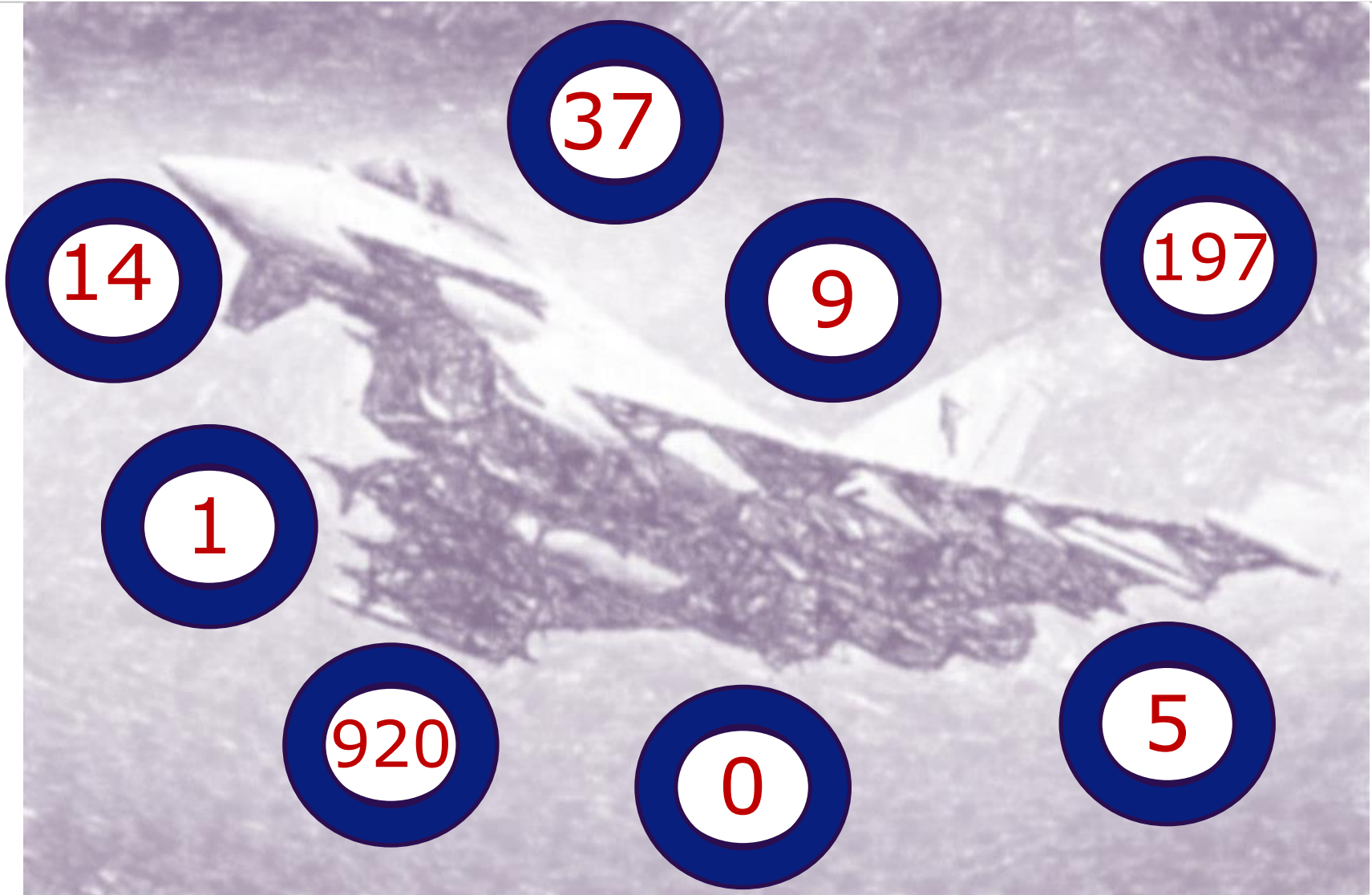July 2018

Noel Corrigan   CORDA
Sam Mason   Air Warfare Centre (AWC)

Some stats

37

14

9

197

1

920

0

5

Purpose, Scope

- 'Discovery Experiment'
- Context – the Event as part of a cycle
- Test performance in context of "Challenges"
- 2020 & 2030
- Baseline funded force
- Identify solutions
- Assess a number of Capability concepts

EAGLE WARRIOR 17-1
Initial Planning
Conference
May 17

EAGLE WARRIOR
AD ASTRA 17
Industry
Innovation Day
Jun 17

CAS' Air Power
Conference
Jul 17

EAGLE WARRIOR 17-1
Main Planning
Conference
Sep 17

EAGLE WARRIOR
Combat Cloud
Spot Point Event??
Sep 17

EAGLE WARRIOR 17-1
CAPSTONE
Nov 17

EAGLE WARRIOR 18-1
CSBA STRATEGIC
CHOICES WARGAME
Feb 18

RAF100

EAGLE WARRIOR 18-2
RAF Future Game
Nov 18 / Jan 19

EAGLE WARRIOR
AD ASTRA 18
Innovation Day
May 18

EAGLE WARRIOR
AD ASTRA 18
Pre-Workshop
Apr 18

EAGLE WARRIOR Series 18-X
Industry One-to-Ones?

Why?

". . . we must sustain our posture . . . . we need new and different thinking on where we train, to demonstrate modern deterrence . . . . . . we need to think very carefully about how we deploy and our ways of logistic support; some of those may encourage us to think differently about the way we used to do things. My personal main effort is to sustain our edge in this troubled world; our equipment has to be good enough; our training exercises need to be creative and imaginative; simulation and wargaming need to be higher priorities."

Air Chief Marshal Sir Stuart Peach GBE KCB ADC DL
RUSI Annual Chief of the Defence Staff Lecture 2017

Where and when?

Who - participants?

- Over 150 Players from three countries
- 2* Joint Force Commander, 1* Game Director
- VIP visit from Chief of the Air Staff

- The best and brightest military minds from
  - Royal Air Force
  - British Army
  - Royal Navy
  - Joint Forces Command
  - Defence Intelligence
  - Defence Science & Technology Lab (Dstl)
  - United States Air Force
  - Royal Canadian Air Force

Who – designers, OA and facilitators?

- ~10 Wargame designers / facilitators
- ~ 20 data capturers /analysts
  - Air Warfare Centre (AWC), Dstl, CORDA, MOD's Development, Concepts and Doctrine Centre (DCDC), Royal Canadian Air Force Aerospace Warfare Centre, and US Department of Defense.
- 2 IT support crew (Mass)

What?

**Five parallel games looking at different aspects of Air Capability**

1. Rapid Campaign Analysis Toolset (RCAT) used to consider big picture capabilities in the 2020 and 2030 time frames
2. Joint Action Command and Control (JACC) game used to consider Command and Control aspects of future operations
3. TacAir game used to consider tactical engagements
4. Homeland Resilience Game used to consider infrastructure vulnerabilities
5. Matrix Command Game to allow strategic issues to be addressed

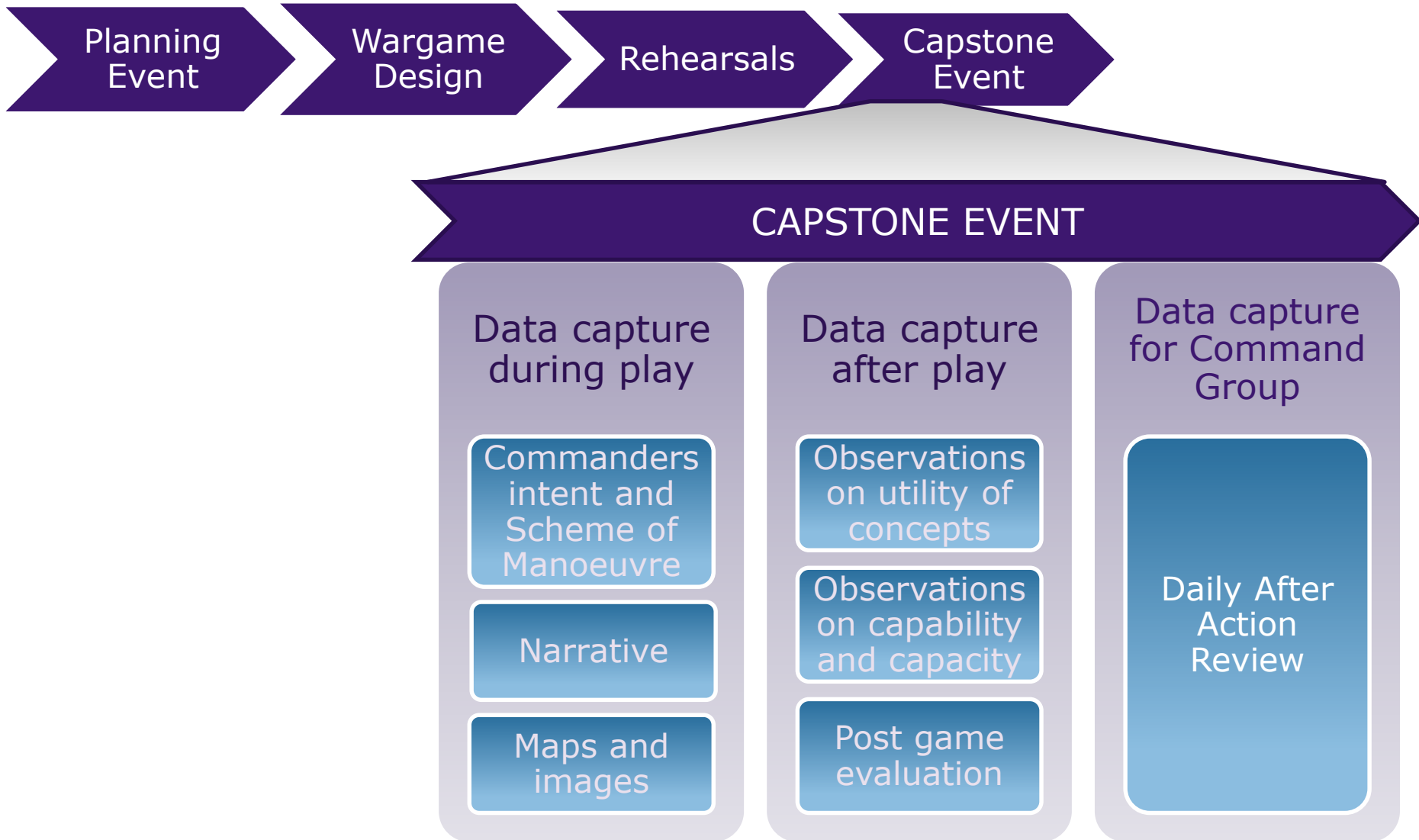**Comprehensive data capture to establish evidence base**

- Observations and insights captured during game play
- Opinions captured in post turn surveys
- Daily after action reviews to consolidate findings

What? The Five Games
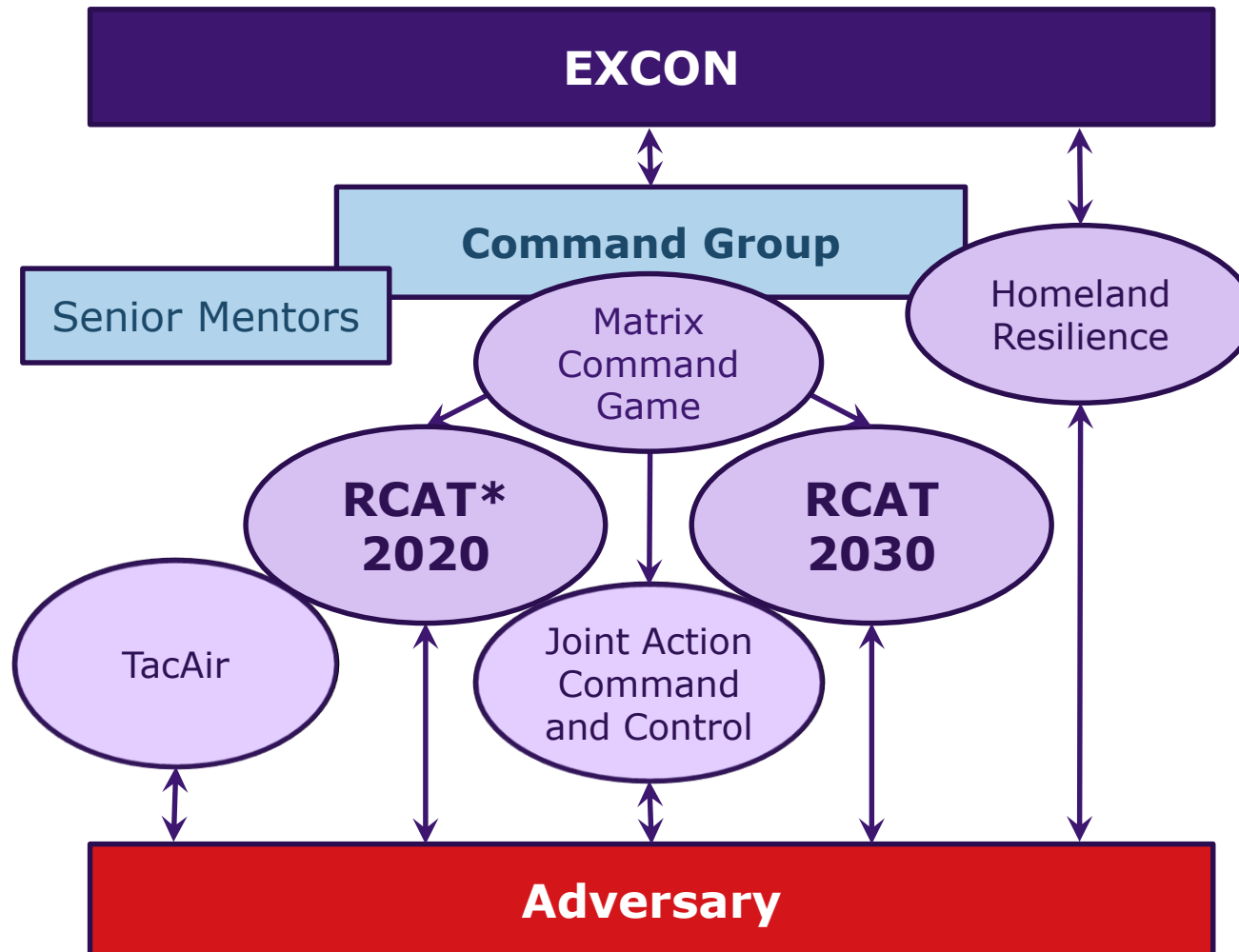
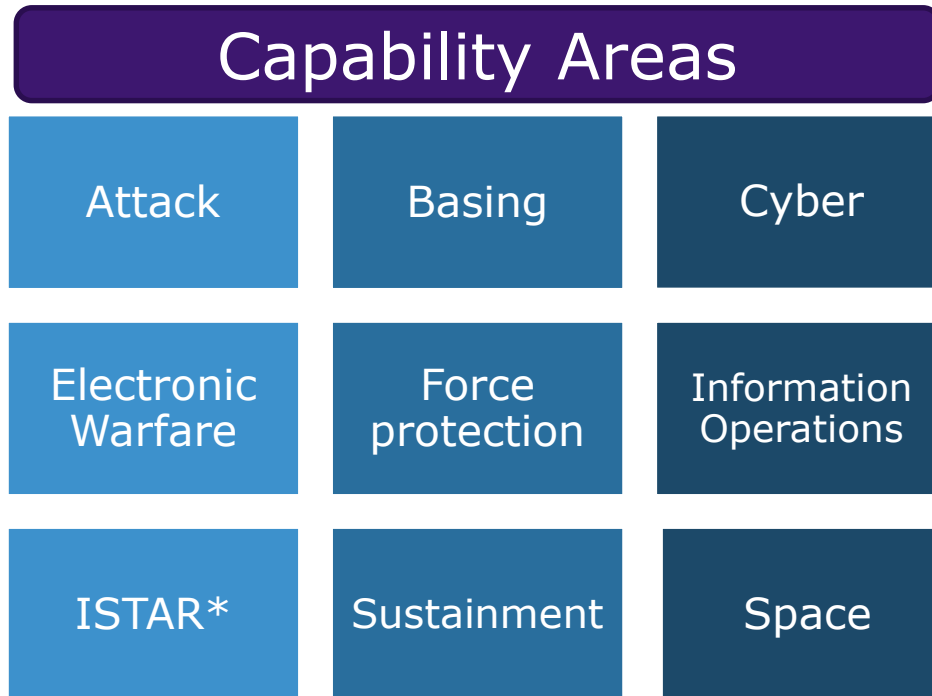*RCAT: Rapid Campaign Analysis Toolset

How?

How? The Gaming Approach

Manual games: no simulation support

- Few if any quantified engagements results were generated
- Dependent on the Subject Matter Experts playing
- Active involvement in decision making and the adjudication
- Discussion / justification of action core to turn outcome
- Able to explore operational and tactical assumptions
- Focus on '**Why'** NOT 'What'
- No reliance on IT systems

Limitations

- Difficult to replicate
- Greater burden on the facilitators and analysts

Air Capability Concepts

Capability Areas

Attack	Basing	Cyber
Electronic Warfare	Force protection	Information Operations
ISTAR*	Sustainment	Space

- Concept cards available to players, used at various points
- Generated by Air Warfare Centre and validated by Dstl
- Specification of concepts is classified
- 23 for 2030, 14 for 2020 sorted by Technology Readiness Level (TRL)

*ISTAR: Intelligence, Surveillance, Targeting and Reconnaissance

Concept selection pre game - toolkit

Concept Experimentation 'Pipeline' approach

- The art of the possible
- What's on the menu in 2020/2030?

- Air Concepts Database - encompassing a vast array of ideas and possibilities
- Filter, collate, combine, refine to systems/system-of-systems, and funnel to Air Concept 'Buckets'

- Future cast Air Capability vs 2020/2030 threat environments to identify future force requirements/capability gaps
- Assign concepts from buckets to future force requirements

- Concept owners
- Ensure concepts credible, verified and valid - through engagement with technical experts in the RAF and Dstl
- Dragons Den

When to play?

Concept selection in game

Concept introduction to games

- Concepts introduced into games at predetermined times
- Plan of concept play developed after Dragons Den discussion, but left open ended
- Final decision on introduction of concepts taken by game controllers at Eagle Warrior 17, where most beneficial

Concept owners – responsibilities

- Further refinement of concepts (right up to game play in some cases!)
- Develop a clear understanding of the CONOPS – when, where and how to use the concept to best effect
- Advise game controller on when they could be played
- Explain concept to players during game play
- Respond to Red/Blue challenges on usability/applicability, and provide evidence on how the concepts could be used in a coherent manner with planned forces

Concept evaluation and data capture

Concept evaluation

- Concept owners 'sold' concepts to game players
- Blue players asked to answer questions about how having the concept would have affected the outcome of their planned move, and what changes they would have made
- Red players asked to provide their response
- Other EW17 participants provided critical thinking/ Red Teaming

Concept data capture

- Operational Analysis captured Observations, Insights and Lessons
- Game players and participants completed questionnaires capturing assessment of effectiveness of concepts in affecting outcomes
- Participants were asked at the end of EW17 to grade each concept overall and rank order to evaluate preferences

Lessons – concept development

- Concept Database was useful to the Concept Experimentation 'Pipeline' approach – adequate time and planning is needed in advance

- Concept Owners critical in taking responsibility for refining CONOPS, ensuring credibility, down-selection, and game play insertion

- Participants need sufficient information to make choices (with consequences) about the concepts to avoid the 'ice cream' analogy – concept gaming (competing a range of concepts for a 'winning' force mix) pre-event (IPC/MPC?) might help

- Concept evaluation and assessment should provide objective evidence to continue the next iteration of the concept experimentation 'pipeline' – quantifiable comparison to baseline control would help (hard to do?)

Lessons - wargaming

- MOD Wargaming Handbook provided an essential hand rail for Air

- Ensure all participants are suitably qualified and experienced

- Allow players (and supporting staff) sufficient time to plan, reflect and analyse

- Use an empowered Independent Peer Review Board to assure all aspects of the event

- Using a specialist contractor helped facilitate data capture

Lessons - analysis

- Maintain the aims of the wargames and the event right through planning/design

- Engage the Wargame Designers and Analysis team as early as possible, and heed their advice

- Ensure the Wargame Designers work alongside the planning team to improve development of the wargames

- Design of the games must be driven by understanding of the desired quality/rigour of the evidence to be generated.

- For future experimental wargames, concept of analysis needs to be derived first to drive the wargame design and data capture process

- A mix of Analyst/recorders is ideal - some dedicated to a particular game, some roaming between game sessions

Lessons – RAF

- The RAF now has a better understanding of how to conduct Wargaming, what it entails and how to utilise. RAF capability to plan execute and extract insights from wargame techniques will continue to improve

- Intersperse large events with smaller scale, more frequent wargames

- Experience of the last 25 years has driven a particular mind set: RAF wargaming culture can help mitigate this, and requires continued inculcation over time

- For future near peer operations significant educational challenges exist: a growing RAF 'Blue Pool' of appropriate talent, skill and experience is required

What did the players think?

	RCAT 2020	RCAT 2030	2020 &2030	JACC (C2)	Tac Air	Cmd Grp
I understood the purpose of the game	5	4	4	5	4.5	5
The game contained the appropriate level of detail	4	4	4	4.5	4.5	4
The game generated valuable insights and/or observations regarding future capability	3	4	5	5	4.5	5
The gameplay process was easy to follow	3	4	4	4.5	4	5
The game provided an appropriate level of involvement	4	4	4	4.5	4	5
The length of game turns was appropriate to allow consideration of relevant aspects of future capability	2	4	4	4.5	4.5	4
The pre-briefing material was useful	3	3	4	3.5	3.5	5
The OIL capture process was valuable	4	4	4	4	4	5
Overall I emerged from the game play with a greater understanding of the capability options available to the RAF	4	5	4	5	4	5

"Eagle Warrior was designed to enable a truly joint and integrated fight, collecting evidence to contribute not only to Air-Land and Air-Maritime integration, but also multi-domain (Space and Cyber) integration in a complex battlespace.

It was executed brilliantly."

Air Commodore Jules Ball
Event Director

ASC
ANALYSIS SUPPORT CONSTRUCT

For more details on the ASC, please email asc@corda.co.uk.