

Wargaming 101

Tools, Techniques and Procedures

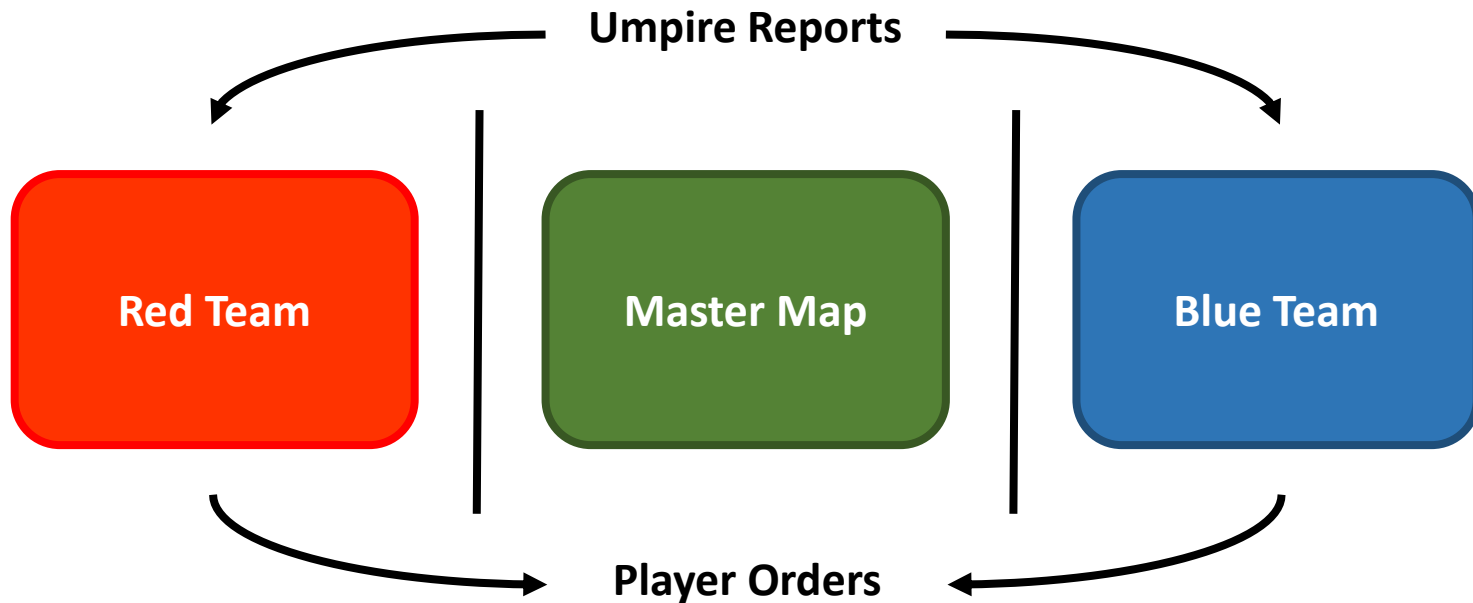
with

Tom Mouat and Jim Wallman

Game Characteristics

- Open
 - God-like overview.
 - All forces in view.
 - All rules and assumptions known to all.
- Closed
 - Fog of War.
 - Limited information (enemy, own troops, etc).
 - You may not know all the rules, or they might be different for different sides.
- In reality most games are on a continuum between these two characteristics.

Standard Closed Game Layout



Teams in separate rooms, or separated by dividers.

1. From Dr Paddy Griffith. Advanced Wargames. <http://myweb.tiscali.co.uk/paddygriffith/other.htm>

Design Types

- Computer Wargame
 - Easily recognisable.
 - Easy to make a Closed Game.
 - All algorithms hidden.
 - Steep learning curve unless COTS.
 - Lengthy setup.
 - Expensive and not very portable.
 - Very inflexible.
 - Fixed level of operation and resolution.
 - Very difficult to represent soft issues.

Computer Wargame



Design Types

- Map Wargame
 - Easily recognisable and understood.
 - Facilitates closed games well.
 - Cheap and quick to develop (with practice).
 - Relatively portable.
 - Flexible (same design can be applied to multiple maps).
 - Not as good for low level tactical games.
 - Requires a degree of abstraction.

Map Wargame



Design Types

- Board Wargame
 - Easily recognisable and understood.
 - Familiar to recreational gamers.
 - Tends towards Open games.
 - Highly structured and abstract (allowing focus on a small number of key elements).
 - Relatively portable.
 - Specialised.
 - Good as an introductory technique.

Board Wargame



Design Types

- Command Decision and Planning Wargame
 - Covers a wide range of structured formats such as seminar or committee games.
 - Highly accessible (no game rules to absorb).
 - Mainly about communication and decisions.
 - Cheap and fast to develop.
 - Good for testing assumptions.
 - Less good for combat situations.

Seminar Wargame



Design Types

- "Sand Table" Wargame
 - Use of 3D models to represent tactical situation.
 - Requires construction of the environment.
 - Good for low level tactical actions.
 - Good for teaching equipment recognition and capabilities.
 - Competing with FPS Computer simulations.
 - Can be mistaken for "playing with toy soldiers".

"Sand Table" Wargame



Design Types

- "Soft Issues" Wargame
 - Multi-party games with many different actors.
 - Requires highly skilled facilitation.
 - Most useful in areas of uncertainty, low specific detail and strong political content.
 - Highly portable.
 - Highly flexible.
 - Requires subtle qualitative analysis.
- Matrix Games, Consensual Analysis Games, Role-Play Games.

Matrix Game



Design Types

- COTS Wargame
 - Can be a useful component of a wider Wargame.
 - Can be an effective teaching aid.
 - No design effort required.
 - Relatively cheap to acquire.
 - Fixed rules and processes.
 - Some can be inaccessible for beginners.
 - Inflexible.

COTS Wargame



Design Types

- In reality a game design can feature elements of several of these broad types.
- Business Games tend to be a mixture of seminar wargame and role play (with somewhat less combat resolution).



Test and Refine

- Does it meet the aim?
 - Be honest!
 - Get an external viewpoint.
 - Top Down design rather than Bottom Up.
 - Simplify – always simplify.
 - Time management in professional Wargames.
 - Look at the cycle and review criteria.
 - Be prepared to start again.
- Test, test and test again.

Dealing with Combat

"War is the province of chance. In no other sphere of human activity must such a margin be left for this intruder. It increases the uncertainty of every circumstance and deranges the course of events."

- Karl von Clausewitz

Dealing With Combat

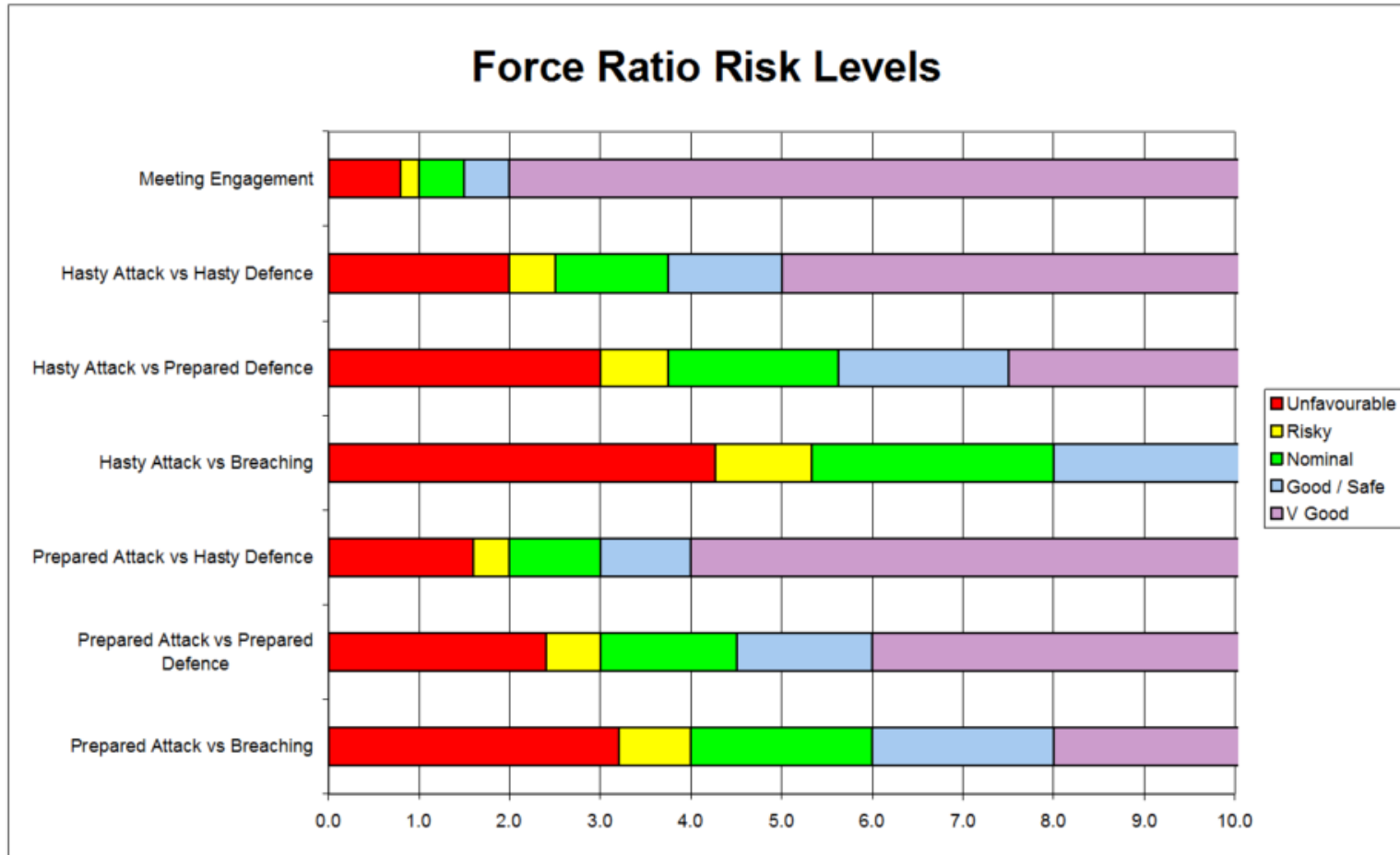
- How do we get numbers?
 - Observation.
 - Eye-Witness Accounts.
 - Historical Analysis.
 - Experience.
- What affects the numbers?
 - Force Ratios, Posture, Environment, Training, Equipment, Morale, etc.
 - How do they affect the numbers?
 - Lanchester.

Validation and Verification

- If you are doing analytical Wargaming you must be able to justify the numbers.
- **Validation:** Do the numbers work in the way they were designed to?
- **Verification:** Is that way appropriate to what we are trying to achieve?
- If we are looking at non-kinetic effects, people, and decision makers, exact numbers may not be possible...

Dealing with Combat

The chart below indicates the level of risk for a force launching an attack against an opposing force, based on their Force Ratio, and the attacking and defending postures.



Dealing with Combat

- The outcome of combat is rarely certain.
- There are many factors that make a difference.
- Ensuring your plan has the maximum of positive factors on your side, and the least on your opponents side will increase you chance of success.
- But there is always a risk of failure.

Dealing with Combat

The Combat Results Table (Kriegsspiel - 1824)

TABLE I OUTCOME OF HAND-TO-HAND COMBATS

Die	1	2	3	4	5	6	Odds
I	25 10	30 12	18 6	25 10	30 12	18 6	1:1
II	○	18 6	18 6	25 10	30 12	18 6	3:2
III	18 6	18 6	30 12	25 10	18 6	18 6	2:1
IV	18 6	○	○	30 12	18 6	25 10	3:1
V	18 6	○	25 10	25 10	30 12	18 6	4:1



Blue

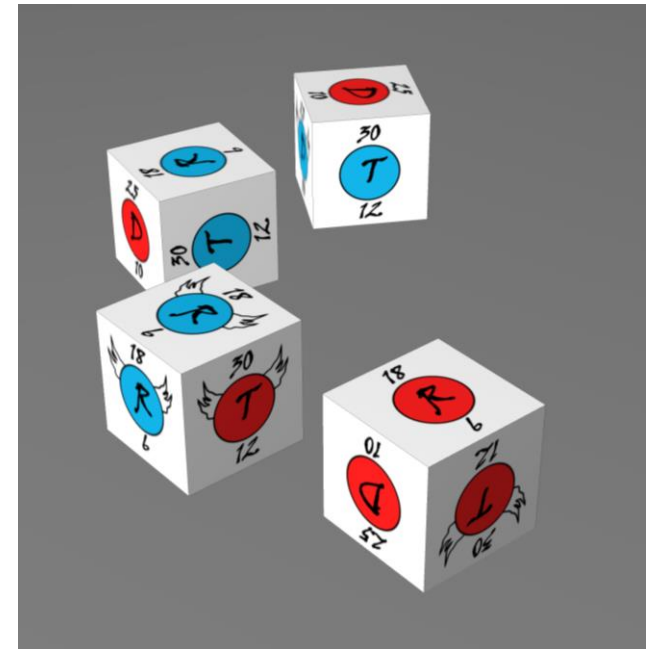


Red

R - repulsed

D - defeated

T - totally defeated



Dealing with Combat

The Combat Results Table (RCAT – 2014)

Die	1:3 or <		1:2		1:1		1.5:1		2:1		2.5:1		3:1		4:1		5:1		6:1 to 8:1		> 8:1	
1	75/50	F	75/50	N	75/50	N	75/75	N	50/100	W	50/100	W	25/125	W	25/150	W	0/-	D	0/-	D	0/-	D
2	100/50	F	75/50	F	75/50	N	75/50	N	75/75	N	50/75	N	50/100	W	25/125	W	25/150	W	0/-	D	0/-	D
3	100/50	F	100/50	F	75/50	F	75/50	N	75/50	N	75/75	N	50/75	N	50/100	W	25/125	W	25/150	W	0/-	D
4	100/50		100/50	F	100/50	F	75/50	F	75/50	N	75/50	N	75/75	N	50/75	N	50/100	W	25/125	W	25/-	D
5	150/25		100/50		100/50	F	100/50	F	75/50	F	75/50	N	75/50	N	75/75	N	50/75	N	50/100	W	25/150	W
6	150/25		100/50		100/50	F	100/50	F	75/50	F	75/50	N	75/50	N	75/75	N	50/75	N	50/100	W	25/150	W
7	175/25		150/25		100/50		100/50		100/50		75/50	F	75/50	N	75/50	N	75/75	N	75/75	N	25/125	W
8	200/0		175/25		150/25		100/50		100/50		100/50		75/50	F	75/50	N	75/50	N	75/75	N	50/100	W
9	225/0		200/0		175/25		150/25		100/50		100/50		100/50		75/50	F	75/50	N	75/50	N	75/75	N
10	250/0		225/0		200/0		175/25		150/25		100/50		100/50		100/50		75/50	F	75/50	F	75/75	N



Combat Factor Modifiers	Modifier
Defender in urban (only until attacker achieves a 'success' = break-in battle) or prepared defence (one only)	x 1.5
Attacker conducting opposed obstacle crossing or airborne assault	÷ 2
Highly defensible terrain (HDT) if in prepared defence	x 2
Complex defensible terrain (CDT) if in prepared defence	x 3
CE multiplier	As counter
Neutralised	÷ 2

Key	
x / y	Attacker / defender % of counters that receive a -25% CE 'step' loss
N	Defender is neutralised. Combat factor is ÷ 2 and can't move, attack, Task Org, find, fortify or become overt
W	Defender withdraws one area and is also neutralised
D	Defender combat ineffective: destroyed (remove counter)
F	Defender is fixed and can't move, attack, Task Org or find

An attacker 'success' occurs and a marker placed on a result of 'N', 'W' or 'D' or if a FE is removed. Any other result is a defender success

Collateral Damage. A die roll of 10 or more results in destruction significant enough to warrant MT movement: place a CD marker

DRMs: + 1 per 7 factors used in the attack + 2 if attacking in urban area - 2 if attacking in a rural area + 2 if using Indirect Fire in urban area

Probability and Sensitivity

- Probability and Risk.
 - Not all Wargames need randomness in the design (player decisions can provide enough).
 - Where there are a range of outcomes randomness may be essential.
 - Understand probability and risk.
 - Need to be able to explain how unpredictability or randomness adds to the game design.
 - Understand probability basics.
 - Normal distribution, etc.

Probability and Sensitivity

- Sensitivity
 - Necessary to see if some events have a disproportionate effect on outcomes.
 - The importance of outliers.
 - 4-Box Approach.
 - Nuclear Weapons.
 - Only really relevant for analytical games.

Dice

- Dice can have negative connotations.
 - Use them as little as necessary.
- Resist the temptation to use Dice as a substitute for rigorous design mechanisms.
- If you have to use dice, percentages are easier to understand.
- You can always "hide the dice" in a random number table, card set, computer app, etc.

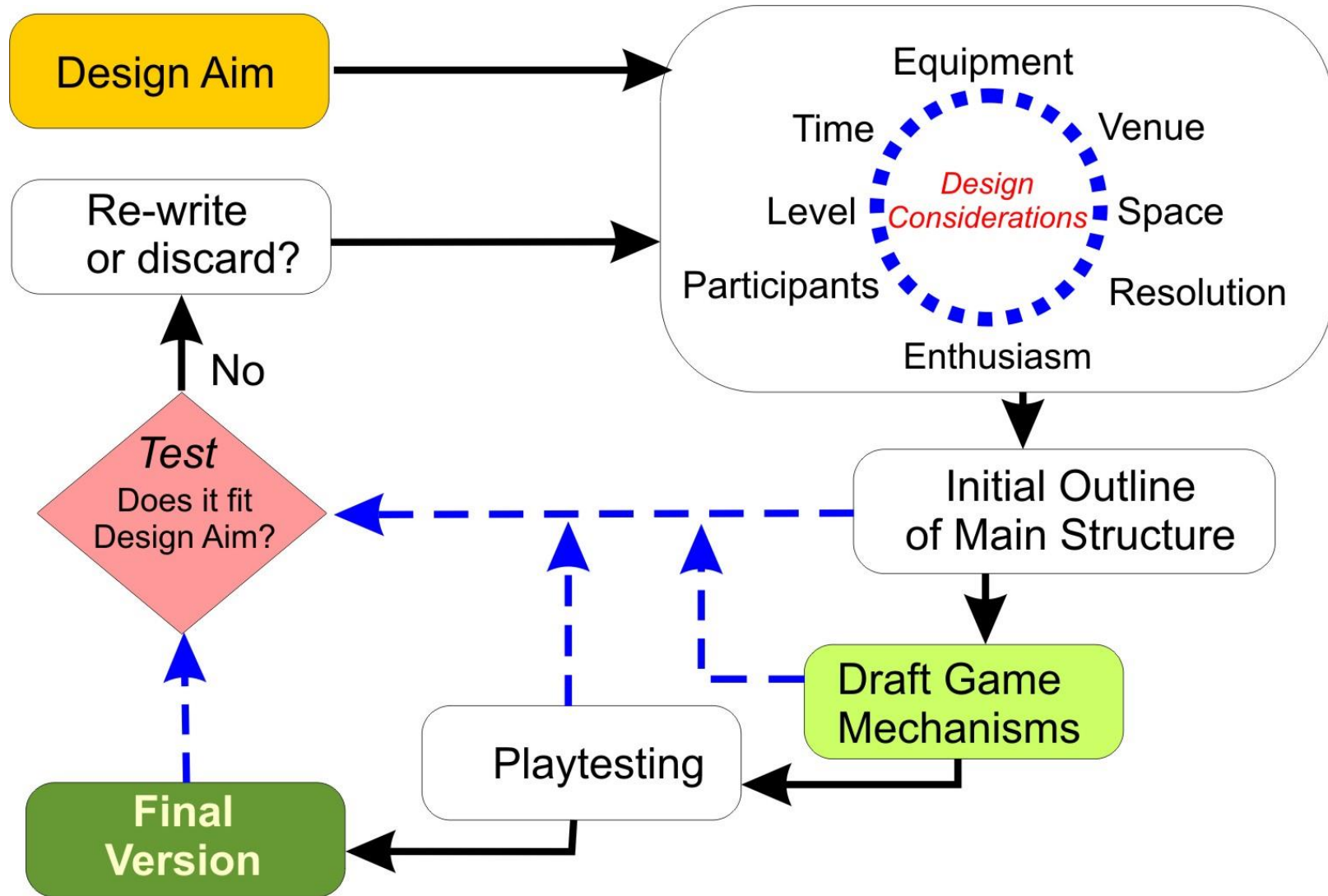
Hiding the Dice



Useful Tips

- Hex Grids
 - <http://axiscity.hexamon.net/users/isomage/misc/svg-hex.cgi> (Generates as SVG files)
- Drawing Software
 - <http://www.inkscape.org/en/> (Free)
 - <http://www.serif.com/drawplus/> (Pay)(£81.69)
 - <https://www.openoffice.org/product/draw.html> (Free)
- Components
 - <http://www.spielmaterial.de/>
- Foamboard
- A4 Sticky Labels
- Laminators.

Design Cycle - Review



Questions and Reflection

