



**What is the magic
word?**



Ranged Combat

What is ranged combat?

- A mechanic...
- That allows players/actors to...
- Impact/affect other players/actors at...
- Some defined distance(s).

Not a standalone mechanic

- “Ranged” is not a meaningful mechanic on its own, its added to other mechanics/effects
 - ▮ Ranged damage (cannon, bow)
 - ▮ Ranged status effect (gas grenade)
 - ▮ Ranged '**misc**' (can of green paint)

MDE

- As a mechanic, Range can help create many interesting dynamics:
 - Area control (don't go where they can shoot you)
 - Where do we fight (I want to run away if I have better range)
 - Maps (I want to fight where the map supports my amount of range)

A New Stat

- With the introduction of a new statistic called RANGE, combat once again changes radically.
- RANGE is the distance a character can make a ranged attack at each turn.
- Note that melee attacks could use a RANGE stat as well (usually 1, but perhaps 2 or 3 with a long weapon).



Image from the Street Fighter Revolutions Toy line.



We have had ranged all class!

- We've just assumed a range of 1 that can't change.
- Not unlike how we “assume” hit points and damage if everything dies in one hit.



Asymmetrical Ranges

- One of the biggest effects of range is when two characters have different RANGE stats.
- The character with the longer RANGE has the advantage, while the other character must close or run away.
- Think of the **MDE** effects of different range values

Asymmetrical Ranges

- Once both characters are within range of each other, it works like melee combat when analyzing DPS.
- The next thing is to figure out what would happen in a running battle.
- If you can attack while moving, or if the MOVE and RANGE differences are large, this can become a real balance problem.
- Can often be solved with the right map.

Range Brackets

- RANGE does not have to be all-or-nothing. It can be broken into brackets of point-blank, short, medium, long, extreme, etc.
- Different brackets can affect hit probability and/or damage.
- If you **need** more than five brackets, you should use a formula instead (or a table, usually derived from a formula).



Aiming

- Many games imply actions must be taken to accurately aim a ranged attack.
- The default could be aimed, while multiple un-aimed shots could be done in one turn (at a penalty).
- The default could be un-aimed, with bonuses for taking actions to aim.
- Bracing, bipods, tripods, etc. can all affect aimed shots as well.

What does missing mean?

- Unlike melee, many ranged systems need to know what a miss 'means'.
- Do misses possibly hit other targets?
- Do effects have areas/is there 'splash damage'?
- Should missing do no damage? Less damage?
- What happens when the effect of an action is greater than its range?

Ranged Defenses

- Many defenses that work in melee combat don't make as much sense in ranged combat.
- Dodging tends to work fine, although it is hard to dodge fast-moving projectiles.
- Blocking works as well, but most shields can't stop modern ranged weapons.
- Parrying is almost impossible, but could work against thrown weapons.

Cover

- The real defense against ranged attacks is cover (preferably hard cover).
- Any type of cover makes you harder to hit if it makes you harder to see.
- Hard cover makes you harder to hit because the target area is smaller (this can be modeled with hit locations).
- Consider allowing stealth to be used as a defense when under cover.



Line-of-Sight

- Rules are needed for all the edge cases.
- Center-to-center? Edge-to-edge? Center-to-edge?
- What about lines that are right on the edge of a tile/hex/etc.?
- When does this count as partial cover?
- What about very large characters?



Ranged Attacks in Melee Combat

- Making ranged attacks while engaged in melee combat is difficult.
- Most combat systems will either not allow it, will penalize it, or will cause an opportunity attack when it is attempted.
- This must be accounted for when analyzing ranged combat systems.
- For heroic systems, allow abilities that let you violate this rule.



Area Effect Attacks

- Attacks can affect a whole area instead of a single target (this could apply to “melee” attacks as well).
- These areas can have a variety of shapes (circle, square, cone, line, etc.).
- Their damage can be even across the area, or drop-off with distance from the center/starting point (i.e., an explosion).



Area Effect Attacks

- Is an area-effect attack targeted against a location or an actual character?
- What if the attack misses?
- What if the target character is moving fast? What if the target location is?
- Can you defend against an area effect attack? In what ways?
- How does cover work in this case?



Range Combat Map Considerations

- Line-of-sight now really matters.
- Sniping spots, kill-zones, choke-points.
- Terrain that blocks movement and melee, but not ranged attacks.
- Areas with cover vs. areas without.
- How do area effect attacks interact with the map?



Intensity Curve effects of ranged

- Spikes when the first unit is 'in range'
- Again when the second unit is in range and combat can go back and forth
- Each movement into or out of range.
- Impact of AoE/full effect vs partial effects
- Changes in range 'category'
- Visual/audio/mechanical clues about range



Map Topology Refresher

- 2D maps come in a variety of topologies.
 - **Linear:** just point A to point B, even if the path is convoluted (or pseudo-3D).
 - **Loop:** point A to point A.
 - **Branching:** point A to point B, but with two or more paths to get there (could be a loop as well).
 - **Hub:** spokes coming off of a central hub.
 - **Maze:** only one (or few) paths through, with lots of dead-ends.
 - **Free-form:** no definable topology.



Homework

Bring 1 of each map type (1D, 2D grid, 2D region, 2D freeform)

Include full lists of what is on each map.

All maps must use ranged 'combat'

In most cases both the player and the enemies should have ranged attacks

Homework

- Maps still need:
 - Enemies
 - Loot
 - Terrain
 - Story.
- All maps must have a title, labels, key, and scale.

The background of the slide features several gray gear icons of different sizes. One gear is partially visible in the top-left corner. A cluster of four gears is located on the right side, with one gear overlapping another. In the bottom-right corner, there is a larger gear with concentric circles inside it, and another gear partially visible below it.

Homework

Develop each of the maps from lab. Have MDE and/or Intensity reasons for everything on them.

You need enough combat system to answer the MDE/IC questions.

Project 2

- Project 2 will be 10 maps, with intensity curves, MDE effects, and system.
- Plan ahead – you can use the maps you have generated in these labs as a template/base for the maps on the project
- READ THE RUBRIC

Questions?

