stealth\_shooter\_levels\_v16 — Dynamic World Size (One-Time Fit)

# What changed

• The game measures your window at launch and fixes the world size for the session. No scaling of sprites/UI—larger windows create a larger playfield.

• Difficulty fairness: base time, chip values, wall/enemy counts scale with world area. Travel distance rises ~√area, so timers follow the same factor.

• Systems (LOS/hearing, FSM, safe‑zone, heart/gun drops, roster variety) are area‑agnostic—movement & collision operate directly in world units.

# How sizing works

• World grid = 40px. World width/height are snapped to the grid and clamped to practical bounds.

• areaFactor = √(Area/960×600) adjusts time budgets; densFactor = Area/(960×600) adjusts counts (walls, enemies, chips).

# Tuning knobs

• Bounds in computeWorldSize(). • Exponents on densFactor for walls(0.85), enemies(0.6), chips(0.5). • BASE\_TIME in seconds.

# Notes

• Resizing or rotating after start does not change gameplay; reload to recompute. • Safe‑zone still blocks enemies and destroys enemy bullets.

# Smoke tests

• Simple assertions check area scaling, catalog fallback, and unlock gates.