Game 1: Bead Line

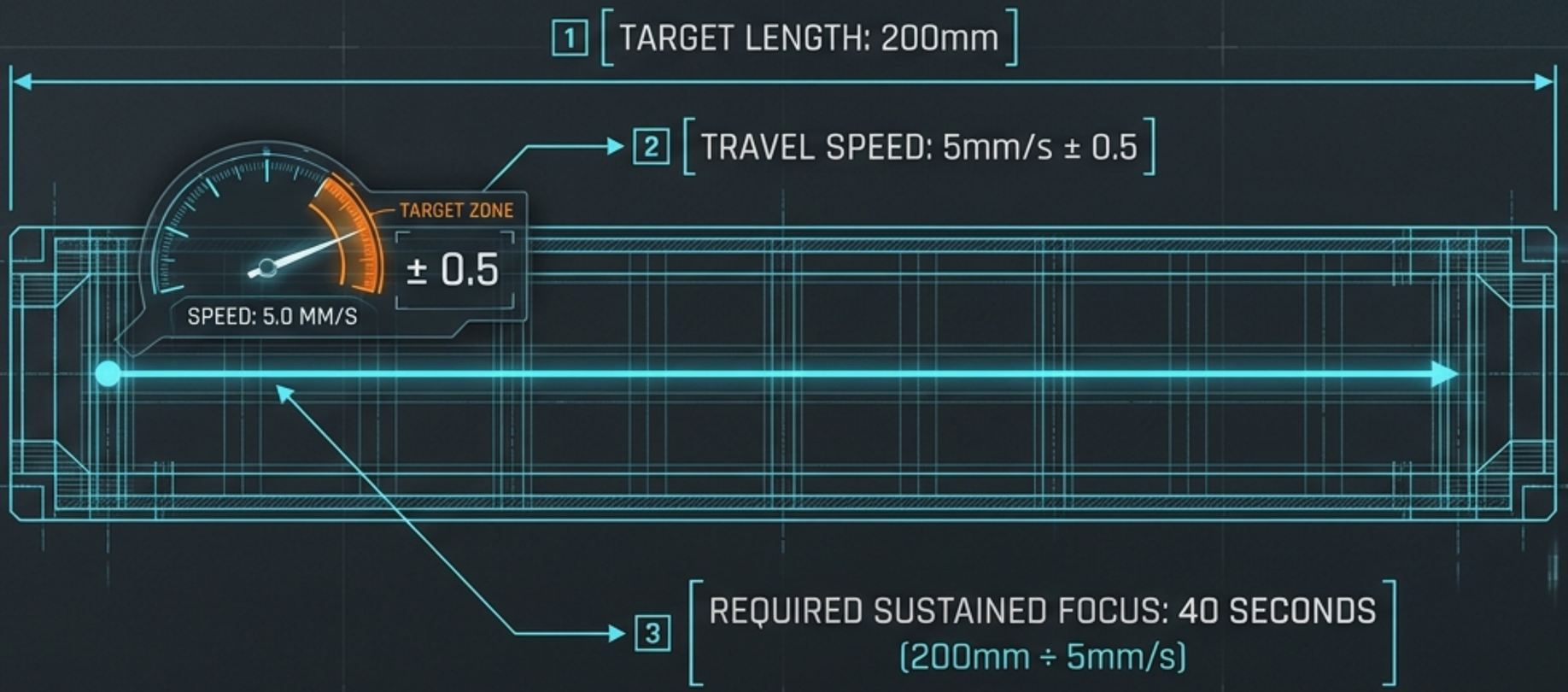
Mastering Travel Speed & Puddle Control

WELDER ESPORTS // 120-DAY PROGRAM // SEASON 1 BOOTCAMP



Gemini Notebook

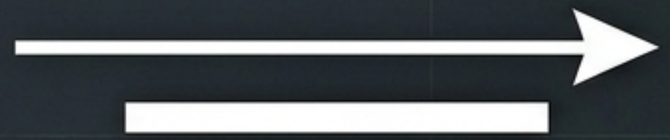
THE MISSION BRIEF: 200mm at 5mm/s



This is the first true test of a gamer's steady hand.
40 seconds of perfect haptic maintenance.

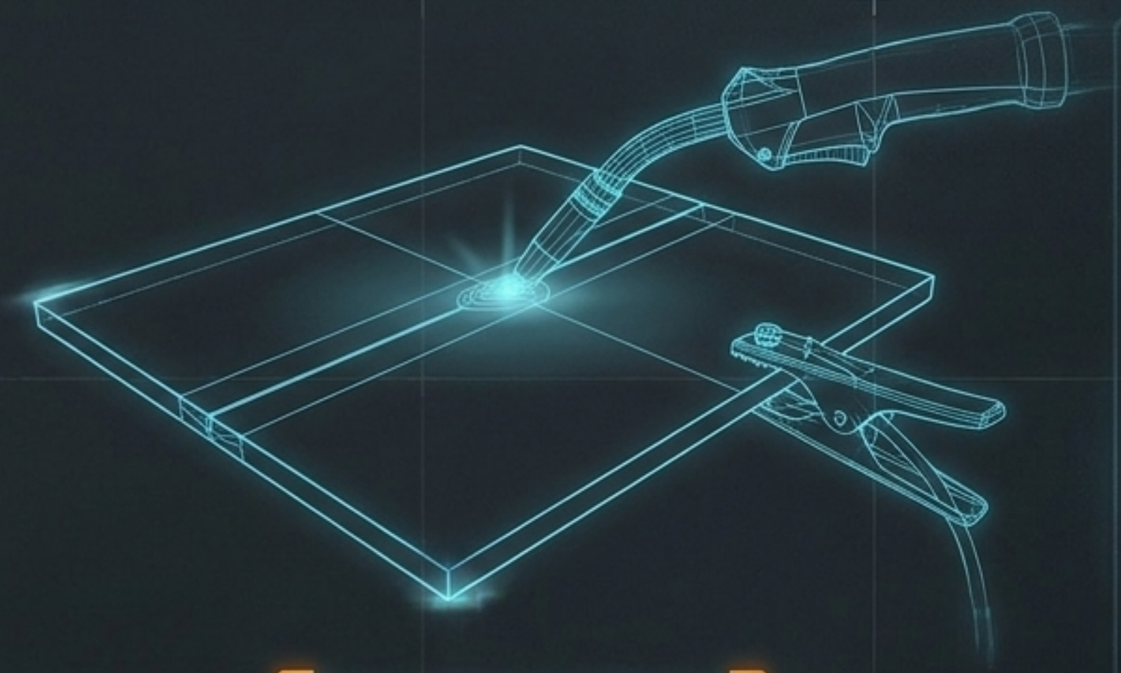
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Translating the Blueprint: AWS A2.4 & 1G Flat



AWS A2.4 Weld Symbol: Flat Bead

Players must interpret standard structural blueprints before initiating the arc.



Position: 1G (Flat)

Gravity assists puddle formation, establishing a beginner baseline for MIG fundamentals.

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The Operator HUD: Visualizing Muscle Memory

Travel Speed Monitor

Real-time visual cue holding the user at exactly 5mm/s.



Drift Warnings

Controller joystick triggers physical haptic vibration if the puddle deviates from the ±0.5mm/s tolerance.

Pathing Guide

Trains horizontal X-axis stability and precision tracking over 200mm.

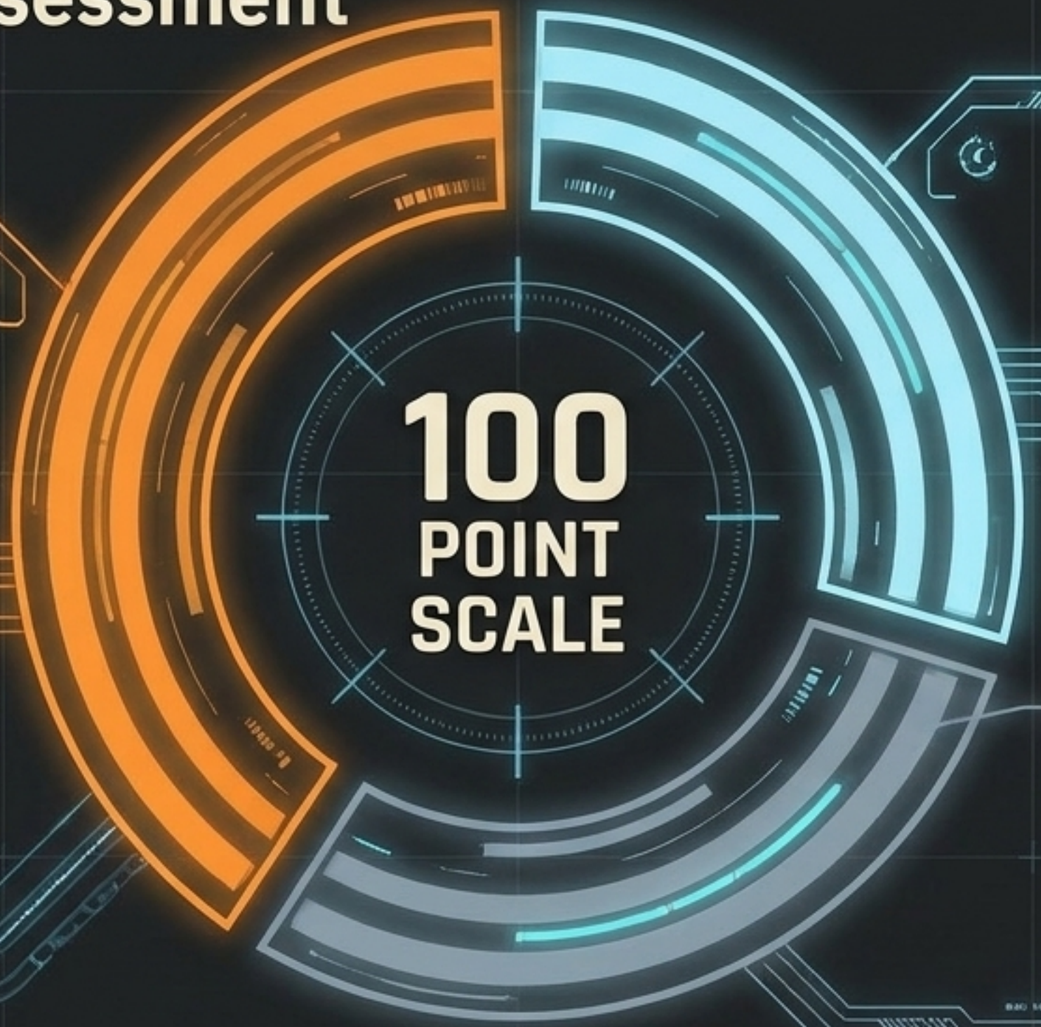
Gemini Notebook

The Mechanics Matrix: Gamer Inputs to Welder Outcomes

GAME MECHANIC	PHYSICAL WELDER SKILL	DEFECT PREVENTED
HUD Speedometer Tracking	Travel speed consistency	Prevents Undercut & Overlap
Crosshair Pathing Loop	Straightness / Puddle Control	Prevents Wandering Bead
Haptic Controller Corrections	Micro-muscle memory & Hand-eye synchronization	Prevents Inconsistent Heat Input

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Calibrating Mastery: The 100-Point Assessment



Accuracy (40%)

Scored strictly on bead straightness and path adherence.

Consistency (30%)

Maintained travel speed without variance (zero drift from 5mm/s).

Safety (30%)

Pre-game adherence to OSHA 1910.252 procedures (Auto-dark helmet shade selection, PPE, fire watch protocols).

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The XP Algorithm: Rewarding Perfection, Punishing Defects

$$XP = (Accuracy \times 10) + (Consistency \times 5) - (Defects \times 50)$$

Accuracy Scaling

Accuracy scales XP the fastest.

Precision is prioritized over completion time.

The Defect Penalty

-50 point deduction per defect.

Instills the reality that poor quality requires destructive rework.



Tier Achieved:

BRONZE WELD

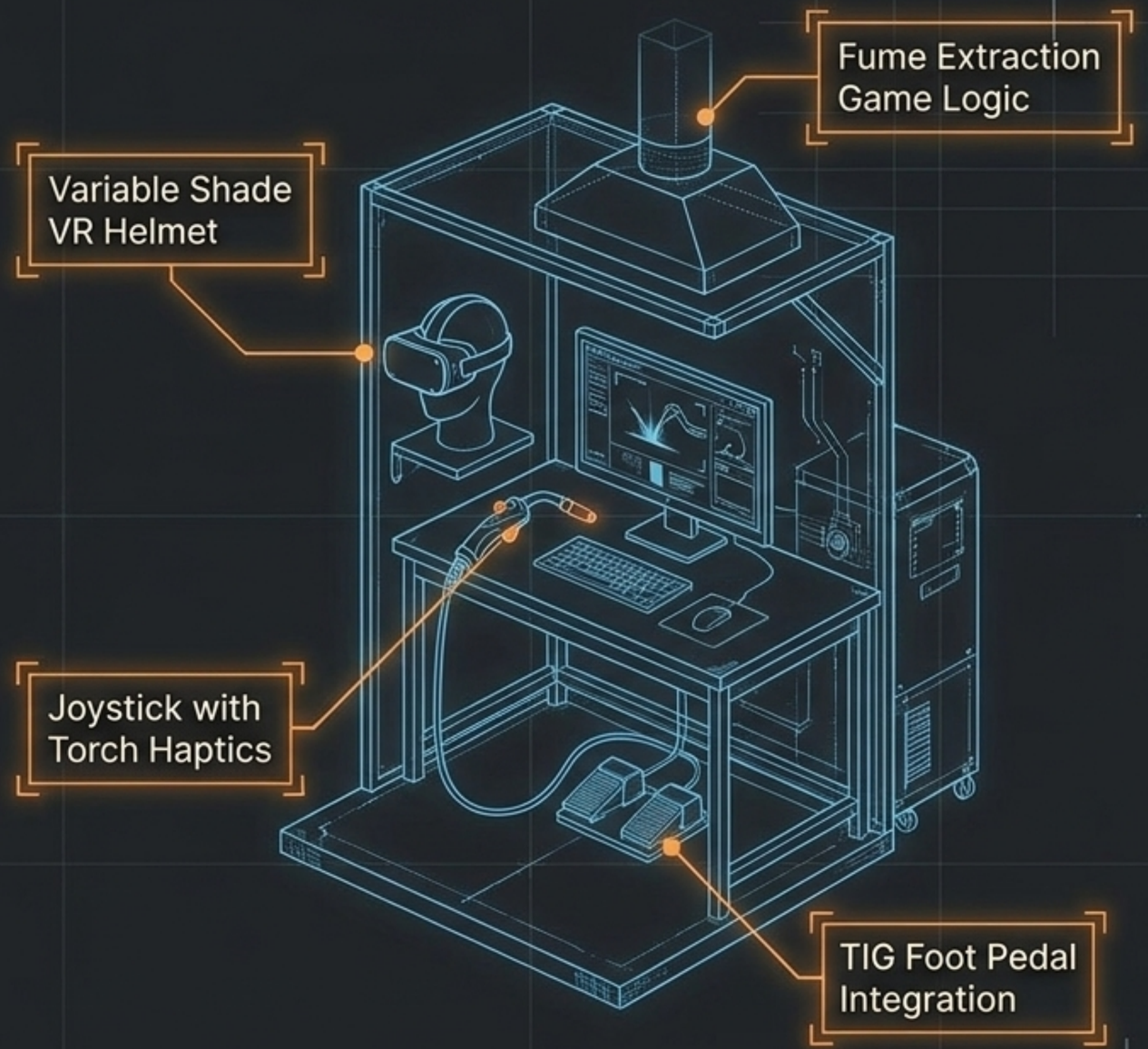
500XP / 70% threshold

Unlocks progression to 2G/3G positional training.

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The Daily Loop & Hardware Integration

- 09:00 - 09:45 | Classroom Micro-Lesson (OSHA/AWS)
- 09:45 - 12:00 | Game Drills (e.g., Bead Line Reps)
- 12:30 - 14:00 | Ranked Tournament (Same seed coupon)
- 14:00 - 14:30 | VOD Review (Puddle Cam Analysis)



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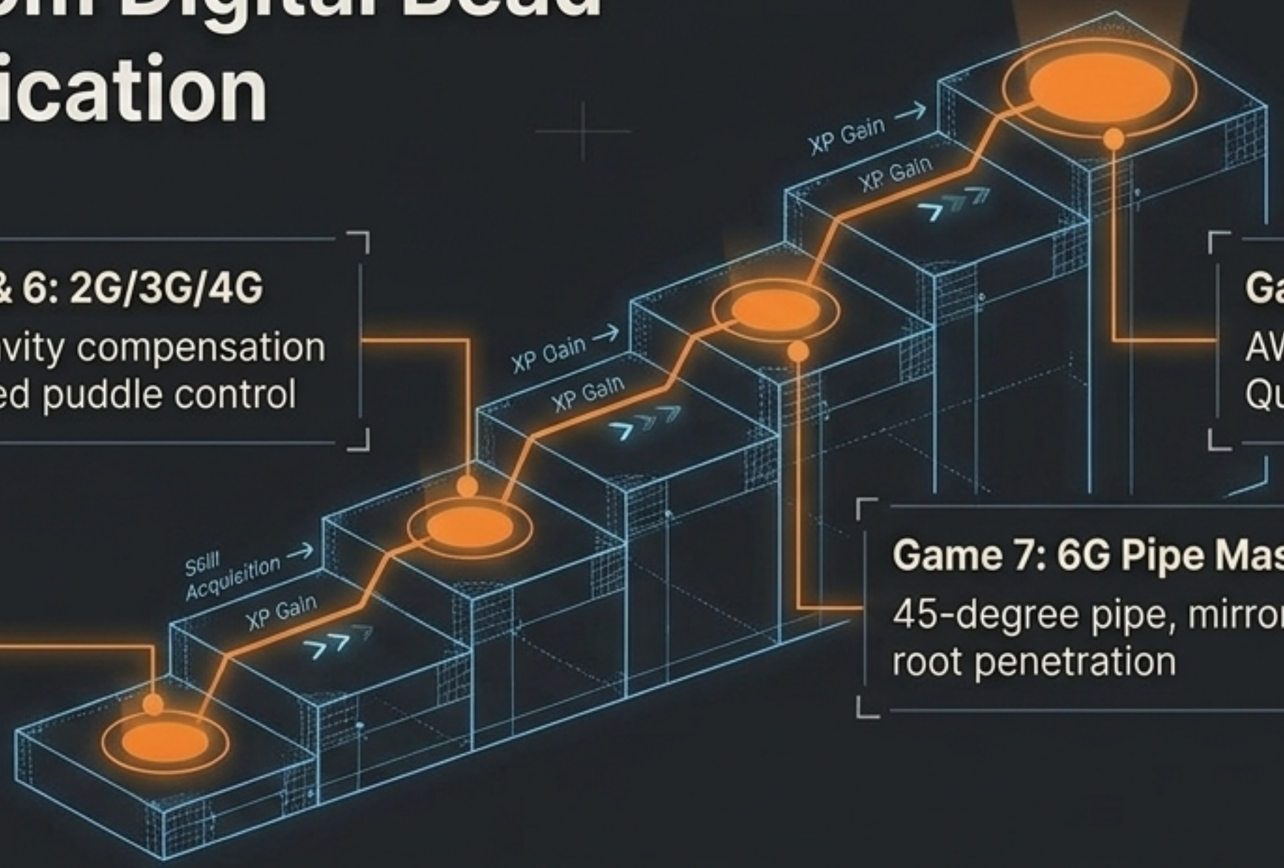
Synthesis: From Digital Bead to AWS Certification

Game 1: Bead Line
Mastering 1G, 5mm/s travel speed, steady hand

Games 5 & 6: 2G/3G/4G
Adding gravity compensation and inverted puddle control

Game 7: 6G Pipe Master
45-degree pipe, mirror view, root penetration

Game 12: Master Weld-Off
AWS D1.1 3/8in Qualification Coupon



The 5mm/s muscle memory built in Game 1 is the exact puddle control required to pass live, real-world AWS D1.1 structural certification on Day 120.

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