WELDER ESPORTS: FROM GAMER TO MASTER

The 120-Day AWS D1.1 + OSHA Compliant Training Program.

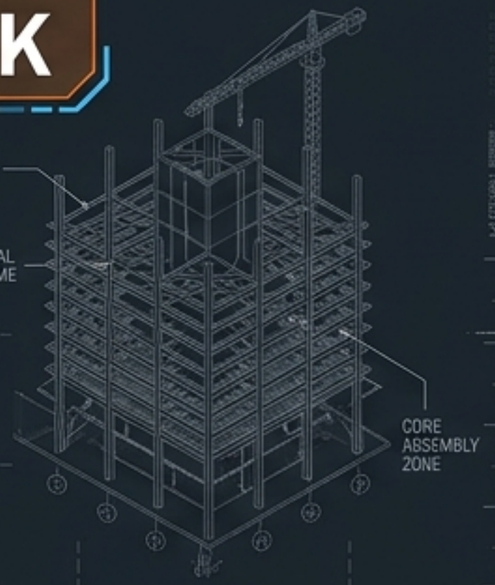


THE INFRAS-INFRASTRUCTURE BOTTLENECK

We are running out of masters. Traditional training pipelines are too slow, too too dangerous, and failing to engage the next generation.







Gemini Notebook

THE COGNITIVE MATCH

The skills required to dominate competitive gaming are the exact biological and cognitive traits required to master structural welding.

ESPORTS PROFILE

- **Reaction time** — 120ms
- **APM (Actions Per Minute)** — 400+
- **Elite focus** — 98% CONCENTRATION
- **Hand-eye coordination** — PRECISION TRACKING
- **Dual-tasking under pressure** — MULTI-THREADED PROCESSING

RAPID ADJUSTMENT

HIGH-FREQUENCY CORRECTION

SUSTAINED CONCENTRATION

SPATIAL MAPPING

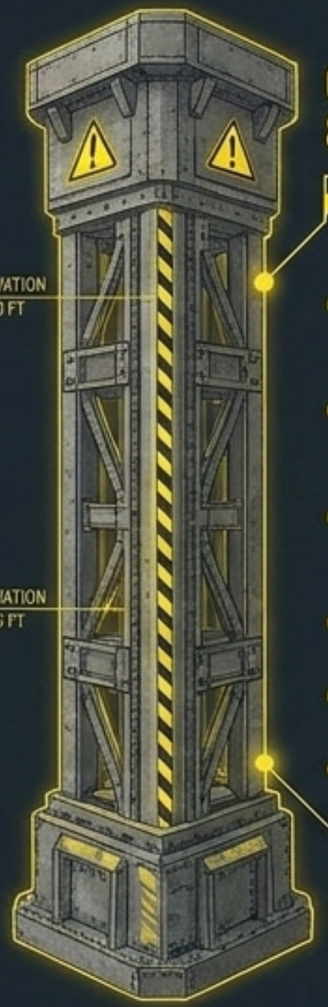
SIMULTANEOUS MONITORING

MASTER WELDER PROFILE

- **Travel speed consistency** — UNIFORM VELOCITY
- **Arc length control** — MICRO-ADJUSTMENT
- **Heat input management** — OPTIMAL FUSION
- **Puddle control** — MOLTEN DYNAMICS
- **Steady hand** — STABLE EXECUTION

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BUILT ON IRONCLAD STANDARDS

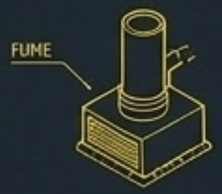


OSHA 29 CFR 1910.252(d) & 1926 SUBPART J

COMPLIANCE: CRITICAL
STATUS: ENFORCED

- COMPLETE SAFETY INTEGRATION
- 1910.255(a)(3) COMPETENCY VERIFICATION
- PPE REQUIREMENTS (AUTO-DARK VARIABLE SHADE)
- FUME VENTILATION
- FIRE WATCH PROTOCOLS
- HOT WORK PERMITS

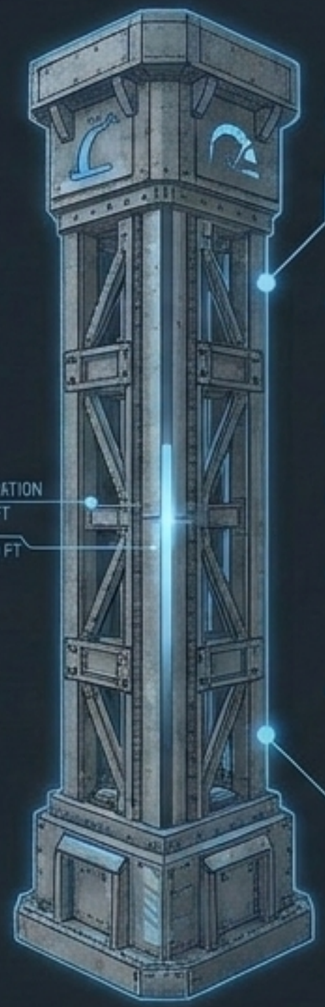






COMPLIANCE: CRITICAL
STATUS: ENFORCED



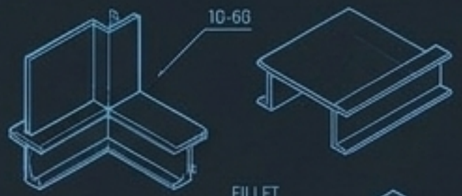


AWS D1.1 STRUCTURAL WELDING CODE - STEEL

QUALIFICATION: ACTIVE
STANDARDS: ANSI/AWS



- PERFORMANCE-BASED CW QUALIFICATION
- 1G-6G POSITIONS
- 1F-4F FILLETS
- 100% VISUAL INSPECTION PROTOCOLS
- DESTRUCTIVE GUIDED BEND TESTS (ROOT + FACE)



QUALIFICATION: ACTIVE
STANDARDS: ANSI/AWS

STANDARDS: ANSI/AWS



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THE PROCESS MATRIX

MIG (GMAW)



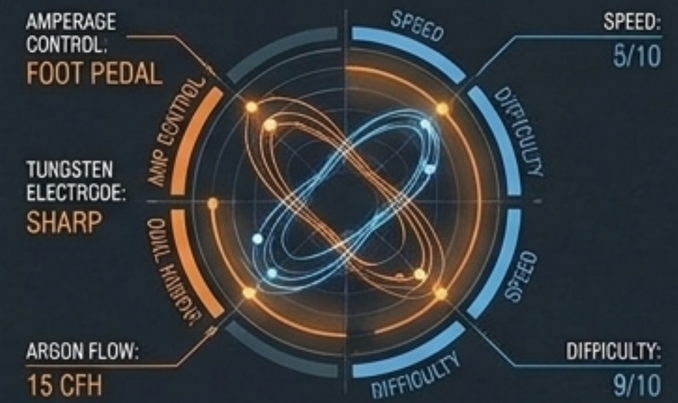
- PROFILE: 45% of the program. Fast, high-productivity, beginner-friendly.
- SKILL FOCUS: Travel Speed consistency.



TIG (GTAW)



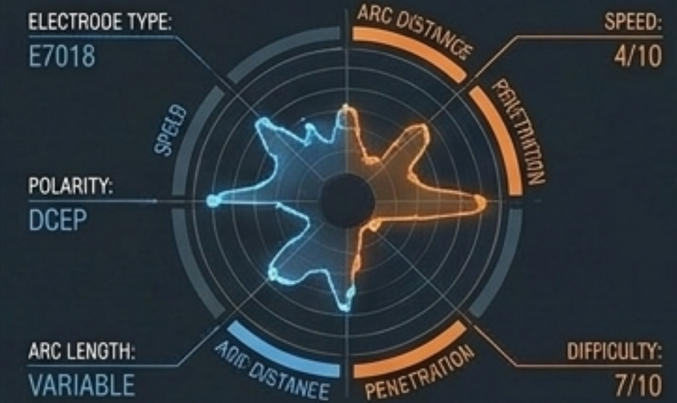
- PROFILE: Precision work, thin metals (stainless/aluminum).
- SKILL FOCUS: Dual-tasking (Torch + Foot Pedal amp control). The 'Secret' to elite focus.



Stick (SMAW)



- PROFILE: Rugged, outdoor, rusty environments. Heavy wall / Nuclear applications.
- SKILL FOCUS: Arc distance control, penetration.



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THE ENGINE OF PROGRESSION: THE DAILY LOOP

SYSTEM STATUS: ACTIVE CYCLE
DATA SOURCE: DAILY OPERATIONS MATRIX
UPDATE INTERVAL: REAL-TIME

9:00 AM - Micro-Lesson

Classroom deep-dives into OSHA hazards and AWS theory.

9:45 AM - Game Drills

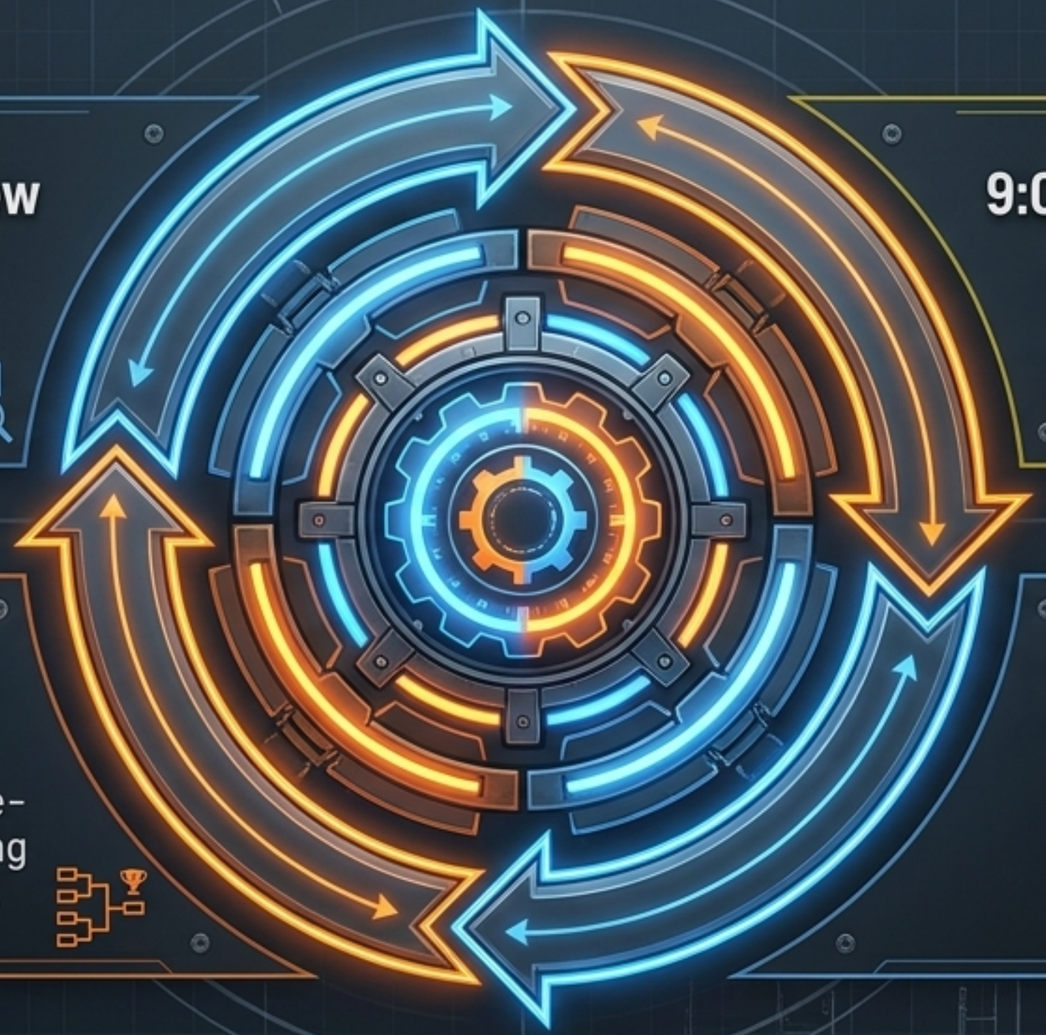
Targeted mechanic isolation (max 2 games for pure focus).

12:30 PM - Ranked Tournament

Competitive, pressure-tested execution using the same seed coupon.

2:00 PM - VOD Review

Puddle-cam analysis and frame-by-frame defect detection.



DATA SOURCE: DAILY OPERATIONS MATRIX
UPDATE INTERVAL: REAL-TIME
SENSOR FEED: MONITORING

THREAT LEVEL: OPTIMAL
ACTIONABLE INTEL: CYC

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THE FORMULA FOR MASTERY

THREAT LEVEL: STABLE

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

Weighting: Accuracy (40%), Consistency (30%), Safety (30%).
The harsh (-50) penalty for defects ensures safety is non-negotiable.

Bronze
500 XP (70% bead consistency + safety pass). Qualifies 1G.

Silver
2,000 XP (85% + Blueprint 80%+). Qualifies 2G/3G.

Gold
5,000 XP (92% + Inspection 90%+). Qualifies 4G/8G.

Platinum
10,000 XP (95% + Zero Defects). Job ready & remote operator qualified.



SYSTEM STATUS: ACTIVE MASTERY TRACKING

DATA SOURCE: XP MATRIX & CERTIFICATION DB
UPDATE INTERVAL: LIVE READOUT

THREAT LEVEL: STABLE
ACTIONABLE INTEL: MASTERY ACQ

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THE 120-DAY ROADMAP



5mm puddle control

teleoperation master

SEASON 1 (Days 1-30): Rookie Bootcamp.
(Safety, MIG, 1G flat)

SYSTEM STATUS: INITIALIZATION.
THREAT LEVEL: LOW.
OBJECTIVE: BASIC MANIPULATION & SAFETY.

SEASON 2 (Days 31-60): Operator League.
(Stick/TIG, 2G/3G, Blueprint reading)

SKILL ACQUISITION:
POSITIONAL WELDING, INTERPRETATION.
PROGRESS: 50%

SEASON 3 (Days 61-90): Pro Circuit.
(4G Overhead, 6G Pipe, Defect Inspection)

ADVANCED MANEUVERS:
OVERHEAD & PIPE MASTERY.
DEFECT ELIMINATION: ACTIVE.

SEASON 4 (Days 91-120): Masters Division.
(Remote Robotics, Fab Workflow, AWS Cert)

ELITE OPERATIONS:
REMOTE SYSTEMS & CERTIFICATION.
THREAT LEVEL: OPTIMAL.

ROADMAP COMPLETION: 0-100%

DATA SOURCE: TRAINING MATRIX DB. UPDATE INTERVAL: REAL-TIME. ACTIONABLE INTEL: LONG-TERM STRATEGY. THREAT LEVEL: STRATEGIC ADVANCEMENT

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SEASON 1: ROOKIE BOOTCAMP (DAYS 1-30)

OSHA SAFETY | MIG BASICS | 1G/1F FLAT POSITIONS

GAME 0: PUDDLE CONTROL



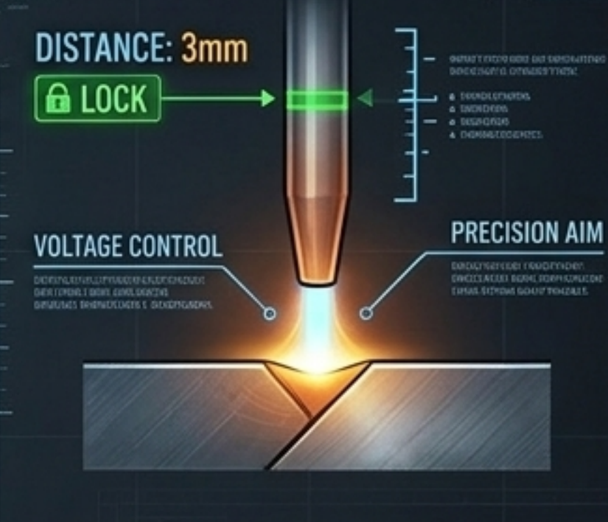
The absolute foundation. Maintain a molten puddle diameter of exactly 5mm (+/-0.5mm) with haptic feedback punishing heat input errors.

GAME 1: BEAD LINE



Draw a 200mm straight bead at a travel speed of exactly 5mm/s. Graded on straightness and speed variance.

GAME 2: ARC LENGTH



A vertical aim lab maintaining a strict 3mm distance to master voltage control.

BOOTCAMP PROGRESS: 0-100%

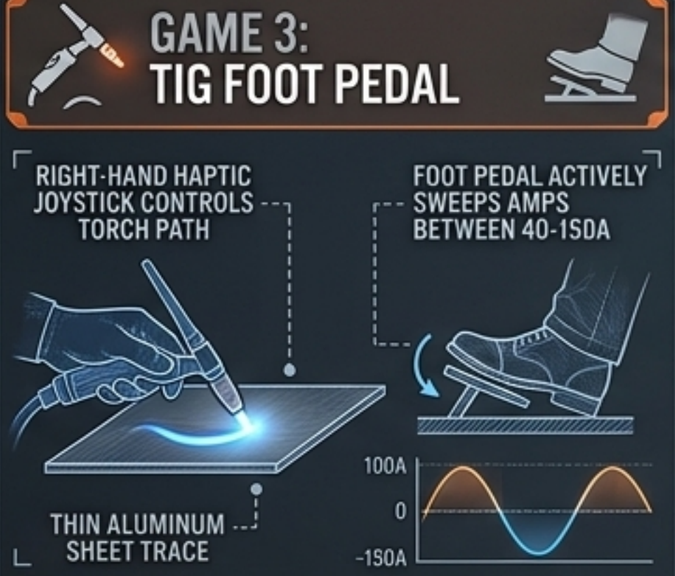
DATA SOURCE: TRAINING MATRIX DB. UPDATE INTERVAL: REAL-TIME. ACTIONABLE INTEL: FOUNDATIONAL MASTERY. THREAT LEVEL: LOW.

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SEASON 2: OPERATOR LEAGUE (DAYS 31-60)

STICK/TIG INTEGRATION | 2G HORIZONTAL / 3G VERTICAL | AWS A2.4 BLUEPRINTS

GAME 3: TIG FOOT PEDAL



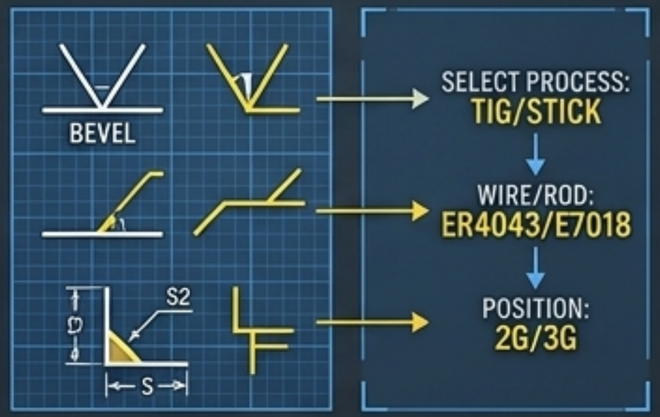
GRAVITY FORCE

⚠ HEAT INPUT: CRITICAL

Dual-tasking simulation. Right-hand haptic joystick controls torch path; foot pedal actively sweeps amps between 40-150A to control the puddle on thin aluminum.

SIMULATION STATUS

GAME 4: BLUEPRINT BLITZ



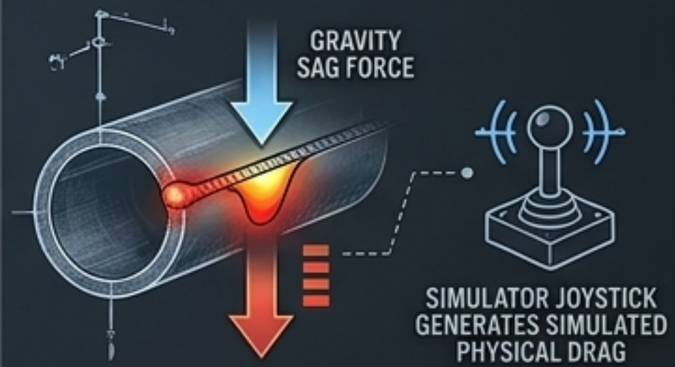
GRAVITY FORCE

⚠ DATA SPEED: REAL-TIME ANALYSIS

Speed-reading AWS weld symbols (bevel, chamfer, fillet) to instantly select the correct process, wire/rod, and position.

BLUEPRINT DECODING

GAME 5: POSITION CHALLENGE



⚠ POSITION COMPENSATION: ACTIVE

Introducing gravity sag. The simulator joystick generates simulated physical drag to teach compensation for 2G and 3G positions.

POSITION MASTERY

SEASON PROGRESS: 31-60%

DATA SOURCE: TRAINING MATRIX DB.. UPDATE INTERVAL: REAL-TIME. ACTIONABLE INTEL: POSITIONAL WELDING, INTERPRETATION. THREAT LEVEL: MODERATE.

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SEASON 3: PRO CIRCUIT (DAYS 61-90)

4G OVERHEAD | 6G PIPE MASTER | DESTRUCTIVE/VISUAL INSPECTION

GAME 6: OVERHEAD CHAOS



Inverted puddle drip management. Requires faster travel speeds and lower amps to prevent molten drip events.

GAME 7: 6G PIPE MASTER



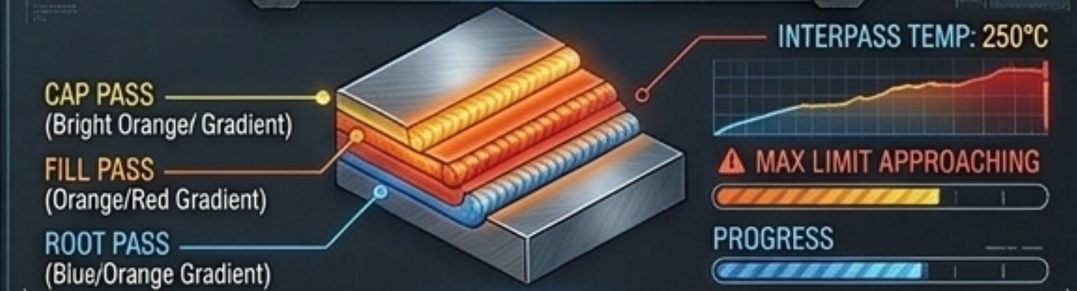
The ultimate physical test. Welding a pipe inclined at 45 degrees, requiring mirror-view operation for half the pass.

GAME 8: INSPECTION HUNT



Identifying porosity, slag inclusions, undercut, and crater defects from visual/X-ray photos (15 seconds per image).

GAME 9: MULTI-PASS BUILDER



Managing interpass temperatures while layering root, fill, and cap passes.

SEASON PROGRESS: 61-90%

DATA SOURCE: TRAINING MATRIX DB. UPDATE INTERVAL: REAL-TIME. ACTIONABLE INTEL: ADVANCED TECHNIQUES, INSPECTION. THREAT LEVEL: HIGH.

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SEASON 4: MASTERS DIVISION (DAYS 91-120)

REMOTE ROBOTIC TELEOPERATION | FABRICATION WORKFLOW | OFFICIAL CERTIFICATION

GAME 10: SIGNAL SURVIVAL

Teleoperation management. Overcoming 100-400ms latency, packet loss, and camera freeze, requiring an E-stop reaction of <0.8s.



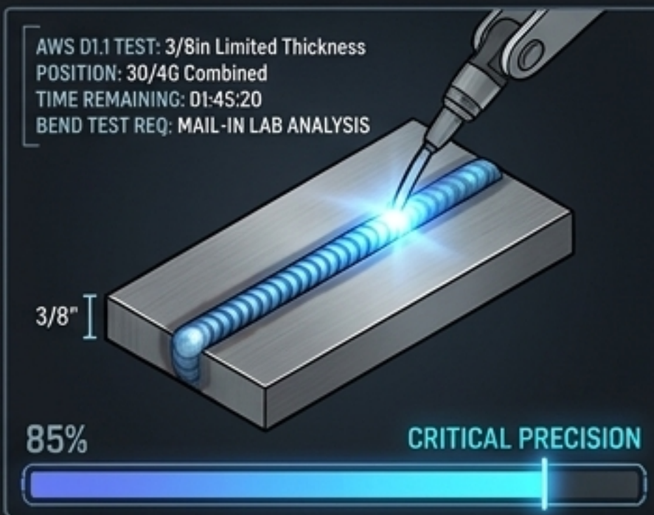
GAME 11: FABRICATION SIM

An RTS-style challenge managing cut lists, weld sequences, time/cost estimation, and trip planning to build a small trailer.



GAME 12: MASTER WELD-OFF

The final crucible. A timed AWS D1.1 Limited Thickness 3/8in test coupon simulation with mail-in lab bend test requirements.



SEASON PROGRESS: 91-120%

DATA SOURCE: COMMAND LINK DB. UPDATE INTERVAL: REAL-TIME. ACTIONABLE INTEL: TELEOPERATION, FABRICATION, CERTIFICATION. THREAT LEVEL: EXTREME.

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HIGH-FIDELITY TACTILE IMMERSION

The Simulator Booth. Building true muscle memory through state-of-the-art haptic environments.

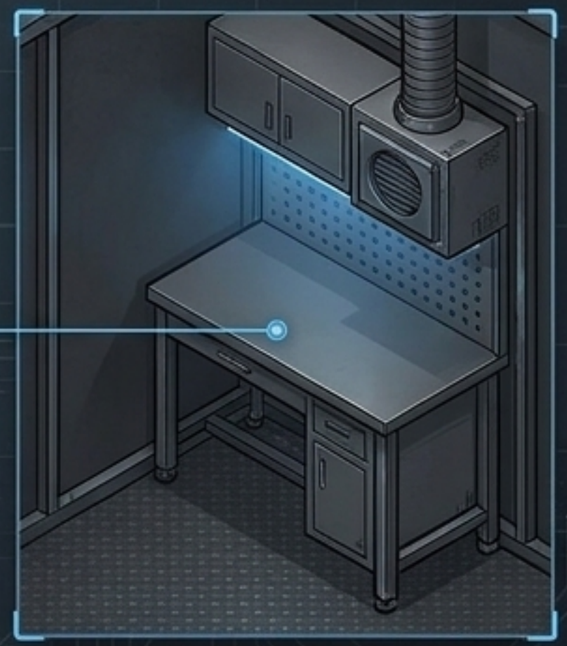
CONTROLS: HAPTIC-FEEDBACK JOYSTICK TORCH REPLICATING REAL-WORLD DRAG + TIG FOOT PEDAL FOR AMP SWEEPING.

IMMERSION: VR HEADSET FOR FULL 3D SPATIAL AWARENESS (ESSENTIAL FOR 6G PIPE) + INTEGRATED AUTO-DARKENING VARIABLE SHADE MECHANICS.

ENVIRONMENT: SMALL FOOTPRINT WORKSTATION FEATURING INTEGRATED FUME EXTRACTION SIMULATION.







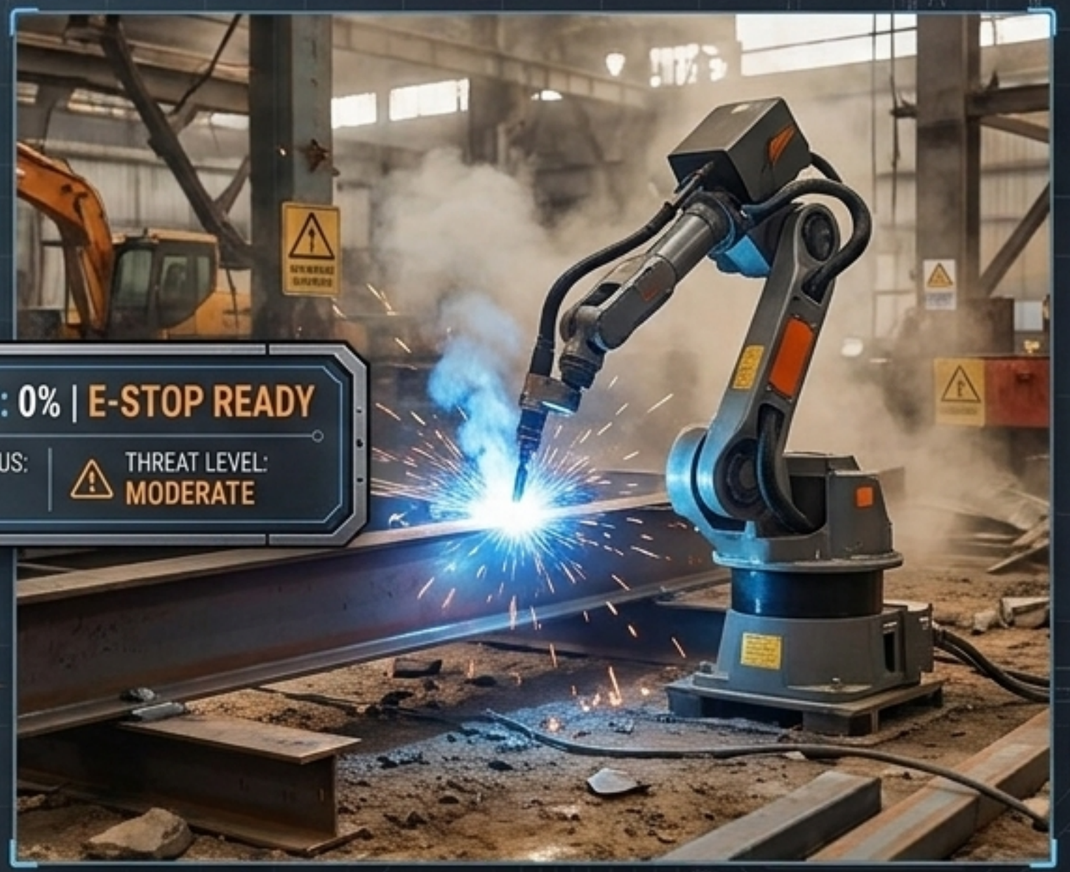
DATA SOURCE: SIMULATOR TELEMETRY DB. UPDATE INTERVAL: REAL-TIME. ACTIONABLE INTEL: HAPTIC FEEDBACK, SPATIAL AWARENESS, ENVIRONMENT SIMULATION. THREAT LEVEL: MINIMAL.

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THE REMOTE ROBOTIC FRONTIER

The Tesla Model for Heavy Industry. Platinum operators are trained to control robotic welders globally. Mastering latency, packet loss, and sub-0.8s E-stop reactions.





LATENCY: 250ms | PACKET LOSS: 0% | E-STOP READY

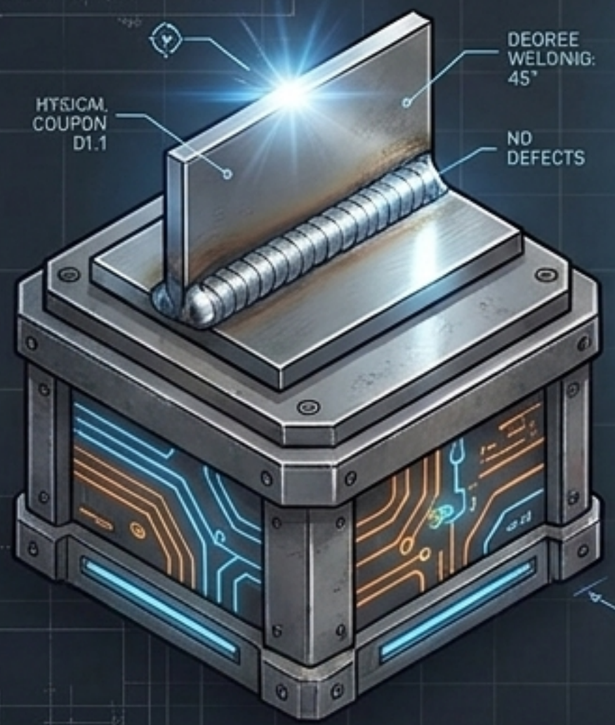
LINK STABILITY: OPTIMAL | OPERATOR STATUS: ENGAGED | THREAT LEVEL: MODERATE

DATA SOURCE: COMMAND LINK DB. UPDATE INTERVAL: REAL-TIME. ACTIONABLE INTEL: TELEOPERATION, LATENCY MANAGEMENT, GLOBAL FABRICATION. THREAT LEVEL: MODERATE.

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DAY 120: CHAMPIONSHIP & CERTIFICATION

The culmination of rigorous training and competitive performance.
Merging physical mastery with global validation.





THE LIVE TEST

AWS D1.1 Limited Thickness (3/8in) qualification coupon under tournament pressure.
100% visual inspection by certified proctors.

THE VALIDATION

Physical mail-in lab simulation for destructive guided root and face bend tests. Passing criteria: No discontinuities exceeding specified dimensions.

THE RESULT

A fully documented, OSHA-compliant Certified Welder Qualification Record recognized globally. Digital credentials and physical certificate issued.

DATA SOURCE: CHAMPIONSHIP DATABASE & VALIDATION LABS. UPDATE INTERVAL: POST-CERTIFICATION. ACTIONABLE INTEL: GLOBAL CREDENTIALING, OSHA COMPLIANCE, SKILL CERTIFICATION. THREAT LEVEL: SECURE.

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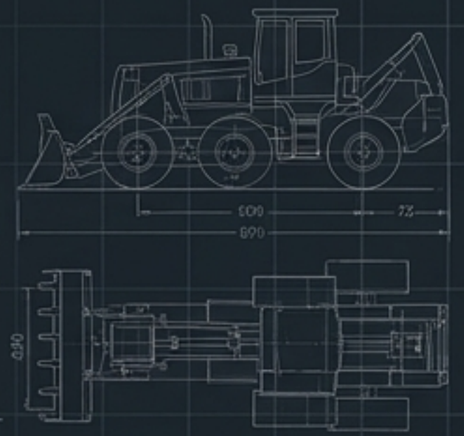
SEAMLESS HIRING HUB INTEGRATION

Transforming gameplay metrics into a frictionless corporate recruiting pipeline.



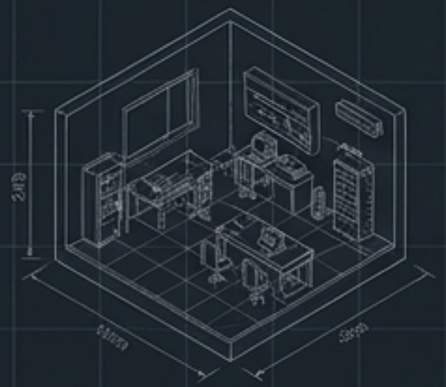
PLAYER TELEMETRY

Gamertag:	[Steel_Spartan_01]
Tier:	[Platinum]
XP:	[125,000]
Best Position:	[Remote Ops]
Safety Score:	[99.8%]



AUTOMATED API WEBHOOKS

player.registered -> game.completed -> tier.achieved



GOHIGHLEVEL (GHL) CRM INTEGRATION

OPPORTUNITY CREATED

As soon as a student achieves Platinum [Job Ready/Remote Ops], an automated opportunity is created and a corporate hiring manager is instantly pinged.

REAL-TIME STATUS: MANAGER NOTIFIED

HIRING PIPELINE VELOCITY



DATA SOURCE: GAMEPLAY METRICS & WEBHOOKS. UPDATE INTERVAL: INSTANTANEOUS. ACTIONABLE INTEL: AUTOMATED RECRUITING, TALENT ACQUISITION, REMOTE OPS PLACEMENT. THREAT LEVEL: SECURE.

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THE ARCHITECTURE OF A MODERN MASTER

From a 5mm puddle to a 400ms lag spike. It's exactly the same signal.
By gamifying focus, we've built a scalable engine to forge master craftsmen.



GAME 0: 5MM PUDDLE CONTROL

SIGNAL INTEGRITY ANALYTICS

BIO-METRIC FOCUS INDEX



GAME 10: REMOTE LATENCY TELEOPERATION

BIO-METRIC FOCUS INDEX

NEURAL TELEMETRY STREAM

SIGNAL INTEGRITY ANALYTICS

SCALABLE MASTERY ENGINE

DATA SOURCE: CORE SIGNAL ANALYTICS & GAMIFICATION ENGINE. UPDATE INTERVAL: REAL-TIME NEURAL SYNC. ACTIONABLE INTEL: FOCUS TRANSFER, LATENCY ADAPTATION, MASTERY SCALABILITY. THREAT LEVEL: SECURE.

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120 DAYS. GAMER TO CERTIFIED WELDER. READY TO DEPLOY.



Hub.esportsleaguehub.com | [Deploy the Future]

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