



Strategic Initiative White Paper

for the United States Shipbuilding Academy (USSA)

A Maritime Workforce Solution for America's Shipbuilding Crisis

Submitted by:

Planting Healing

501(c)(3) Nonprofit Organization

Prepared for:

U.S. Navy Leadership

U.S. Maritime Industrial Base Shipyards & Industry Partners

Regional Economic & Workforce Development Leaders

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On behalf of Planting Healing, a 501(c)(3) nonprofit organization, I respectfully submit the enclosed white paper titled “*A Maritime Workforce Solution for America’s Shipbuilding Crisis*” for your review and consideration.

The United States Navy’s current and projected shipbuilding requirements underscore a well-documented challenge across the maritime industrial base: a critical and growing shortage of skilled tradespeople essential to construction, maintenance, and repair. While demand for new vessels and fleet modernization continues to increase, workforce capacity remains a primary constraint to execution.

At the same time, global shipbuilding dynamics—particularly the industrial capacity of allied shipbuilders such as HD Hyundai Heavy Industries—present emerging opportunities to supplement U.S. production through modular construction approaches. These approaches, however, introduce new workforce integration challenges within U.S. shipyards such as Huntington Ingalls Industries.

In response to both domestic workforce shortages and evolving global production models, Planting Healing proposes the shipyard-based United States Shipbuilding Academy “USSA,” designed to function as both an accredited educational institution and an operational production facility. This model integrates paid apprenticeship, industry-aligned instruction, and real-world shipbuilding output to rapidly expand the pipeline of journeyman-level tradespeople while supporting modular ship integration and final assembly operations.

The Academy’s earn-while-you-learn structure allows students to contribute productively to the industrial base while completing a four-year apprenticeship, earning credentials, wages, and long-term financial assets. The proposed model is intended to complement existing shipyard operations by serving as both an auxiliary workforce and a strategic integration layer within a modernized, globally distributed shipbuilding ecosystem.

We respectfully request the Navy and shipyards’ consideration of moral and strategic support, as well as exploration of potential financial or programmatic partnership opportunities to pilot this workforce model. With Navy and shipyard engagement, this initiative has the potential to strengthen the maritime industrial base, reduce workforce bottlenecks, and enhance long-term fleet readiness.

A Maritime Workforce Solution for America's Shipbuilding Crisis

A White Paper Requesting Strategic Support for the United States Shipbuilding Academy

Submitted by:

Planting Healing

Proposed United States Shipbuilding Academy (USSA)

501(c)(3) Nonprofit Corporation

Executive Summary

The United States Navy is entering a historic period of fleet expansion and modernization. New naval construction initiatives—paired with an already backlogged shipbuilding industrial base—have revealed a critical national vulnerability: **the severe shortage of skilled shipbuilding labor**.

Despite record contract awards and long-term demand signals, U.S. shipyards lack the trained workforce necessary to execute current and future construction timelines. This shortage is not cyclical; it is structural. Traditional workforce pipelines cannot produce skilled journeyman-level tradespeople at the scale or speed required.

This white paper proposes the establishment of the United States Shipbuilding Academy as a scalable, cost-effective solution to the workforce constraint. The Academy will operate as both an educational institution and an operational shipbuilding facility, producing skilled workers *and* industrial output simultaneously.

We respectfully request the Navy's and shipyard's **moral support, strategic partnership, and financial investment** to pilot this model as a national workforce solution.

Confidentiality Notice

This document contains proprietary information, trade secrets, and/or confidential commercial and financial information. It is submitted with the expectation that it will be used solely for evaluation and strategic consideration and is not to be publicly disclosed without prior authorization.

Implementation Plan

To ensure rapid deployment and measurable impact, the United States Shipbuilding Academy (USSA) will be launched through a phased pilot program on the U.S. Gulf Coast.

Phase 1: Site Selection & Partnership Alignment (0–6 Months)

- Identify and secure an underutilized or dormant Gulf Coast shipyard facility
- Establish initial partnerships with regional shipyards and industry stakeholders
- Conduct facility assessment and equipment inventory
- Finalize curriculum alignment with industry needs

Phase 2: Facility Activation & Program Setup (6–12 Months)

- Retrofit yard into dual-purpose training and production facility
- Install and operationalize equipment (existing + partner-contributed)
- Hire instructional staff, supervisors, and operations leadership
- Enroll first cohort of 100–200 apprentices

Phase 3: Initial Production & Workforce Deployment (12–24 Months)

- Begin live production of ship components and modules
- Deploy apprentices into structured work rotations
- Establish workforce pipeline agreements with partner shipyards
- Validate training-to-productivity model

Phase 4: Scale & Replication (24+ Months)

- Expand enrollment to 1,000+ participants
- Increase production output capacity
- Replicate model across additional Gulf Coast locations
- Integrate fully into regional and national shipbuilding workforce strategy

Emerging Strategic Context: Global Modular Shipbuilding & Workforce Integration

The global shipbuilding industry is increasingly adopting modular construction models, wherein large sections of vessels are fabricated in one location and assembled in another. Allied nations with advanced shipbuilding capacity—particularly HD Hyundai Heavy Industries—have demonstrated the ability to produce high-quality ship modules at significantly greater speed and scale than traditional U.S. shipyard production alone.

As the United States explores options to strengthen its maritime industrial base and meet urgent naval demand, a hybrid production model is emerging:

- Overseas fabrication of non-sensitive ship modules
- **Domestic final assembly, integration, and certification** at U.S. shipyards such as Huntington Ingalls Industries

While this model offers a path to accelerate ship production, it introduces a new and critical constraint:

The United States currently lacks a workforce specifically trained to receive, integrate, and complete foreign-fabricated ship modules at scale.

This integration gap includes:

- Structural alignment and module joining
- System interface completion (pipe, electrical, HVAC)
- Naval compliance inspection and certification
- Digital model interpretation and translation to physical assembly
- Port-to-yard logistics coordination for large modules

Without a workforce trained for these functions, the benefits of modular shipbuilding cannot be fully realized.

Advanced Manufacturing Integration: Human–Robotic Workforce Model

The Next Evolution of the Maritime Industrial Base

In addition to workforce shortages, the U.S. shipbuilding industry faces increasing pressure to modernize its production methods to remain globally competitive. Advances in robotics and artificial intelligence—particularly in industrial humanoid systems—present a significant opportunity to augment human labor, improve safety, and increase production throughput.

Companies such as Figure AI, led by Brett Adcock, are developing humanoid robotic systems designed to operate in industrial environments alongside human workers.

The United States Shipbuilding Academy proposes to serve as an early-stage training and integration environment for human–robot collaboration within shipbuilding operations.

Human–Robot Workforce Model

The USSA model is built on a human-first approach, where robotics are deployed to:

- Enhance worker productivity
- Reduce physical strain and injury
- Perform repetitive or hazardous tasks
- Enable 24/7 operational continuity

Robots are not a replacement for skilled trades, but a force multiplier that allows human workers to focus on high-skill, high-value activities .

Application in Shipbuilding Operations

Within the Academy and partner shipyards, robotic systems may support:

- Repetitive welding and fabrication tasks
- Material handling and positioning
- Confined-space operations
- Inspection and quality assurance support
- Digital data capture and workflow tracking

Workforce Implications

USSA will train students not only in traditional trades, but also in:

- Human–robot collaboration
- Robotic system supervision and tasking
- Basic robotic maintenance and troubleshooting
- Digital workflow integration

This ensures that graduates are prepared for the next generation of shipbuilding environments, where human skill and robotic capability operate in tandem.

Strategic Value to the Maritime Industrial Base:

- Increased production efficiency without reducing workforce
 - Improved safety outcomes in hazardous environments
 - Enhanced surge capacity during national emergencies
 - Alignment with advanced manufacturing and defense innovation priorities
-

The Problem: A Critical Shipbuilding Labor Shortage

Workforce Reality

- The U.S. shipbuilding industry faces a projected shortage of **170,000–250,000 skilled workers over the next decade**
- Core shortages include:
 - Welders
 - Pipefitters
 - Shipfitters
 - Marine electricians
 - Industrial maintenance trades
- Many shipyards report:
 - Persistent unfilled positions
 - High first-year attrition
 - An aging workforce nearing retirement
 - Multi-year delays in workforce readiness

Impact on Naval Readiness

- Construction delays
- Cost overruns
- Reduced fleet availability
- Industrial base fragility
- Inability to surge production in times of national need

The Navy’s shipbuilding capacity is now constrained **not by funding or demand—but by people.**

Proposed Solution: A Shipyard-Based Maritime Trades & Shipbuilding Academy

Overview

The proposed United States Shipbuilding Academy (USSA) is a 501(c)(3) nonprofit workforce institution that integrates:

- Registered apprenticeship
- Accredited technical education
- Real-world shipyard production
- Earn-while-you-learn employment
- Long-term workforce retention

The Academy is designed to function as an **auxiliary workforce pipeline** supporting shipyards while producing fully qualified journeyman-level tradespeople.

Workforce Model Philosophy: A Production-Based Alternative to Short-Term Training Programs

The United States Shipbuilding Academy (USSA) is intentionally designed as a **long-term, production-integrated apprenticeship system**, rather than a short-cycle “accelerated training” model.

While several existing workforce initiatives—such as accelerated maritime training programs in Hampton Roads and similar regional efforts—have contributed to entry-level development, industry stakeholders continue to report persistent challenges related to **skill depth, on-the-job readiness, and long-term workforce retention**. These challenges are especially evident in complex shipbuilding environments where precision, compliance, and safety standards require sustained, supervised experience.

USSA is structured to address this gap by prioritizing **extended-duration, production-embedded training** rather than compressed certification models. The Academy operates on the principle that skilled trades are developed through **time, repetition, and real industrial exposure**, not short-course acceleration alone.

Gulf Coast Shipyard-Based Academy Model

USSA proposes the development of a **dedicated shipyard-based training and production campus on the U.S. Gulf Coast**, utilizing underutilized or dormant shipyard capacity where feasible.

Rather than functioning solely as a classroom institution, the Academy will operate as a **fully functional shipbuilding and manufacturing environment**, producing real ship components and modules in coordination with regional shipyard partners.

Key structural elements include:

- Conversion of underutilized yard space into a **dual-purpose training and production facility**
- Establishment of **assembly-line-style module fabrication zones**
- Shared utilization of existing regional shipyard tooling and equipment where available
- Coordination with Gulf Coast shipyards to support shared production workflows and workforce development

This model creates a distributed industrial partnership ecosystem, where multiple shipyard stakeholders contribute equipment, tooling, and technical guidance to strengthen regional capacity. In many cases, existing surplus or underutilized equipment may be repurposed or redeployed into the Academy environment, providing tax write-offs and tax relief for the stakeholders.

Earn-While-You-Learn Workforce Structure

USSA operates on an **inclusive, no-barrier entry model**, where students and apprentices may enter training pathways beginning in secondary education and continuing through post-secondary and adult learners. These students may choose any degree path in the shipbuilding industry from concept to completion.

Participants are assigned to live production work aligned with shipyard components and modules, working approximately **25 hours per week in rotating shifts** to support continuous operations.

Key features include:

- Paid apprenticeship model beginning at entry level
- Integration of structured academic coursework supported by AI-enabled learning systems
- Long-term 4-year training pathways leading to journeyman-level qualification
- No exclusion based on financial capacity to participate

Apprentices are compensated for productive labor while simultaneously completing structured academic and technical instruction.

Self-Sustaining Financial and Production Model

The Academy operates as a **hybrid workforce and production entity**, functioning similarly to a Tier-1 supplier within the maritime industrial base.

Under this model:

- Student labor is tied directly to production output
- A portion of production value supports instructional costs, equipment, and facility operations
- Apprenticeship wages are structured within a cost-recovery framework similar to contractor billing systems

This structure reduces reliance on traditional workforce grant limitations and aligns training directly with measurable industrial output.

Preliminary Financial Model

The United States Shipbuilding Academy is designed to operate as a hybrid workforce and production system, reducing reliance on traditional funding models while generating sustainable operational revenue.

Startup Investment (Estimated Range)

- Facility acquisition/lease and retrofit: \$10M–\$30M
- Equipment installation and activation: \$10M–\$25M
- Initial operations and staffing: \$5M–\$15M

Estimated Total Startup Range: \$25M–\$70M

Operating Model

- Apprentices are compensated for productive labor
- Production output is billed similarly to subcontracted shipyard work
- Revenue supports:

- Wages
- Training costs
- Facility operations

Cost Efficiency

Compared to traditional training programs:

- Lower cost per skilled worker produced
- Immediate contribution to industrial output
- Reduced onboarding costs for shipyards

This model aligns workforce development directly **with measurable economic and production value.**

Workforce Capacity and Operational Scale

A single Gulf Coast facility is projected to support **large-scale rotational staffing models**, potentially accommodating over 1,000 participants per site across staggered shifts.

This enables:

- 24/7 operational capability
- Maximized equipment utilization
- Increased throughput of ship components and modules
- Continuous workforce development without production downtime

Long-Term Educational Pipeline

In addition to adult apprenticeship programs, USSA includes a **secondary education-to-workforce pathway**, allowing students to begin structured training as early as 9th grade.

This pathway integrates:

- Technical education
- Hands-on shipyard production experience
- Academic coursework aligned with industry standards
- Direct transition into full-time shipyard employment upon graduation

This creates a continuous pipeline of trained workers who enter the workforce with **substantial hands-on experience and industry readiness.**

Strategic Positioning

This model is designed to function as a **scalable, production-integrated alternative to traditional short-term workforce training programs**, offering a more sustained and industrially aligned approach to workforce development in the maritime sector.

By embedding training directly within active production environments, USSA provides both:

- Immediate workforce contribution
- Long-term skilled labor development

Governance & Oversight Structure

USSA will operate under a structured governance model to ensure accountability, quality, and alignment with national workforce and defense priorities.

Governance Framework

- Board of Directors including:
 - Shipbuilding industry representatives
 - Workforce development experts
 - Education and training leaders
- Advisory participation from maritime and defense stakeholders

Operational Oversight

- Executive leadership responsible for daily operations
- Program managers overseeing training and production integration
- Safety and compliance officers embedded within operations

Compliance Alignment

- NCCER training standards
- OSHA safety requirements
- Alignment with U.S. Navy (NAVSEA) quality expectations

This structure ensures USSA maintains high standards of training, safety, and operational integrity.

How the Model Works

1. Dual-Purpose Facility

- Operates as:
 - A school
 - A functioning shipbuilding and industrial production facility
- Produces:
 - Maritime components
 - Fabricated assemblies
 - Sub-systems used by shipyards

Students are workers. Workers are students.

2. Earn-While-You-Learn Apprenticeship

- Students enroll beginning in 9th grade and up
- No student is turned away due to inability to pay
- Two pathways:
 - Tuition-paying students
 - Work-to-earn students (25 hours/week)
- Work-to-earn students:
 - Paid at least minimum wage
 - Complete online and onsite coursework

3. Around-the-Clock Training Capacity

- Facility operates **24/7**
- Training in **5-hour rotating shifts**
- 3–4 shifts per day
- Maximizes:
 - Equipment utilization
 - Training throughput
 - Production output

4. Industry-Aligned Curriculum

- NCCER-based trade instruction
- AI-enhanced learning platforms used by leading trade schools
- Mandatory:
 - OSHA 10
 - Trade-specific safety credentials
- All students complete a **business and entrepreneurship curriculum**

Graduates are trained not only as workers—but as future leaders, supervisors, and contractors.

Credentialing & Accreditation Pathways

USSA will provide nationally recognized credentials aligned with industry and federal workforce standards.

Certifications & Credentials

- NCCER trade certifications
- OSHA 10 and advanced safety credentials
- Trade-specific certifications (welding, electrical, pipefitting, etc.)

Apprenticeship Registration

- Alignment with U.S. Department of Labor Registered Apprenticeship Programs

Academic Pathways

- Opportunities for:
 - Technical diplomas
 - Associate-level education pathways (via partnerships)

Graduates will exit the program as **fully qualified, credentialed, and work-ready tradespeople**.

5. Modular Ship Integration Workforce Pipeline

USSA will establish specialized training tracks aligned to modular shipbuilding operations, including:

1. Structural Module Integration

- Precision alignment and joining of large hull sections
- Advanced welding techniques aligned with naval standards

2. Outfitting Completion

- Pipefitting and mechanical system integration
- Electrical and control system connections
- HVAC and auxiliary system installation

3. Naval Quality Assurance & Compliance

- NAVSEA-aligned inspection protocols
- Non-destructive testing (NDT)

- Documentation and certification processes

4. Digital Shipbuilding & Model Interpretation

- 3D model navigation and interpretation
- Digital twin integration
- Translation of design data into field execution

5. Module Logistics & Staging

- Heavy lift coordination
- Port-to-yard transfer operations
- Module sequencing and staging for assembly

Expanded Role of the United States Shipbuilding Academy (USSA)

In addition to serving as a workforce training institution and production facility, the United States Shipbuilding Academy is designed to function as:

A Workforce Integration Platform supporting modular shipbuilding across a globally distributed industrial base.

USSA will prepare workers not only for traditional shipyard roles, but specifically for:

- Integration of pre-fabricated ship modules
- Completion of partially outfitted systems
- Quality assurance aligned with U.S. Navy standards
- Coordination between digital ship models and physical assembly

This positions the Academy as a critical enabling component of future shipbuilding strategies involving allied production partners.

Outcomes for the Navy/Shipyards

Immediate Benefits

- Expanded skilled labor pipeline
- Reduced shipyard hiring pressure
- Lower training and onboarding costs
- Increased industrial base resilience
- Workforce prepared for modular ship integration

- Reduced delays in module assembly and system completion
- Improved coordination between global fabrication and domestic assembly

Long-Term Benefits

- Consistent supply of journeyman-level tradespeople
- Improved schedule reliability
- Higher workforce retention
- Enhanced surge capacity during national emergencies
- Stronger public-private workforce partnerships
- Enables adoption of allied modular shipbuilding partnerships
- Strengthens resilience through diversified production models
- Positions U.S. shipyards to scale faster in response to demand
- Establishes a repeatable workforce model for future hybrid shipbuilding program

Additional Benefits

- Reduced injury rates in high-risk shipyard tasks
- Increased productivity per worker
- Early adoption of advanced manufacturing technologies
- Creation of a future-ready maritime workforce

Why This Model Is Different

Traditional Training	USSA Model
Delayed productivity	Immediate contribution
High attrition	Paid, invested learners
Limited scale	24/7 operations
Theory-heavy	Production-based
No asset building	Retirement + financial literacy
No alignment with global modular shipbuilding	Directly supports international modular production and domestic integration
No exposure to advanced manufacturing or robotics	Integrated human–robot workforce training aligned with next-generation shipbuilding

This model **compresses the time between recruitment and productivity** while improving workforce quality and retention.

Risk Considerations & Mitigation Strategies

USSA recognizes potential concerns associated with implementing a new workforce and production model and proactively addresses them below.

Workforce Quality Concerns

Risk: Perception that trainees may not meet industry standards

Mitigation:

- Extended 4-year training model
- Supervised production environments
- Industry-aligned certification requirements

Industry Competition Concerns

Risk: Perception that USSA competes with existing shipyards

Mitigation:

- Operates as an auxiliary workforce pipeline
- Produces components that support—not replace—shipyard work
- Aligns directly with shipyard workforce needs

Safety & Liability Concerns

Risk: Apprentices working in production environments

Mitigation:

- Strict supervision protocols
- OSHA-compliant safety training
- Phased skill progression before critical task assignment

Robotics Integration Concerns

Risk: Fear of workforce displacement

Mitigation:

- Human-first model
- Robotics used only for augmentation
- Focus on safety and productivity enhancement

Student Retirement & Long-Term Retention Strategy

Upon enrollment:

- Each student receives a **retirement asset account**
- Managed by a separate asset management entity
- Funded through:
 - Wages
 - Production revenue
 - Philanthropic and public investment
- Financial literacy embedded throughout training

This approach encourages **long-term workforce attachment** to the maritime industrial base.

Partnership Request

To initiate this model, USSA seeks to establish a pilot training program in partnership with the U.S. Navy and Gulf Coast shipyards, with support from private sector partners.

Requested Support

1. Strategic & Institutional Support

- Recognition of USSA as a workforce development solution
- Inclusion in shipbuilding workforce planning discussions
- Endorsement for pilot implementation

2. Site Collaboration

- Identification of a Gulf Coast shipyard facility (active or underutilized)
- Temporary access, lease, or shared-use agreement
- Equipment contribution, lease, or redeployment where feasible

3. Financial Support

- Startup funding for training program
- Eligibility for:
 - Workforce development grants
 - Industrial base expansion funding
 - Production-linked workforce initiatives

4. Workforce Alignment

- Input on curriculum and skill requirements
- Pathways for graduate placement
- Integration with shipyard subcontractor workforce needs

Economic Impact

The establishment of USSA on the Gulf Coast will generate significant economic and industrial benefits.

Direct Impact

- Creation of 1,000+ workforce participants per facility
- Increased shipyard productivity and output
- Reduction in labor shortages

Indirect Impact

- Revitalization of underutilized shipyard infrastructure
- Increased local economic activity
- Strengthened regional workforce ecosystem

Strategic Impact

- Enhanced national shipbuilding capacity
- Improved industrial base resilience
- Long-term workforce sustainability

Conclusion

The United States Shipbuilding Academy is not simply a training program—it is a workforce production system designed to restore the capacity of the American shipbuilding industrial base.

America's naval strength depends not only on ships—but on the people who build, assemble, and sustain them.

As global shipbuilding evolves toward modular and distributed production models, the United States must not only expand its workforce—but modernize it. The ability to integrate allied-built ship modules into U.S. Navy-compliant vessels represents both a strategic opportunity and a workforce challenge.

The United States Shipbuilding Academy offers a scalable, cost-effective, and mission-aligned solution to both. By serving as a workforce training institution, production facility, and integration platform, USSA directly addresses the labor shortages constraining today's shipyards while enabling the shipbuilding models of tomorrow.

With Navy and shipyard partnership, and with support from private sector partners, this model can be rapidly deployed to strengthen readiness, restore capacity, and secure the future maritime workforce.

Contact

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United States Shipbuilding Academy (USSA) Workforce Pipeline Model



RECRUITMENT

USSA ACADEMY

- High School Graduates
- Veterans Transitioning
- Underemployed Workforce
- Community College Transfers
- Career Changers



UNITED STATES SHIPBUILDING ACADEMY

Dual-Purpose Maritime Workforce Center

- Trade Classrooms
- Welding & Fabrication Labs
- Pipefitting & Mechanical Systems
- Electrical Systems Training
- Digital / AI Learning Platforms

ROTATING SHIFT SCHEDULE

Shift 1 8 AM - 1 PM

- 5-Hour Training Shifts
- 3 to 4 Shifts Por Day
- Continuous Operations

PAID APPRENTICESHIP TRAINING

- NCCER Trade Curriculum
- Dept. of Labor Apprenticeship
- OSHA Safety Certifications.
- Supervised Hands-On Fabrication



INDUSTRIAL PRODUCTION TRAINING



STRONGER MARITIME INDUSTRIAL BASE

- 24/7, Earn-While-You-Learn Apprenticeship Pipeline
- Dual-Training & Production Focus
- Rapid Shipyard Workforce Development