

Virtual Spray Paint Training System

NSRP SP&C Panel Virtual Meeting, June 24, 2020

NSRP Joint Project – SP&C & WFD Panels

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VSPTS: Virtual Paint (VP)

Virtual Paint (VP) is a Virtual Reality (VR) training system that realistically simulates the application of paint droplets based on spray gun, coating material, parts, and spray environments. The VP paint engine provides performance feedback for film build, spray technique, time, and cost.

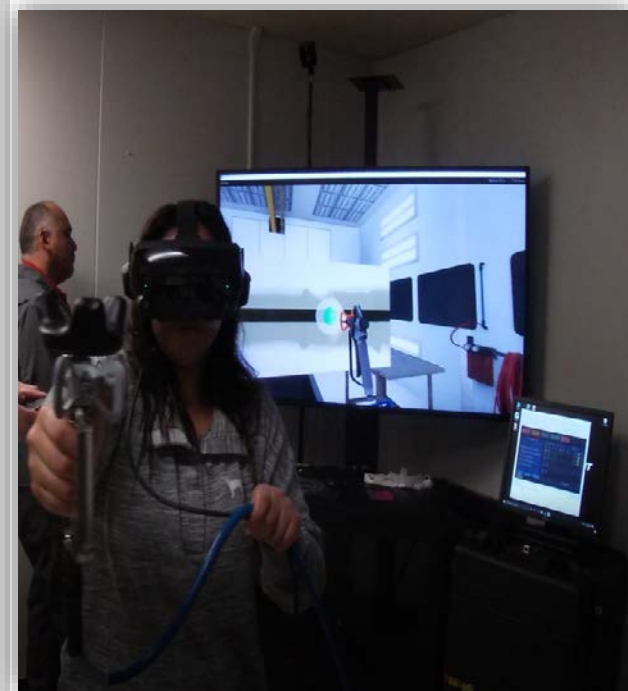
VP Training Advantages:

- ✓ Standardized Training Process
- ✓ Eliminate Resource Consumption
- ✓ Safe Classroom Learning
- ✓ Build Self-Confidence
- ✓ Non-biased Performance Results
- ✓ Easy Classroom Training
- ✓ Real-time Performance Results
- ✓ Self-Paced Training

NSRP | National Shipbuilding Research Program

Title: Virtual Painter Training

Technology Areas: Spray Finishing Education



Painter	Start
Instructor	2019/12/02 4:36:17 AM
Lesson	Total Time
Flat Panel	49 secs
Part	Coatings
2. Medium Practice Panel	1
Score	Cost
99.77	\$10.06

VIRTUAL PAINT PRODUCTS
Ranking 1 of 1 | Top Score: 99.77 | Avg Score: 99.77

Coating	Score	Cost	Secs	Ozs	Spray Secs	Ozs Part	TE	HE	Pulls	Reworks
1. Topcoat Red	99.77	10.06	49	5.15	20.60	2.99	% 58	% 64	23	0
	Good	Low	High	Mis Avg	Mis Min	Mis Max	DFP	Speed	Pitch	Arc
1. Topcoat Red	% 99	% 0	% 0	3.75	1.45	7.93	12.56in	2.80ts	14.25	12.98

Lesson Plan	Total Time
Lab 2	49 secs
Score	Cost
99.77	\$10.06

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VSPTS: VP3D Ship – Spray Finishing

VPP and NASSCO have been collaborating for several months to develop an industry leading educational VR system that meets training needs of the shipbuilding industry.

Project Development Objectives:

- ✓ Easy-to-Use Training System
- ✓ Simulate Ship Environment
- ✓ Simulate Airless Spray Application
- ✓ Simulate Marine Coatings
- ✓ Engaging to Novice and Experienced Painters
- ✓ Realistic Feedback
- ✓ Performance Monitoring

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VSPTS: VP3D Ship – Spray Environment

The VPP development team implemented a sprayable model of a garage storage spray environment. To achieve acceptable VR performance and simplified education structure the room is divided into 30 paintable areas.

Ship Spray Environment:

- ✓ Paintable Ceiling Lessons (6)
- ✓ Paintable Deck Lessons (7)
- ✓ Paintable Wall Lessons (15)
- ✓ Paintable Pipe Lessons (2)



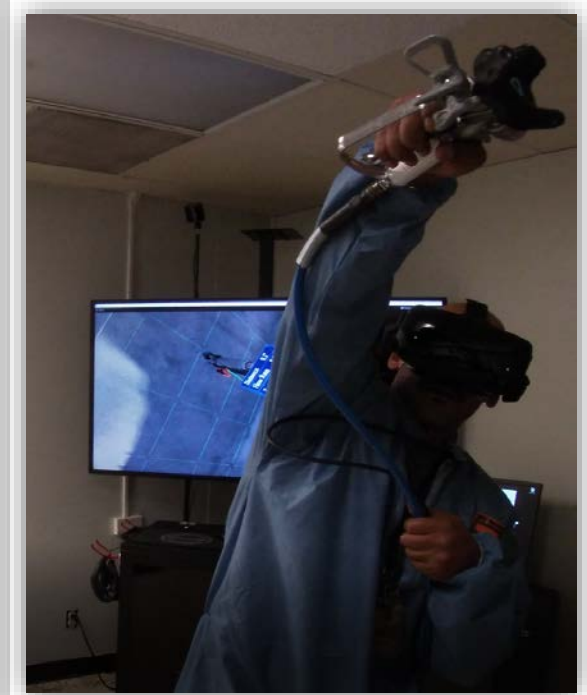
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VSPTS: VP3D Ship – Implementation & Evaluation

The training system was delivered to NASSCO along with three days of instructor training and painter feedback.

NASSCO VP Training Evaluation:

- ✓ Instructor Training
- ✓ Design New Painter Program
- ✓ Design Experienced Painter Program
- ✓ Conduct Training Sessions
- ✓ Evaluate Program Value



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Virtual Spray Paint Training System

Surface Preparation & Coatings

Questions

