

## Virtual Spray Paint

### Introduction

In the past, training painters typically involved costly, time consuming, and labour intensive in-booth training. Training was expensive. VirtualPaint provides realistic, hands-on painter training which can be conducted in a classroom. VirtualPaint allows the user to view and interact with real spray application equipment, while simulating the actual application process onto a virtual surface. By using this technology, no hazardous emissions or wastes are produced through the training process, creating a much safer environment for students and trainers alike.

Instructors can provide effective training demonstrations, address spray gun setup and proper application in front of a class of any size. Following the demonstrations, instructors can watch students practice what they have learned. During this session, instructors can identify the abilities and the levels of understanding that each student demonstrates by using a combination of observation and the inbuilt VirtualPaint performance measures and reports. This allows for accurate and meaningful feedback and assessment for the students.



VirtualPaint is currently being used to train painters at all levels – from those with no experience to those at advanced levels – and in a variety of settings including:

- TAFE & Technical Colleges
- High Schools & Trade Training Centres
- Trade Organisations
- Industrial Painting Operations
- Military Painting Operations
- Coatings Manufacturers
- Collision Repair Industry

### Just some of the Benefits...

VirtualPaint provides a huge range of benefits when it comes to training painters. Some of the feedback received from customers includes:

- **Increased Training Value** including: learning to optimise equipment set-up and spray techniques, improved film thickness consistency, improved transfer efficiencies and reduced re-work times and costs.
- **Elimination of Hazardous Emissions & Waste** which provides both safety and environmental benefits.
- **Sustainable Training Costs Savings** including: major reductions in training material expenses, reduced preparation & clean up times and reduced insurance costs in light of reduced risks to trainers and trainees.
- **A Better & Easier Way to Train** including: immediate results and precise feedback, repetitive practice to improve motor skills, refining & improving techniques of experienced painters and a wide range of training scenarios to suit different environments.
- **Measurable & Repeatable Scenarios** provide the ability to track student performance in an unbiased manner during the course of their training and to accurately compare student or employee performance.
- **Interactive Classroom Environment** including: improved student engagement when learning using this technology, ability to conduct training and demonstrations safely for large groups and an almost unlimited number of coatings and parts.
- **Unlimited Practice at the Touch of a Button** at no extra cost and in a safe environment reduces the learning curve and can significantly improve overall efficiencies.
- **Employee Performance Assessment** including: non-biased evaluation and testing of the skills and techniques of potential employees.

### Just some of the Features...

- Spray gun settings are displayed on the screen; air pressure, coating flow rate and fan pattern size allows the trainee to learn how to properly adjust equipment.
- Performance results based on transfer efficiency, mm build average, elapsed time, overspray, mls of paint consumed and more add to the effectiveness of the training.
- Visual feedback on the thickness of the coating for immediate feedback (if selected). Multicolour accumulation display mode- shades of red indicate coating thickness levels about the maximum target mm value, shades of green indicate coating thickness levels within the target value and shades of blue indicate coating thickness levels below the minimum target mm value.
- Equipment Settings - rotating air cap, changing fluid tip size and real time flow rates add to the training experience.
- Training Aids - a training target aid to immediately identify gun pitch and yaw (if enabled) and real time flow rates can be displayed on the screen.
- Visual Effects and application of Multiple Layers as students would experience in the real world.

## Virtual Spray Paint Components

### VirtualPaint8 Software

An advanced paint model is used to accurately represent real paint application. This model was designed from research and testing performed by the Iowa Waste Reduction Centre (IWRC) on spray gun settings, application techniques and performance efficiencies. The simulated coatings imitate real spray patterns at various spray gun settings and coverage showing the proper wet mil thickness.

The new VirtualPaint8 software offers users enhanced simulation accuracy (based on extensive IWRC research), enhanced coating characteristics and spray techniques and improved film visualisation. Enhanced effects such as **rotating air cap, changing fluid tip and real time flow rates** have been added together with real-world visual effects of **coverage, gloss, orange peel, sagging/runs and tiger striping**.

The software provides the framework to complement your choice of spray gun training package(s) which include the follow options: Pressure Feed, Gravity Feed, Airless, Air-Assisted Airless and Electrostatic.

The software includes the **Instructor Design, Skill Development** and **Skill Evaluation Modes**.

#### **Instructor Design Mode**

The Instructor Design Mode is an easy-to-use interface that allows instructors to configure aspects including, Users, Teams, Lessons, Lesson Plans, Coatings, Parts and Instructor Credentials.

For example, aspects such as number of layers (up to a maximum of five (5) coatings can be added to a lesson in this mode), time allowed to apply each layer, number of rework attempts allowed, targets for thickness and film specifications, together with the overall lesson/project requirements, coat, paint and part characteristics can also easily be set and modified to challenge students and develop their skills.

#### **Skill Development Mode**

Skill Development Mode is more a free play environment where user scores can be calculated on-demand (but not written to the database) and the trainer can select any part or coating (up to 5 coating layers) in this mode.

#### **Skill Evaluation Mode**

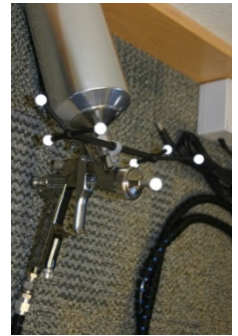
Skill Evaluation Mode allows the instructor to test a painter's skills based on a lesson plan and set of options and characteristics the instructor has selected. It reflects a test environment and a score and letter grade is assigned based on performance.

Additional Modes (sold separately) have also been developed for alternate uses including: **Competition Mode** and **Kiosk Mode**. Further detail about these is provided below.

## Spray Gun

VirtualPaint offers the following range of spray gun options to cater your intended application(s) of the system: **Pressure Feed, Gravity Feed, Airless, Air-Assisted Airless** and **Electrostatic**.

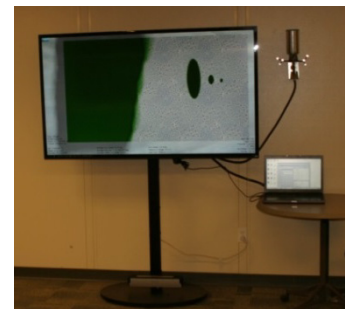
Multiple spray guns can be purchased for the one system to increase flexibility across a range of painting environments. Each spray gun is uniquely instrumented so that combined with the software an operator has full control over characteristics of the actual spray gun. The spray gun is also equipped with a tracking device that communicates with the tracking sensors to track the position and orientation of the spray gun.



## Tracking & Display Systems

Historically VirtualPaint has delivered using a projector screen, projector and SoniRails tracking system. However with advances in tracking technologies, a new Smart Tracking system has been tested and is now our preferred tracking device.

Our standard configuration, in addition to the Smart Tracking system, is a large (70 inch) flat screen TV which is mounted on a sturdy, moveable stand. A minimum room height of 10ft is recommended. The system is also provided with the appropriate computer and selected spray gun(s) so that you have a complete, working solution.



The option of a projector screen configuration is still available, if the intention to regularly move the system around outside of your training environment. A separate quotation will need to be prepared for that configuration option.

## Other Software Modes

In addition to the Instructor Design, Skill Development and Skill Evaluation Modes, the following additional modes have also been developed. These are:

### Competition Mode

Competition Mode allows painters to compete for the top score either individually or as a team and results are tracked accordingly. This mode is perfect for inspiring your painters to work hard and play hard!

### Kiosk Mode

The Kiosk Mode is designed to allow painters to be added at any time during a session and makes it a more suitable mode for use in the case of trade show, conferences and other demonstration type scenarios. Scores are tracked for all painters in the scoresheet.

