

October 2007



[FINISH LINE]

Sprayer training simplified

Forget the ruler – use the laser!

By Bruce Jackson

Bruce Jackson is the production and finishing specialist at the Alabama Center for Advanced Woodworking Technology (ACAWT) located in Phil Campbell, Ala. bjackson@mwscc.edu

A LONG TIME AGO IN A FARAWAY COUNTY CALLED COOK, THE SPRAY gun was introduced to whitewash buildings within three days for a great fair, it's been said. Well today we still spray, but the years filled with history of apprenticed spray painters has long since faded.

Today only a few schools teach finishing with more than a brush or rag. In the past, the master trained the apprentice, then school teachers did, and now electronic pictures on the monitor screen do. So where do the sprayers come from, and how are they trained?

Originally spraying was taught by an experienced person who may have spent years on the line and could disassemble a spray gun in minutes. That individual could look at an individual operating a spray gun and just know what the problem was. Those were the days when you had time. Now it's lean and mean to get the job done so supervisory time is minimal as is on-line training time.

Spraying defects run the gamut from too little or dry spray to too wet or runs. These production spraying defects usually result from distance of gun tip to product and lapping. There are other reasons, but distance is usually the first thing with lapping the second to consider since these are the easiest to see.

The rule of thumb for correct distance has always been to extend your little finger and thumb as far apart as possible. The theory is that you will have the correct distance from the gun tip to the product. Operators manuals prepared by the spray gun manufacturer usually tell you the correct distance for maximum benefit between the gun and the product.

We tried it on a gravity feed gun and it attaches securely

As teachers, we could always find a student with the correct little finger to thumb distance. They would become the quality control person. From a production point of view, it would certainly slow the finishing line down to have the quality control inspector with the correct little finger to thumb tip distance checking spray finishers' distances.

Another trick we teachers used to do was take a one-foot ruler and rubber band it to the spray gun cap air and adjust to the correct length. Then the student would move the gun back and forth along with up and down while the ruler rubbed against the product. Eventually the student got the feel for the correct distance from gun tip to product.

Technology to the rescue with the LaserPaint (See Picture 1), an attachment for manual spray guns that uses two laser beams that come together into a single dot when the spray gun is at the optimum distance from the work piece. The attachment was simple to install on our siphon cup gun but the rubber grommet can be under- or over-tightened and



Picture #1

cause slippage while on the gun.

We tried it on a gravity feed gun and it attaches securely

(See Picture 2). Of course we tried it on everything we could think of in the way of spray guns including HVLP pressure feed, airless, and HVLP air assisted airless. The brackets worked on all the guns we had in the lab.

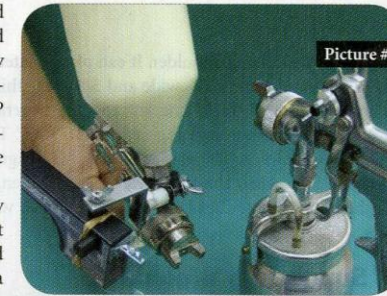
We had been advised by the material supplier that with its lacquer we should thin to 20 seconds with a Zahn # 2 cup, which we did. Since we were going to try gravity feed, we found that the spray pattern size lengthwise for our lacquer should be 7.5" with gun to project distance of 8". We checked for atomization via pressure adjustment until we obtained a uniform droplet size. The gun was set 8" from the project using a ruler.

We attached the laser per the instructions and found when we turned on the laser there were two red dots. We positioned the gun at the correct distance using a ruler and then turned the adjustment knob until only one dot appeared (See Picture 3).

With the correct distance established, we adjusted the laser so the unit angled enough so the red dot at 8" from the project lined up with the fluid tip as if we had a straight wire running out of the tip to the project. Now the red dot lined up vertically and horizontally with the center of the fluid tip. This allowed us to practice not only our distance from gun tip to product but also our lapping during the spraying process (See Picture 4).

All this was well worth the trouble, and the process was simple and neat. Now we only need one 12" ruler in the office, and one rubber band in a pocket. No more painted rulers to dispose of and explain to the central office why we need 10 dozen 12" rulers each semester.

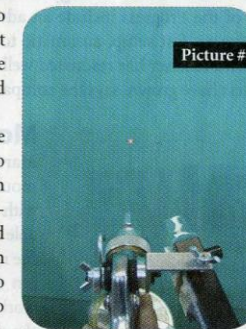
Thanks to Joe Bolick of the Iowa Waste Reduction Center (ivrc.org) at mjbolick@niu.edu, who supplied the LaserPaint. Rick Graben, Franklin County Career Technical Center, and Kyle Nix student staff at ACAWT.org



Picture #2



Picture #3



Picture #4