

# One for the Road

BY DAVID MCDONALD



*Tackling a paint-and-vinyl logo-on-vehicle job with a holsterful of techniques.*

*About the author: David and Robin McDonald own and operate Avila Sign & Design, a custom sign shop in Grover Beach, Calif. They may be found on the Internet at [www.avilasigndesign.com](http://www.avilasigndesign.com).*

**I**SOMETIMES WISH that the bay doors to my shop were about a foot taller, because we are sometimes asked to letter big trucks! The really big ones don't quite fit in our shop and there is usually a little anxiety when Robin schedules one of these big guys.

That means that I get to stand outside on a plank between two ladders and do the job in the wind, battling the bugs that are attracted to the paint like a magnet (I think you know what I mean!). And they say it never rains in California... Well that's a bunch of BS; it always rains in California, at least when we have one of these big rigs on the schedule — no joke!

There have been instances with some vehicles where we thought that if we let the air out of the tires we could fit it in. But I never got that desperate. I could just imagine this large truck with flat tires stuck in my shop with the top crunched and wedged into the ceiling (not a pretty picture). I really shouldn't be complaining because it's nice to be as busy as we are.

This project would involve a multi-logo application with a list of products as well as a Web address. With my rain coat on we got the job done with only a couple of interruptions from Mother Nature.

## PREPPING THE COACH

The task of preparing a vehicle for paint is something we take very seriously. A vehicle will probably receive more abuse than most other forms of signage in the marketplace.

Therefore the extra effort of making sure that you have a good surface to paint on completely outweighs the possible problems that can otherwise arise — crawling paint, poor adhesion that will show its ugly face prematurely, as well as the extra time consumed on the overall job. Trying to combat these gremlins is just not worth it.

Washing the vehicle is not our responsibility and we make that perfectly clear with our clients. After receiving the vehicle we go over the area that will be receiving the graphics with Bon-Ami. This removes any remaining dirt, oxidation and hard water deposits and plain old acid fallout.

Next, a good wax and grease remover is used to clean any remaining inhibitors that might get in the way of a strong bond between the new paint and vinyl application.

## LARGE PATTERNS

An accurate pattern to work from is another real time saver, and without it the job just becomes more of a guessing game than a professional vocation. Our clients deserve more than that, at least most of them do (although I've had a few that are questionable).

The pattern can be generated by hand with the help of an overhead projector. Through the years I have spent a lot of time behind one of these babies.

In the old days we used fine point markers on acetate. We would set this under glass on the projector and trace

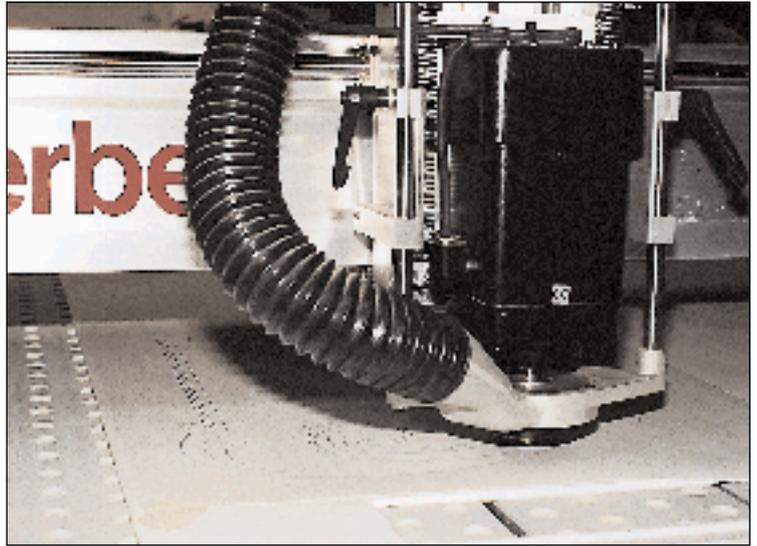
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Black line work is brushed, "McLintocks" is outlined and the locations are handled with vinyl, completing the back of this vehicle.



Robin is cleaning around the rivets, taking extra care for a good prep job.



The Gerber router makes fast work of the large patterns. Registration of the pattern is accomplished using a hole punch on two opposing corners. Circles are then hole-punched from masking tape and applied to the vehicle through the pattern.



A mask is applied to the vehicle surface to make for easier work of the color panels.



With the first area removed, I roll out red paint and airbrush yellow to the center and maroon on the outer edges.



Here I am rolling out the second color. The outline between the two colors allows me to continue working while the first color is still wet.

the image onto the paper that would hang on the back wall.

The pattern was then laid over corkboard and perforated with a pounce wheel. That was a long time ago and on a larger pattern was very time-consuming.

Computers are now well established in the work force and a lot of artwork is generated by this means. The artwork can now be output from most reasonably-priced printers onto acetate and this can be projected and pounced with the help of an electric pounce machine which burns tiny holes into the paper making a nice pattern which is a cut above the old method.

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Meanwhile, Berry "the Bear Man" is down below collecting paint spatters in his hair. He demonstrates the blending of the two colors for the Web address using wax paper and a dancing rhythm.



The word "Web" was extended out of the line to draw attention to it and create some excitement, while vinyl was used to finish the address.



A 1" flat is used to do all of the black and gold line work.



Logo showing the color panels completed with mask removed.



The "poor man's blend": I tape off the sides of the letters and brush the top with yellow, and the yellow is blended into the white with a sponge. Black line work and some white vinyl for the letters and this logo is done!



Although she might be freezing, my daughter Becky applies the vinyl (font is Carmina bold italic).

If you have a large plotter this task is made even easier. We are now using our Gerber router table to draw our larger patterns, and this has been a big help and a real time saver.

Most plotters have a pounce function, which is great for smaller-format work, but I found that our new computerized router has a pen-plot attachment, which allows me to draw a large-format layout, which was perfect for the job detailed here.

Use whatever means you may have available to you to make an accurate pattern to work from — this is smart money.

### MASKING, ROLLING & SPRAYING

A design can be made much more eye appealing when panels of color are treated with some form of color shift or blend. This will add a second dimen-

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# One for the Road

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Notice the shadows under the truck; the sun actually came out when we were finished. Go figure!



The back of the truck was done in the same manner as the sides. Here the panel is roller blended and wax paper is also used for a more aggressive blend.



With the lettering masked, the panel is rolled out red and I airbrush a shadow with black.



With all masks removed the finish details can now be added.



We have blended paint in a lot of different ways on this truck and I am going to add one more. Fill in the top part of the letter with an opposing color, use a liner and brush thinner strokes to achieve the fade.

CONTINUED

# Lots of Logos

# LOGOS



WORKING WITH MULTIPLE logos on a vehicle (or any format for that matter) can be awkward, if not downright tough to put together in a concise and legible manner. They should work well as a combination and be eye-appealing, yet each logo should not compete with the others.

However, there can be situations where the issues of space and placement may not be a problem. For example, some racecars have lettering and sponsor logos plastered all over the place, and I have seen some racecars that were very well done even though the space was limited and the application crowded.

But for most applications here are some things to consider when faced with a multi-logo vehicle...

- If there are only two logos to deal with it might be in the client's best interest to put only one on each side of the vehicle. This method will allow the logos to have greater size and therefore a greater viewable distance. The downfall, of course, is that the

logos are only viewed one at a time.

- When multiple logos are to be used on the same side it is important to allow enough negative space (white space) around the logos to separate them as individuals so that they don't run together and become cluttered.

- If two logos don't balance very well — one being horizontal while the other is vertical, or maybe one is very heavy and the other light in weight — a panel of color can help. A skeletal design can be made to appear much heavier when reversed out onto a panel of color; the panel will help to neutralize the weight of the heavier logo. The same can be done to lengthen a vertical design that will sit next to a horizontal design — the panel will mislead the eye and make the vertical design appear longer in mass and form.

Take a look at the photos here and see how I tackled this multiple logo situation.

Dave

## One for the Road

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sion and movement to an otherwise flat composition.

On larger projects that involve blends, textures and airbrush work, I prefer to lay down a mask to trap the colors and make the job go much faster.

The pattern is then positioned over the mask and the image is transferred to the vehicle. Areas of the design are cut with an X-ACTO® knife and removed, a base color is then rolled on, followed by the techniques required to achieve the desired results, like airbrushing, hand texturing and blending.

It can be helpful to design the artwork so that the colors are separated with an outline, which allows you to apply several panels of color at the same time, rather than waiting for the first color to dry.

When dry the negative voids between the colors can be filled or outlined with a quill or flat depending on the size of the area to be filled.

The shift or blend in colors can be very complex, or to keep it simple I will employ a color of the same family, whether they are cool or warm in nature.

If you are afraid to introduce a new color you can go with a monochromatic scheme by tinting and shading the colors. This is accomplished by adding white to a color to lighten or highlight it and black to darken or create a shadow.

I like to mix my techniques on a project, using airbrush blends for soft transitions and textures for a looser, more aggressive look. This adds more interest to the finished design.

A panel of color can be given a highlight and shadow to create an embossed or recessed look or maybe go light-to-dark to light again horizontally as a lighting effect. Any method used to bring life to the panel will be of significant benefit.

Follow along with the pictures to see how we handled this particular job and the next time a big rig comes in for some work don't be afraid to tackle the job. With a good plan and a good pattern you can't fail and if you can fit it in your shop then I'm jealous because that's one up on me!

SB

# In-House Spraying

BY DAVID MCDONALD



*Setting up and putting the HVLP sprayer to work.*

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I'VE HAD MANY conversations with folks in the sign industry and I've found that there are many ways to skin a cat, so to speak, or to get to the finished result you're looking to achieve. I have seen gold leaf laid many different ways, with fine results despite the variety of methods.

When we are trying a new technique for the first time there is an unknown that we encounter that comes with the territory. This is a stage in the creative process where we might not find ourselves at the peak of our own self-confidence.

The confidence comes with experience, and the experience comes by doing. To better ourselves we must not be afraid to enter that unknown place where we might find ourselves to be vulnerable.

We need not feel inadequate when doing things differently from what most

other people in the industry might otherwise be doing. If you're getting the results that you're looking for then that is all that matters. This is how techniques are born and brought to fruition and become the norm in any industry. We need to experiment and, of course, have fun!

Recently we decided to try spraying in our shop. This change was brought on by the need to prime and paint high-density urethane (HDU) in a much more expedient fashion than we were accustomed to doing, which consisted of brushing and rolling right out of the can.

I called and talked to my brother Keith, who has been in the automotive paint business for over 20 years, and he was a lot of help. I can honestly say that we should have considered this change long ago because the results we are getting are fantastic, so let me share with you how we incorporated the equipment and put it to work for us.

## HIGH-VOLUME, LOW-PRESSURE

HVLP is the type of spray gun we chose for our shop. It is a simple gun and one that was not expensive, though there are models that can get costly. We got ours at an automotive supply shop.

We chose a model that is gravity feed and comes with a cup that screws on top of the gun. I believe the cost was around \$150 and the gun paid for itself in labor saved within the first four hours of use.

There are two principle adjustments for operating the spray gun. The first is the adjustment for the needle, which allows the paint to flow through the spray tip; this adjustment controls the volume of paint to be sprayed.

The second adjustment controls the fan or pattern of spray. The trigger is a two-stage system where the first half of the pull will result in air only, and if you pull back the remaining distance the needle is moved back, allowing paint to be discharged.



The basic setup — the gravity feed high-volume, low-pressure (HVLP) spray gun and our primer of choice.

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**Dropping down from the ceiling with a coil hose keeps us from tripping over the hose. The upward pull of the coil also helps with arm fatigue on large jobs.**



The gun requires 38 to 44 pounds per square inch (psi) of air pressure to operate. The pressure is governed within the gun and exits the tip at around 10 psi, making for hardly any overspray in the shop. It doesn't get any easier than this. The volume and spray pattern can be shut way down to allow for spraying the smallest elements.

### **SETTING UP FOR COMFORT**

After dragging the hose around the saw horses, only to return the same way I came, and getting my feet tangled a few times, it quickly became clear to me that there had to be a better way.

What we did was to pick a general area that we would be spraying; in our case that was at the opening of one of our bay doors. An airline was run up the wall at that location so we could drop down a coil hose from the ceiling.

The spray gun would be attached to the line at that point, solving the problem of tripping over the hose. A lot of the weight was relieved due to the coiled hose always pulling upward. The gun is fairly light but when spraying for long periods of time anything helps. A short pigtail was attached to the coil to make handling a little easier.

A spinning table, or Lazy Susan, was created to further assist us when spraying. For this we cut a 3' circle out of 3/4" melamine and attached this to a piece of 3/4" galvanized pipe.

The pipe could then be inserted into one of our sawhorses that has a hole in the top — the plastic kind that folds out and is rated for 500 lbs.

By laying the sign on the spinning table we could stand in one place and prime signs without having to move much, which is very efficient. We are able to lay large pieces up to 4' x 8' onto the table and work with ease, which has made priming and painting the background of HDU signs a cakewalk.

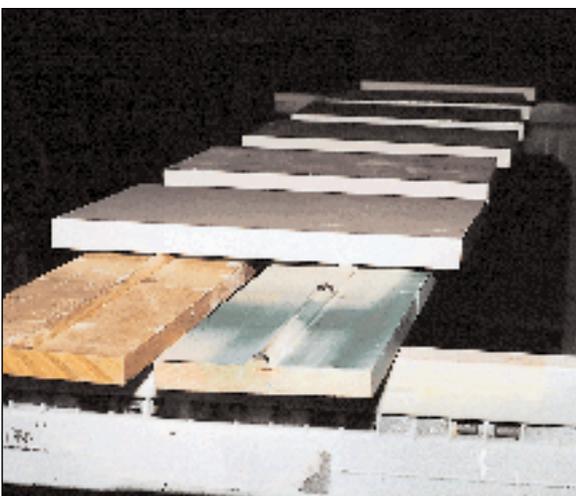
When we have signs that are too large to fit on the spinning table we just drag the hose around, but we have made some changes to the type of hose we use.

We have found the rubber type of hose to be excessively heavy, so we are now using a 1/4" hose made for the bev-

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**Building a spinning table like this one can really help when spraying. The building and assembly are pretty straightforward and illustrated here.**



**For smaller appliques and letters we glued strips of half-round molding to 1" x 6" material to elevate the product and eliminate sticking when dry. For really small pieces try double-stick tape applied to the half-round; this keeps the air pressure from blowing the product away.**



**We prefer the clear, braided hose to the traditional red rubber air hose. The braided hose is about half the weight of the rubber hose.**

## In-House Spraying

CONTINUED

erage industry, a clear, braided hose that is much lighter.

### SPRAYING 101

Although there is little overspray going into the air with an HVLP gun you should always wear a respirator when using any kind of spraying device.

We have a blower that sits on the floor that we plug in and point toward the bay door (outside), which also helps eliminate a lot of extra particulate matter from the shop. The blower is the kind used for drying carpets and such after a flood. It's an older model, but pushes a lot of air, which draws from the shop area extremely well.

**For individual letters and smaller appliques we made some racks out of 1" x 6" boards with half-round molding glued along their length.**

When priming or painting dimensional signs with a spray gun we have found that the air flow creates a kind of vortex, or eddy, which doesn't allow the paint to be deposited in the recessed areas as well as the edges of all raised characters.

By closing the gun down (the fan and volume) we can get in close and spray those areas first that are least likely to receive a build-up. This is done from all four sides — one at a time.

Next, we shoot the whole sign from all four sides, striving for a nice, wet coat by the fourth pass. If the sign gets too wet early the air from the spray tip will be blowing the already-deposited film all over the place!

For individual letters and smaller appliques we made some racks out of 1" x 6" boards with half-round molding glued along their length. These work the same as a bed of nails where very little surface touches so the items won't stick. This method also allows the air to pass underneath and past the item for a much more even deposit of paint.

For smaller signs half-round molding can also be placed on the spinning table, making life a whole lot easier.

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## WATER-BORNE ONLY

When we began spraying in the shop we decided to spray only water-borne materials both in primer and paint. This decision would benefit the environment as well as our own health.

We experimented with various products to find a water-based primer we were comfortable spraying. In the past we used an oil-based primer that worked very well and we still use it on all panel work using a roller.

The first water-borne primer we tested on HDU was highly recommended by our local paint factory as being the best all-around primer on the market, but after having to apply six coats to achieve the proper build-up I was not satisfied with the results. Every coat was applied to the point where it looked like cottage cheese, but when dry it would evaporate and disappear.

Then we tried Coastal Enterprises'

FSC-88 WB and I can honestly say that this stuff is the ticket on HDU. We remove the spray gun's filter and thin the FSC-88 with water just enough to where it will run through the gun, and we can prime a sign in just one coat working from all four sides as described earlier.

The sanding characteristics of this primer are excellent and drying time is exceptional. It will take longer to dry if you build up one heavy coat, but doing it once and walking away is my preference.

The solids content of this primer appears to be way higher than most other primers we tested, therefore after spraying the film as it dries most of the product is left there in its entirety. The primer fills the open cells of HDU very well because it seems to expand slightly when sitting idle after mixing with a little water. The first time I noticed this was after I sprayed a coat and hung the gun

on the wall for a few minutes while the first coat was setting up. I returned to find that the primer in the cup had swelled and turned in to a marshmallow crème consistency.

With very little shaking the thickened primer turned back to a liquid state. I was dumbfounded but impressed! Between the high solids and the expanding nature of the primer a one-coat coverage was possible.

Try setting up for spraying and save time and labor. Get a gun and test some of the products to find a process that is comfortable for you. I hope this information will serve as a head start. SB

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# Little Big Man

BY DAVID MCDONALD



*About the author: David and Robin McDonald own and operate Avila Sign & Design, a custom sign shop in Grover Beach, Calif. They may be found on the Internet at [www.avilasigndesign.com](http://www.avilasigndesign.com).*

*From software to hardware and the finishing touch, a step-by-step look at creating a small dimensional sign.*

**P**RODUCING small dimensional signs can be a fabrication and profit challenge. A potential customer will assume that if we make the sign smaller then we can cut the cost of the given sign.

From a sign maker's standpoint the work involved on a small sign is usually no less involved as with a much larger sign consisting of the same elements.

It can be argued that the smaller sign would involve more attention to detail and workmanship because of the smaller elements that exist on these little guys. A small out-of-place spatter of paint on a background, or a smashed serif on a small letter will stick out like a sore thumb on a small sign because of the mistake's relative size in proportion to the size of the

sign itself. Imperfections such as those mentioned would probably go unnoticed on a larger sign.

And, you can actually work faster and more profitably on larger features. Really, the only area of savings for the sign maker on a small sign is in the amount of material costs.

Should we carry the savings from using less material onto the customer? In our shop the answer would be yes, if the estimated amount of labor involved in fabricating the sign did not go up, but we find that this is usually not the case.

Some shops set a minimum base price on small signs, but I don't think that this is an effective way of pricing unless all of the other things, such as the amount of copy and other attributes involved, are considered as well.

We find that we are better off in the long run to estimate the individual sign and price it accordingly. If we were to create a minimum base price for signs measuring one square foot or less, and a customer came in and ordered a couple of signs that fit in that size range, but were in fact completely different in nature, we could be shooting ourselves in the foot.

If one sign needs five lines of copy and an illustration whereas the other only needs to say *SOLD*, how is it justified when the amount of labor involved for each sign is so dramatically different – it isn't!

Smaller details and designs have become easier to manage with the help of our Gerber router table. The accuracy of the router allows us to feel confident about the quality of the finished product, allowing us to better estimate the labor involved and deliver the small, crisp details needed.

## **SMALL SIGNS, BIG PROFIT**

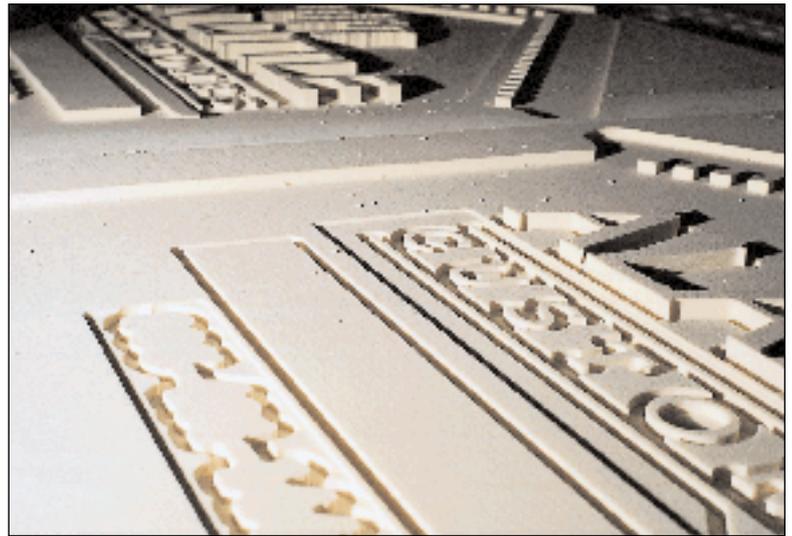
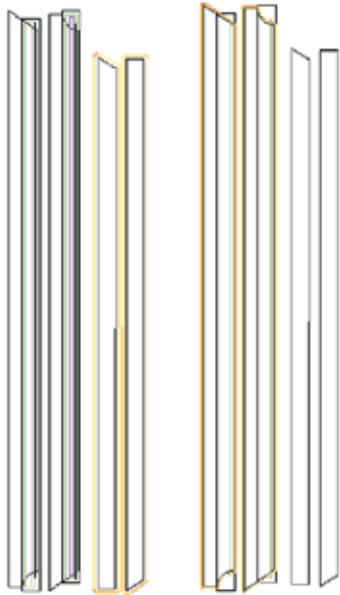
The Alan Little job pictured in this article was first bid as a much larger sign at 3' x 4'. It was eventually decided to

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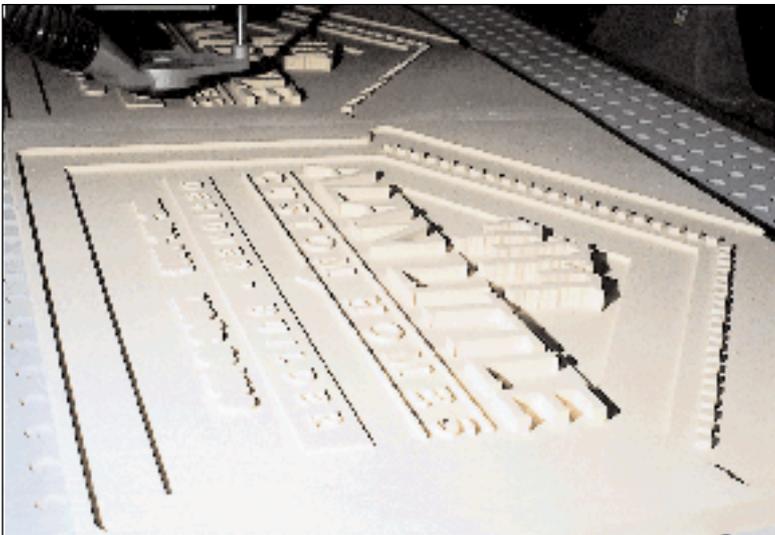


**The finished product! By having the client handle the fabrication of necessary brackets and posts, we were able to bid this job within the client's budget.**

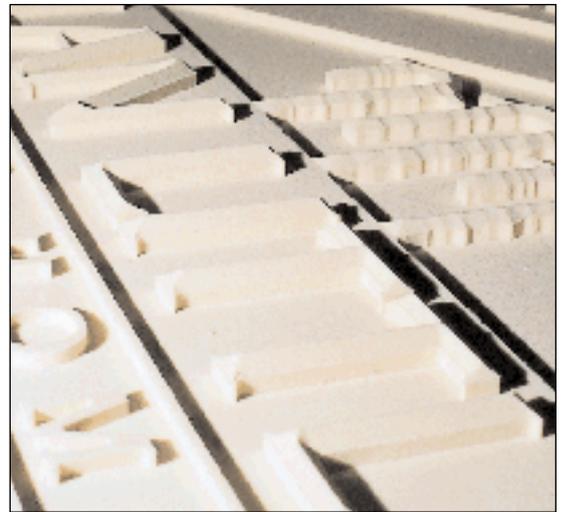
Frame 1 and Frame 2: I imported the frame from the original artwork and assigned clean-outs and engrave passes to make the molding for this sign.



With the first and second file complete, we can see the progress of the third file. Notice the different height of each line of copy.



With file #4, all elements are refined using a smaller diameter bit. The final depth is achieved for the logo as well. Note the perfect alignment of the squares at top, this will make applying the molding a simple process.



"Alan Little" finds its place on this sign, with the appropriate edge return generated using the 3D Carve software in Artpath. Note how the engrave pass around the logo marries the logo perfectly to the background of the sign.

make a smaller sign, measuring 2' x 2' with added prismatic letters and some gold leaf and smalt.

After deciding to go ahead with the job, Mr. Little decided that he needed two signs instead of one. We were able to double our profit by making two signs priced correctly, versus losing our tails in labor.

This job was designed so that a 1"-thick high-density urethane (HDU) blank could be routed on our router table, decorative molding would be routed and glued to the blank and this finished HDU structure would be glued to a plywood backing for added strength.

After sizing down the artwork and realizing the small details involved with this sign, I knew that I would need to lessen the depth around these smaller characters, yet keep the maximum height needed for

the main copy and building's logo.

The depth of smaller characters is related to the character width or weight, and as a general rule I try not to have the character be too much deeper (or higher) than it is wide.

With this sign some of the letters were only about 1/8" thick and could not afford to be the same depth as the main copy, which would measure 1/2" deep. I could generate paths in my software and send the job to the router to solve this problem. Let's walk through the steps for generating and producing these small, or should I say, *Little* signs.

#### THE BEATEN PATH

Before generating paths in my router software, I like to start with a master file that is saved there first, with all other

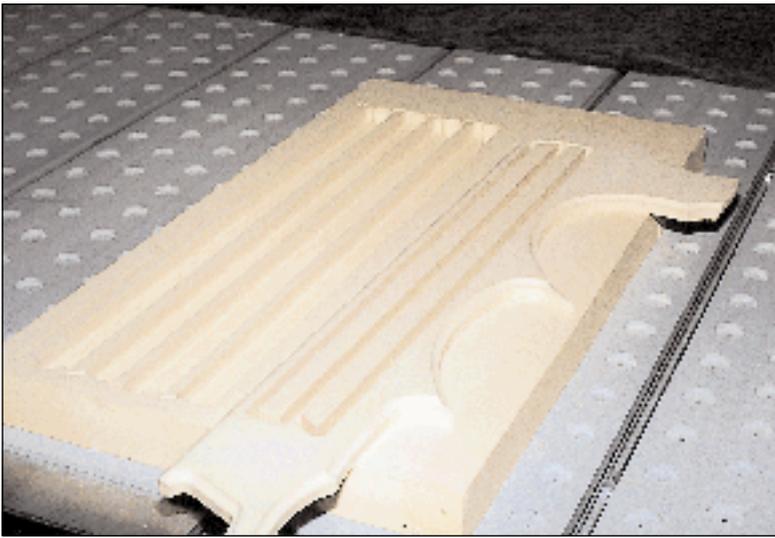
subsequent router files generated from this file.

It will be necessary to save the master file with the *Use Material* command turned on, ensuring that all other files generated will have the same mathematical home position, as long as the material size is set larger than the sign itself.

The first file (**Alan 1**) was set up with a clean-out path 1/4" deep, initialized from the material. Notice the extra outline in the master file that is 3/4" larger than the actual sign. This outline serves as a void area to be selected with the other relevant elements to allow for the clean-out path.

There are also two rectangles added which surround the small copy that is not part of the artwork. These rectangles will be discussed later.

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Frame stock and moldings can be generated using a CNC machine. Here, my router makes easy work of this molding.

The squares, or fretwork, at the crown of the rooftop, the logo and the main copy are not selected so their height will not be changed or be routed. All other areas at this point are removed 1/4".

The squares for the crown's fretwork could have been cut individually and glued in place but generating this first path served two important purposes...

First, with the squares in place the molding would fit perfectly when glued up, and as mentioned earlier, the slightest discrepancy on an element shows up so much worse on smaller signs. This first path would mill the blank perfectly flat and act as a mathematical reference for the remainder of paths to be run.

## ENGINEER FIRST

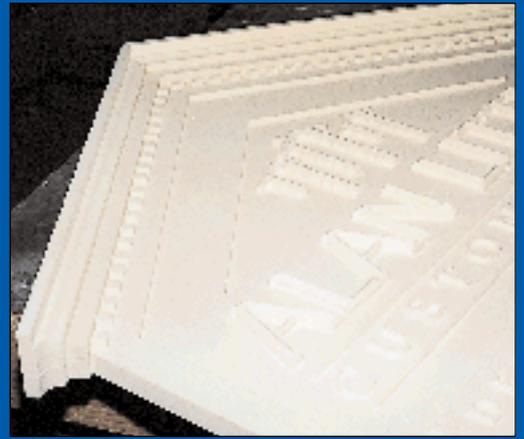
The second path (**Alan 2**) would clean out the areas around the smaller lettering about 1/8", which would help with the strength of the small characters when the sign was completed and in service. The overall profile of the sign will also appear more pleasing in this way.

It pays to engineer the sign in advance so that extra areas such as the rectangles around the small lettering can be added in the master file so as not to create any confusion (are you still with me?).

The panel around *custom homes* is part of the design, and because this



Attention to detail is important on smaller signs. To avoid run over, Robin stipples the black acrylic paint on to this pad.



For an instant bond I use Cyanoacrylate glue to apply the molding. With the pieces flush to the squares I get a perfect fit!

is a raised panel (1/8") there is no need to drop this area with the other small copy.

The third path (**Alan 3**) removes the background 1/2". Remember, at this point all passes are still initialized from the material's surface.

Using a 1/4" bit, the composition of the sign starts to come together at this stage. The fourth path (**Alan 4**) consists of selecting all of the text and the panel that encompasses the *designer-builder* copy and generates a male path at the existing depth using a 1/8" bit to clean up the inside corners on the small characters. The triangle with the logos is selected and given a clean-out path of 3/4".

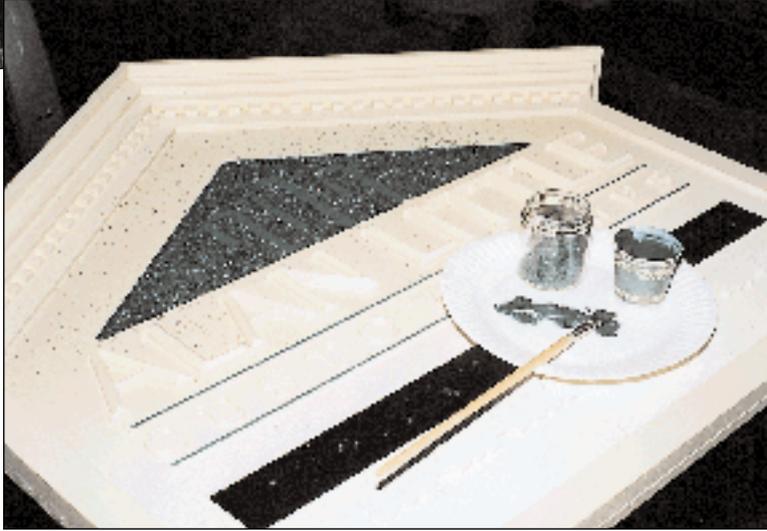
The fifth path (**Alan 5**) generates a prismatic path for the main copy, *Alan Little*, with a 100-degree bit. I also run a bevel around the stylized houses logo with a 120-degree bit. This file also contains the path that will cut out the panel.

The main copy and houses were raised quite a bit higher than the rest of the elements. After running the prismatic path and bevel they were set into the sign more closely matching everything else.

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The blended background on this monochromatic color scheme comes to life when the border is painted with the middle tone to trap and isolate the blend.



The smalt is applied before gilding the logo for a cleaner look on this small sign.

The path that cut out the panel was initialized from the table. I utilized the router to cut and shape the moldings for the top of the sign as well. Two files were used to accomplish this. The individual pieces needed for the moldings were saved as Adobe Illustrator files, imported into Artpath (my router software) and paths were generated.

In the first file (**Frame 1**) notice that I added a rectangle to the necessary pieces and a single-line vector, these were used to form the different layers involved on the moldings. The rectangle was selected and a path generated to make a clean-out and remove material, and the straight vector line was used to run a core box style bit to create a cove.

The two shorter pieces of molding needed only to be cut from 1/2" HDU and glued to the sign structure, followed by gluing on the larger pieces of molding which would butt up to the smaller ones, completing the crown.

### LITTLE-BIG MISTAKES

Five files for the signs and two files to run the molding — this sure seems like a lot of files for one little sign, right? Wrong! Multiple files allow the operator to send the job to the router one step at a time, eliminating the confusion that could come in to play if multiple paths were stacked on top of each other in a single file.

As each file is sent to the router you can follow the progress of the job and, if necessary, make changes as you go. If you do run into a problem as the jobs are being sent and changes need to be made, just simply open the master file and assign the appropriate path needed to overcome the problem.

Sending jobs to the router in this way has saved me from making costly mistakes many, many times and the extra time spent sending the multiple files is minimal.

Maybe some of you are already processing your files this way. For those people who are not, give it a try. I think you will like the confidence that will come from it and hopefully you will push the envelope that much further. **SB**