**Additional Initiatives**

Dossantos takes pride in the health and safety of his employees and protecting his neighborhood and its environment. He is using car cleaning products that are environmentally friendly and has branded his shop as “GoGreen.” He is considering installing solar panels on the roof to generate electricity, planting a roof garden, and re-using gray water within the shop.

**Conclusions**

912 Auto Center made a number of changes to their operations when they moved their location to Dorchester from Mattapan. These changes were spurred by the owner’s commitment to improving the quality of both his product and the working environment. The success he has experienced as a result of switching from primarily solvent-based painting and paint gun washing to primarily water-based painting and paint gun washing systems has been significant. Operating costs are reduced, performance and productivity are improved and worker satisfaction is enhanced.

The dramatic decrease in the handling, use and disposal of hazardous materials at the shop has prompted Larry Dossantos to look for even more innovative ways to “Go Green” and be an example to the neighborhood and to his business sector. He has shown how reducing the use of toxic chemicals can be a winning proposition on multiple dimensions—financial, environmental, and health and safety—and how long range thinking can lead to long range business opportunities.

---

**Auto Body Shop Saves Money by Eliminating Solvent**

912 Auto Center in Dorchester Switches to EPA-recognized Paint Gun Washer

**Summary**

In 2007, Larry Dossantos, the owner of 912 Auto Center, moved his shop from Mattapan to Dorchester. The Boston Public Health Commission (BPHC) visited the new location as part of the outreach under their Safe Shops Program (www.bphc.org/safeshops). BPHC staff recommended that 912 Auto investigate using water-based paints and a water-based paint gun washer instead of reinstalling the previous solvent-based system. BPHC explained to Dossantos that a new spray booth could be equipped with the technology to accommodate water-based paint, including a drying feature to “bake” the paint onto the vehicle. The previous system relied on passive evaporation of the solvents in the paint.

Additionally, a water-based paint gun washer could clean both solvents and water-based paints.

A new spray booth to accommodate water-based paints was installed in 2008. Dossantos now uses the DuPont™ Cromax® Pro (http://upgrade2water.dupont.com) line of water-based paints for the majority of the work conducted at the shop. 912 Auto also purchased a new paint gun washer that uses a water-based cleaning material, Acrastrip® by Polychemical Corp® (http://www.upoly.com/acrastrip.html).
I am happy with the water-based technology and am eager to show other businesses that it is possible and profitable to move toward more environmentally friendly chemicals and technologies."

Larry Dossantos, Owner
912 Auto Center, Dorchester

"My business (is) a safer and healthier place of work, not just for me but for my employees and my customers as well."

Larry Dossantos, Owner
912 Auto Center, Dorchester

Comparing past costs of $1,440 per year for the Naked Gun Cleaner®, $1,248 per year for lacquer thinner product, and $700 per year for waste disposal costs, against $31,500 per year using Acrastrip®, this change in material has resulted in a net savings of $3,356.50 per year. This is a significant savings for 912 Auto Center’s operating budget.

At the same time that 912 Auto switched to the Acrastrip® gun washing system, they also purchased a new Herkules® gun washing machine to use with the water-based paints for $1,000. Including this one-time cost in the equation, the shop still saw a payback period of less than four months. However, a new machine was not required and most shops use Acrastrip® in their existing gun washing machines.

Paint Conversion

When setting up his Dorchester shop, Dossantos also chose to switch from solvent-based paints to water-based paints. This conversion completely eliminated the use of paint reducer, a solvent formulation used to mix paints and to improve the paint spread and drying characteristics. The reducer used by 912 Auto contained:

- acetone
- naphthalene
- toluene
- xylene

These and other chemicals in the paint reducer are harmful to the environment and human health (as described previously).

When using the reducer, Dossantos would often feel dizzy. He commonly used 1 gallon of reducer per car, and painted up to 10-15 cars a week, a total of 780 gallons per year. Instead of using a reducer, he now mixes pigment and colors with water. He no longer feels dizzy, and there are no strong odors when mixing or spraying the water-based paint. Dossantos feels better about his own health and the care he takes of the environment.

Eliminating the cost of the paint reducer covered the increased cost of the water-based paints. Therefore, 912 Auto’s costs to paint a car have not increased as a result of this process change.

As part of the paint conversion Mr. Dossantos purchased a new spray booth that included a hot air pressure system to dry the water based paint. The new booth cost approximately $60,000. Although he would have had to purchase and install a new booth as part of the move to the new facility, this still represented a significant investment by Dossantos, and one that was influenced by his commitment to creating a safer and healthier work environment.

The shop has been very happy with their conversion to water-based paints and believes that they have received a reasonable payback on the investment. Solvents remain in the primer and top coat used at the facility because these products are not yet available in water-based formulations.

**Financial Analysis**

912 Auto Center used 60 gallons of Naked Gun Cleaner® on average per year. Each 5-gallon drum cost $120, totaling $1,440 in material purchasing costs per year. To pre-clean very dirty guns, 912 Auto also used 120 gallons of Lacquer Thinner on average per year. Each 5-gallon drum cost $52, totaling $1,248 in material purchasing costs per year.

Both the waste gun cleaner and lacquer thinner had to be sent off site as hazardous waste. The cost was $350 every six months for shipment and disposal, totaling $700 per year in waste disposal costs.

The new product cost $189 for one 5-gallon drum and no waste has been generated to date. The same 5 gallons of product purchased six years ago are still in use at the shop, making the current cost per year $31.50 for the product. When the material ultimately needs to be replaced, the waste solution will need to be evaluated for status as hazardous waste but, in the manufacturer’s experience, is not likely to incur a hazardous waste disposal fee.

<table>
<thead>
<tr>
<th>Product</th>
<th>Use</th>
<th>Cost</th>
<th>Total</th>
<th>Annual Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naked Gun Cleaner®</td>
<td>60 gal/year</td>
<td>$1,200/5 gal drum</td>
<td>$1,440/year</td>
<td></td>
</tr>
<tr>
<td>Lacquer Thinner</td>
<td>120 gal/year</td>
<td>$52/5 gal drum</td>
<td>$1,248/year</td>
<td></td>
</tr>
<tr>
<td>Hazardous Waste Disposal</td>
<td>350/6 months</td>
<td>$700/year</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acrastrip®</td>
<td>5 gal/6 years</td>
<td>$189/5 gal drum</td>
<td>$31.50/year</td>
<td>$3,356.50</td>
</tr>
</tbody>
</table>

912 Auto Center is located at 113 Norfolk Street in Dorchester, MA. The shop (building and operations) is owned by Larry Dossantos. Two full time employees work in the 3,800 square foot shop. 912 Auto Center provides automobile body work including frame work, collision work, and painting. The shop works an average of 10 - 15 cars each week.