

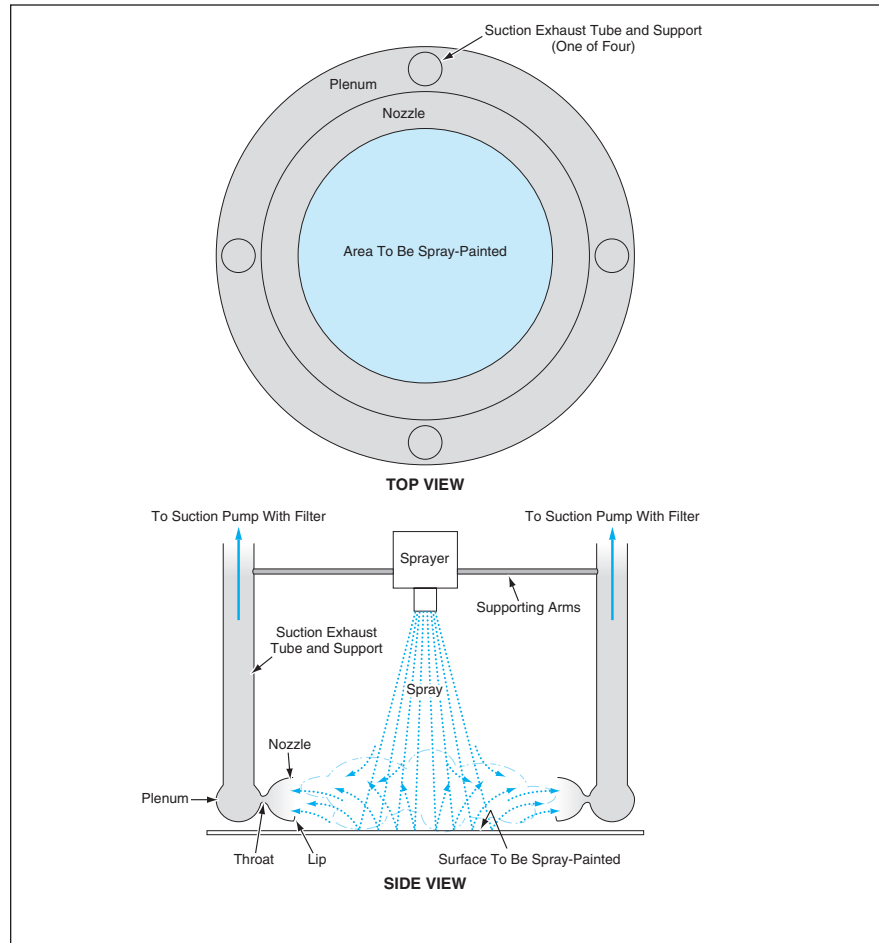
Paint-Overspray Catcher

Turning airflow and entrained droplets would be drawn away.

Langley Research Center, Hampton, Virginia

An apparatus to catch paint overspray has been proposed. Overspray is an unavoidable parasitic component of spray that occurs because the flow of air or other

gas in the spray must turn at the sprayed surface. Very small droplets are carried away in this turning flow, and some land on adjacent surfaces not meant to be painted.



The **Paint-Overspray Catcher** would suck the turning flow of gas and entrained paint droplets, preventing the droplets from landing on non-target surfaces. The planform of the catcher plenum and nozzle need not be round as shown here: It could have any other convenient shape, depending on the boundary of the area to be painted.

The basic principle of the paint-spray catcher is to divert the overspray into a suction system at the boundary of the area to be painted. The paint-spray catcher (see figure) would include a toroidal plenum connected through narrow throat to a nozzle that would face toward the center of the torus, which would be positioned over the center of the area to be spray-painted. The plenum would be supported by four tubes that would also serve as suction exhaust ducts. The downstream ends of the tubes (not shown in the figure) would be connected to a filter on a suction pump. The pump would be rated to provide a suction mass flow somewhat greater than that of the directed spray gas stream, so that the nozzle would take in a small excess of surrounding gas and catch nearly all of the overspray. A small raised lip at the bottom edge of the nozzle would catch paint that landed inside the lip. Even if the paint is directly piston pumped, the droplets entrain an air flow by time they approach the wall, so there is always a gas stream to carry the excess droplets to the side. For long-duration spraying operations, it could be desirable to include a suction-drain apparatus to prevent overflowing and dripping of paint from inside the lip. A version without an external contraction and with the throat angled downward would be a more compact version of catcher, although it might be slightly less efficient.

This work was done by Leonard M. Weinstein of Langley Research Center. For more information, contact the Langley Commercial Technology Office at (757) 864-6005. LAR-15613

Preparation of Regular Specimens for Atom Probes

Single- or multiple-tip specimens can readily be prepared.

NASA's Jet Propulsion Laboratory, Pasadena, California

A method of preparation of specimens of non-electropolishable materials for analysis by atom probes is being developed as a superior alternative to a prior method. In comparison with the

prior method, the present method involves less processing time. Also, whereas the prior method yields irregularly shaped and sized specimens, the present developmental method offers

the potential to prepare specimens of regular shape and size.

The prior method is called the method of sharp shards because it involves crushing the material of interest