Trouble Shooting the Unknown

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When examining quality electroplated items in the market place, be they automotive, motorcycle, or appliances, we seldom think of, or give credit to the field engineers that spend countless hours trouble shooting the equipment and processes that make this high quality possible. Today we will hear from some of those who built their careers in the Metal Finishing service industry. They will share their expertise in areas ranging from DC power supplies, filters, and processes.

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Metal finishing has always demanded a unique brand of service. Being able to produce a high quality product on a production basis requires the perfect union of what I have always referred to as the "MECH" factor.

MECHANICAL
ELECTRICAL
CHEMICAL
HUMAN

Unless your MECH factor is in harmony the results achieved my not be quite what you desire. What does it take to service our industry? First, a very special type of person. One that is willing to spend many hours, both day and night, with very few thanks. Everyone knows it's the serviceman that does most of the work, and the salesman that receive the accolades, and money. With present day hazardest material shipping requirements, we can no longer grab a sample and send it back to the service laboratory. You have to be ready to solve problems on the spot.

Required Tools

Plating seems to be the only trade that tends to operate without tools. How many times have you had problems locating, tape rules, wrenches, screwdrivers, and so on? To properly service, the following are basic requirements.

VOM Meter
Tong Testers
Tape Rule
pH Meter or paper
Thermometers
Hydrometers
Stalagmonmeter
Hull Cell Equipment
Chemical Analysis Capabilities

With the above tools you stand a fighting chance of solving 95% of normal finishing problems.

Attitude

We tend to be an industry of shot gunners, that hope to find a quick fix, needing no more than duct tape and bailing wire to correct all ills.

This type of approach usually generates more problems than it solves.
My recommendation when approaching serious problems has been to stand back and examine all conditions prior to dumping in magic elixirs. Never accept anyone's opinion without checking the conditions for yourself. In the old days we could stand back, light up a smoke and map out the situation, today we have to settle for a coffee. Whatever the device, think before you. add. Then add only half of that amount as a first step. It's somewhat difficult to remove two gallons of fixer from twenty one thousand gallons of plating bath. We also know its difficult to deliver a speedy fix when looking at an automatic plating machine generating thousands of rejects per hour.

Starting Points

The most difficult part of servicing, is where to start. The first step is to rule out areas that are not causing problems. The next step is to zero in on the problem area. Rejects may be categorized in two types, "A" problems and "B" problems. "A" class problems are those we tend to live with, such as light touches of white wash that can be color buffed off. "B" class problems are those that shut assembly lines down and generate big dollar losses.

The Obvious

Rule out as many areas that are not causing problems as you can. Try to adapt the MECH factor to pinpoint the culprit. There are times when you not only have to define your opinion; you may also have to defend it, as to exactly what the problem is. This is especially true on problems such as stains, clouds, whitewash and pitting. Never examine wet parts, the results may be totally different when they are properly dried. Examine work prior to plating, you can't solve basis metal flaws in the plating bath. Racking and rack tips should be inspected, dirty rack tips can account for many rejects that get blamed on chemistry. Look for changes, when high quality work turns to trash, there has to have been a change.

For every effect there is a cause. If we establish parameters, good deposits will be produced. If a good deposit is not achieved, it is because we have violated one or more of the set parameters.