



Mid-South Engineering Company

Issue No 21 Working Together

First Quarter, 2007

The Cheapest Parts You Can Buy (Part 1)

By: Wayne Horman/Mark Culpepper

**DOWN TIME!
LOST PRODUCTION!
REPLACEMENT PARTS!
OVERTIME COSTS TO DO UNTIMELY REPAIRS!
EXPENSIVE PARTS SHIPPING COSTS TRYING TO
"BEAT THE CLOCK!"
INTERIM EQUIPMENT, REPLACEMENT, RENTALS!**

Are you constantly looking for a way to reduce the bottom line on repairs and replacement parts for your rolling stock? Did you know that you are in total control of some of the cheapest parts you can buy?



Rolling stock at your facility is one of the more expensive pieces of equipment to maintain and keep performing at its' peak. Even though expensive to purchase and operate,

they are essential to the success of your process. Some lease their rolling stock, but the price is still figured into the rental. The question of "How do I reduce the costs of maintaining my rolling stock?" is generally not even considered UNTIL it is broke down and your production suffers because the rolling stock that supports that production is no longer operational.

Odd as it may seem, the answer to this expensive problem many times is simply an inexpensive regular maintenance program. The CHEAPEST PARTS you can buy are clean air, clean fuel, clean oil and grease. The customary concept of "if it will start, run it" or "if it isn't broke, don't fix it" is far from being the wise (and economical) way of operating your rolling stock. Let's take a look at what can happen without a good preventive maintenance program.

DIRTY AIR

Dirty air inside a motor is caused by a couple of similar situations. The first is a dirty or "blanked over" air filtration system resulting in:

- Excessive fuel consumption
- Loss of engine horse power
- Excessive wear on valves resulting in poor compression and combustion

- Excessive piston ring wear resulting in poor combustion, lower horse power generation and excessive motor oil consumption
- Excessive turbo and/or blower wear resulting in lost fuel efficiency, lost horse power from the engine, premature seal and fin failure.

The second is similar but even more dramatic in the negative results and that is an air filtration system that has a "hole" in the paper filters or any filtration seals or gaskets that allow "outside" air to enter the motor without being filtered. The results are:

- Excessively increased wear on valves
- Excessively increased piston wear
- Excessively increased turbo and/or blower wear

"Dirty Air" will destroy the top side of your rolling stock's motor. Dirty air acts like little bits of sandpaper going through that portion of the engine and taking a toll on every part that it comes in contact with. The dirtier the environment that your rolling is required to work in should be counteracted by a more aggressive preventive maintenance program.

DIRTY FUEL

Dirty Fuel is the next culprit to contend with. It attacks your engines in another vulnerable area and it also comes in a couple of different forms, the first is fuel laced with suspended contaminants resulting in fuel filter failure (the first line of defense) which results in:

- Loss of engine horse power
- Possible fuel injector pump damage
- Possible fuel injector failure

Continuation of this article in next quarter of "The Barn Raiser" (Issue 22)



"The Barn" built in the 1930's to house Welsh ponies, serves as Mid-South's offices.

Water-based Epoxy for Concrete Walls

Adapted from: *Coating Solutions*, Fall 2005

Using concrete in the construction of a building's walls creates some challenges whenever it comes time to finish the surface, especially if the room's intended use is a laboratory, or area needing some resistance to chemical attack. It is desirable to put a simple painted surface over the concrete with a material that is esthetically pleasing, durable and which does both in an economical manner as possible. Products are available that can deliver these finish requests, but preparation is the key to success.

Like we mentioned, preparation is vital to a good system in most every scenario. The surface must be clean, dry, sound and offer sufficient profile to achieve adequate adhesion. A minimum concrete cure of 28 days at 75 degrees Fahrenheit is the first criteria that must be obtained. Next you need to insure that all curing compounds, form release agents and other foreign

materials have been removed by sandblasting, shot blasting or surface cleaning with a suitable chemical such as muriatic acid, etc. Finally, rinse the surface thoroughly to achieve a pH between 8 and 11 before applying any surface coat. (For further details refer to *SSPC-SP13/NACE 6* or *ICRI 03732*)

After the surface is properly prepared, apply masonry filler as required to provide a smooth surface followed by one to two coats of water-based acrylic epoxy (such as *Sherwin-Williams' Epo-Plex Multi-Mil*) to the paint manufacturer's recommended dry film thickness (dft) and you will be left with a tough, tile-like finish with excellent resistance to abrasion, moisture and chemical attack. All of this is done using a water-based epoxy that avoids the odor of a solvent epoxy.

Good-bye to Long Time Mid-South Employees

By: Mark Culpepper

It is never easy to say "good-bye" to someone you have worked with for many years, especially when that somebody has mentored you and been such a valued source for modeling your career and life. Recently, we have had to say so long to two such individuals and each have been instrumental in so many Mid-South Engineering personnel's lives. Andy Westerman and Jerry Brown have retired after 37 and 35 years with our company respectively. During that time they have helped in innumerable projects. Some might say, "They have spread out a lot of liability." Truthfully, they have helped not just the Mid-South team members, but a lot of our partners across all areas of industry during their tenure.

The greatest comfort that we have as these two "gentle men" retire is that each have allowed those of us who remain at Mid-South to have spent years learning (average of 21 years) from them so that most of the knowledge they possessed was passed down to the next generation. It's good to know that these men were true mentors and that they always wanted what was best for others. They have left us prepared to carry the baton and to run the race until we can pass it successfully to those we are mentoring and are next in the relay. Our hope is to do as well as Andy and Jerry.



Andy J. Westerman
37 years



Jerry L. Brown
35 years



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