

## Metro Info

- ▶ <u>30/10 Initiative</u>
- Policies
- Training
- Help Desk
- Intranet Policy

Need e-Help?

Call the Help Desk at 2-4357

Contact myMetro.net

Brainpower adapts coaches to new, cleaner engines

## By JIMMY STROUP

(July 10, 2008) Necessity – in this case the lack of replacement parts – became the mother of invention in the next step of the mid-life process: Re-power.

Originally, the New Flyer Hi-Floor 5000 series came with a Detroit engine. But it's no longer being manufactured, so replacement parts aren't being fabricated.

"We can't get that series engine anymore," said Curtis Clark, Running Repair equipment maintenance supervisor, who runs the re-power process. "It's obsolete. Parts are difficult to procure for this engine, so we had to come up with something different."

"Different" is a Cummins 8.9 ISL-G engine, the engine used in the newer articulated coaches, which meets current state and federal standards for engines, making it kinder to the environment than the 10-year-old Detroit models.

"The engine is cleaner," Clark said. "[Basically] 2008 standards versus what was the EPA standard in 1999. No contest."

One reason the engine is cleaner is that the Cummins engine uses a

catalytic converter instead of a muffler. Catalytic converters are nice to Mother Earth, but rough on designers—at least in this case. Central Maintenance had to squeeze the bigger, hotter converter assembly where the thinner, cooler muffler once went.

"The body shop had to redesign the rear quarter panel, since a catalytic converter will require additional maintenance that a muffler didn't," Clark said. "Also it had to be widened and lined with heat and flame-retardant material to make it safe."



David Garcia, a body repairer "A," removes corrosion from a New Flyer Hi-Floor 5000 series bus. The bus has already been steam cleaned and had its decals removed.

Installing the Cummins engine itself required some innovation. Custom mounting brackets had to be designed and fabricated at the machine and weld shops at Central Maintenance. The new red monster engines also required a stronger cooling system—more challenges for the Metro designers and mechanics.

For the 5000 series now enjoying a mid-life and re-power overhaul, Machinist Leader Terry Diederichs, Machinist Chris Young, Welder Leader Phil Martinez, and Master Mechanics Dave Santillanez and Mike Palmer designed the mounts and adapters that made the Cummins fit in the Detroit engine's former home. Equipment Maintenance Manager John Petres oversaw the technical aspects of the adaptation.

"What we're doing, no one has ever done this before; we're making an engine fit where another was designed to go," Clark said.

## Costs, time, and recycling

Each bus spends 680 hours at Central Maintenance getting its mid-life retreat. Of that total 280 to 350 hours are spent being repainted and undinged at the paint and body shop.

The mid-life segment of the process takes between 142 and 212 hours. The bus is then aligned with its new parts and sent to get a new engine and a new or rebuilt transmission. Clark's mechanics replace the old Detroit with a new Cummins in 188 hours. Support Shops Equipment Maintenance Manager Cary Stevens said Central Maintenance saves whatever it can to use as replacement parts for buses not quite ready for a mid-life overhaul.

How much does this cost? The budget for the Mid-life/Re-power program is \$25 million for the 2009 fiscal year. Central Maintenance turns out six buses a week on average, fresh and ready to hit the road for another 300,000 miles.

"Everyone is involved in this process. It's a huge program," Clark said.

Continued from Part I: No special trade in offers for these well-traveled vehicles.

Home Phone Directory Forms Online FIS Online