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Photos: Dave Sotero



A view of the shop floor at the RRC includes individual stations where mechanics rebuild entire components from start to finish.

## Major Overhauls All in a Day's Work at Regional Rebuild Center

- Mechanics and tradesmen save agency money by rebuilding buses from scratch

BY DAVE SOTERO

(July 22, 2005) When Metro Bus No. 7770 was brought into the Regional Rebuild Center, recently, the perils of navigating LA's traffic-choked roadways was apparent right away.

The bus was involved in a major front-end collision with a truck. Its entire front section – front and side frames, window assembly, roof, windshield, wheel arch and entrance doors – was mangled.

Damage to this extent could cost Metro a fortune in repair and replacement costs, but it is all in a day's work at this state-of-the-art rebuild center. The heavy maintenance facility has all the expertise and high-tech equipment needed to support Metro's 2,500-bus fleet.

The RRC includes body and paint shops, a midlife bus refurbishment program, mechanical unit repairs, engine and transmission repairs, machine, welding, radiator and electronic shops.

All these activities are coordinated to get Metro's damaged buses back on the street quickly – usually within 30 days – at a cost substantially lower than outsourcing repair work or purchasing new parts. With an

average of 350,000 miles between engine overhauls on both its CNG and diesel buses, Metro may well have one of the best-maintained fleets in the country.

### 'Light years ahead'

"This facility is light years ahead of most repair facilities in technology, organization, and how we rebuild components," says Mike Singer, RRC lead maintenance manager.

Singer, whose father and grandfather worked as agency employees, is responsible for overseeing repair operations at the facility. "We could build a bus completely from scratch if we wanted to. We have everything here you need to make and keep a bus roadworthy."



Mechanic "A" Angel Noriega repairs a diesel bus engine. Mechanics are put in charge of all phases of the engine rebuilding process to ensure production quality.

Within its 440,000 square feet of shop and warehouse space stands such advanced equipment as Computer Numeric Control (CNC) lathes and mills, diesel and CNG engine and transmission dynamometers and a top-of-the-line machine shop. Mechanics of all classifications work in its fully functioning repair shops.

"We're real proud of our capability to perform cost-effective repairs to mechanical and electrical components," says Milo Victoria, deputy executive

officer of Operations. "We can rebuild anything from alternators and starters to complete CNG engines and electronically controlled transmissions. Whatever we rebuild here is very reliable."

The RRC performed 85 major accident repairs, 351 bus paint jobs and 200 mid-life overhauls last year.



Metro buses line up for scheduled repairs at the RRC.

### 6-year overhaul

Since the average lifespan of its buses is 12 years, the agency refurbishes them every six years so they will be reliable for the rest of their lifespan. Buses receive new powerplant engines, transmissions, suspension and paint during the midlife refurbishment program.

To raise productivity, the facility has migrated away from an assembly line to a batch process in which individual mechanics are responsible for overseeing the rebuild process from beginning to end using "engine kits" that eliminate the need to pull multiple parts.

Metro expects to rebuild 643 transmissions this fiscal year for between \$2,800 and \$6,300 each. A new transmission would cost \$10,000-\$16,000. Metro saves more than \$5 million by rebuilding transmissions versus purchasing new ones.

For its 11 bus divisions, the RRC performs a critical role in helping maintain daily bus service schedules and lowering the divisions' operating costs.

"Without the RRC, the cost incurred by the divisions would be much higher," says Victoria. "For one, divisions don't have the equipment or the space to make those repairs. But here at the RRC, we do these types of repairs all the time. We bring the buses in here, get them rebuilt, repaired, and they're back out at the divisions making money."



The RRC Body Shop performs all structural and cosmetic repairs to the Metro Bus fleet. Most repairs, like this one on Bus No. 5433, involve front-end work.

### **Excellent safety record**

The RRC has demonstrated an excellent safety record over the last few years, going from an average of 113 injuries resulting in lost work time or treatment beyond first aid in 1999 to just 23 in 2004, an 80 percent reduction.

"The safety record of this facility far exceeds that of any other in this agency," Victoria says.

Of the RRC's 210 employees, nearly 178 are mechanics who undergo training classes taught by members of the Maintenance Instruction Department.

When the agency makes a new bus buy, the training staff works directly with the manufacturer to "Train the Trainer." The in-house trainers hold the same professional certifications as their counterparts at the bus company.

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POSTSCRIPT: Metro Bus #7770 is now back in revenue service. Employees spent nearly 400 hours restoring the bus to good-as-new condition. They don't expect to see this bus back at the RRC any time soon, but if it returns, the shop will be ready.

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EDITOR'S NOTE: A longer version of this article was written for the August/September issue of Metro Magazine, a transit industry publication.

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