



NEWS

FEBRUARY 4, 1999

CONTACT: BILL HEARD/MARC LITTMAN
MTA MEDIA RELATIONS
(213) 922-7479/922-2700
FOR IMMEDIATE RELEASE

INNOVATIVE THINKING, PERSISTENCE SOLVE SUBWAY WHEEL WEAR PROBLEM

Through innovative thinking and persistence, the MTA's rail operations staff has developed a solution to one of the Metro Red Line's most vexing maintenance problems: wheel wear.

By increasing subway car wheel life and reducing rail deterioration, the MTA expects to save about \$800,000 in maintenance costs this fiscal year. The improvement was achieved by matching wheels to rails with a new technique that minimizes friction and resistance. Industry studies indicate the potential for savings of 30 percent or more in electric power costs when wheel and rail resistance is reduced. The technique also is being extended to cars and rails on the Metro Blue and Green lines.

For months after the opening of the Metro Red Line in January, 1993, the MTA was repairing worn subway car wheels every 5,000 to 7,000 miles and discarding them after only 19,000 miles of service – a \$380,000 annual expense.

Today, wheels on all Metro Rail light- and heavy-rail vehicles are expected to last for at least 300,000 miles -- well within industry standards – and possibly more in future years.

Arriving at a solution to the perplexing wheel and rail wear problem required a great deal of research, analysis and "thinking outside the box," said Ralph de la Cruz, deputy executive officer, Metro Rail Operations. "We were really trail-blazing for the urban transport industry in achieving this breakthrough."

MORE...

To combat wheel and rail wear more critical than that of any other U.S. transit system, the MTA first purchased wheels of tougher steel. Rail maintenance personnel then tried a number of remedies including lubricating wheels and greasing the rails, especially on the curves. These and other adjustments extended wheel life to 75,000 miles. But, the real improvement came with the switch to "profiling."

In 1995, the MTA bought a "profiler" machine capable of grinding rails to exact configurations. As large as a truck, the machine grinds the rails to a pre-selected configuration as it moves along the tracks. The machine's manufacturer developed specifications that would ensure a perfect fit between wheels and rails both on straight-aways and curves.

The "profiling" procedure also required the MTA to change the way rail maintenance personnel shaped subway car wheels during the periodic "truing" process. Wheel "truing" machines were fitted with cutters that could match the new rail profiles.

Achieving an exact fit allows subway car wheels to ride atop the rails with a minimum of friction and without scraping the sides of the rails, even on curves. Minimizing friction increases the life of the wheels and rails, reduces the amount of electrical power required to move the trains and provides a more comfortable ride.

Rail maintainers completed profiling the Metro Red Line tracks between Union Station and the Wilshire/Westlake station in January, 1996. By the end of 1999, all other rails in the Metro Rail system will have been configured to new specifications.

MORE...

According to de la Cruz, the MTA is now the industry leader in rail and wheel profiling technology. The procedure has drawn international attention from trade associations, industry publications and other rail transit agencies.

Most recently, a delegation of German researchers engineers from the Berlin Technical University visited the Metro Red Line maintenance facility for a first-hand look at the profiling procedure. The two engineers have been retained by the city of Medellin, Columbia, to solve a serious wheel wear problem.

De la Cruz credits an MTA Rail Operations task force led by Track Maintenance Superintendent Bud Moore and Equipment Maintenance Superintendent Jack Eich with developing the innovative approach to the wheel and rail wear problem. Moore has presented papers at industry meetings on the profiling technique.

"There's a great story in our experience here," Moore recently told an rail industry publication. "We've helped advance a revolutionary concept that can be applied to any (rail) line, anywhere."

###