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The mode selector knob, inset and below, allows the operator to switch between automatic (ATO) and manual (MTO) modes.



Look, ma! No hands. With just a flick of a switch (inset), Metro Rail Train Operator Robert Rodriguez puts the train in Automatic Train Operations (ATO) mode. But will running in automatic make train operators lose control? No way, says the six-time Rail Rodeo champ. Train operators must make one round-trip in manual mode every shift to keep sharp.

Easy rider: Metro Rail subway cars switch to automatic mode

- **Credit roll:** The switch to ATO was accomplished through the hard work, cooperation, and diligence of Metro employees.

By GAYLE ANDERSON

(June 10, 2008) For Metro Red Line and Purple Line customers, the ride just got smoother.

Little do passengers know that the smooth train ride along the 17.4 miles of subterranean tracks traversing the City of Los Angeles is running on a new system called Automatic Train Operations.

"Putting ATO in service is a major milestone and one that is improving vehicle reliability, maintenance, ride comfort, and on-time performance," said Rail GM Mike Cannell of the 480,000-pound subway train.

After five months of studies, tests and evaluations, Rail Operations began to use the new ATO system in March, putting the 104 heavy rail cars in automatic mode for the first time since the debut of the A650 Breda cars in 1993.

It was a seamless transition from the more taxing, manual mode to the ATO system.



Metro Rail Train Operator Jacqueline Luna departs from Union Station in ATO mode. "I love it. Everything is running smoother and more efficiently. From the brakes to the precision platform stops, absolutely everything is more efficient," she said.

The propulsion and brake systems were designed to be controlled electronically, enabling the trains to run more accurately and efficiently in automatic, Cannell said.

That efficiency translates to a significant reduction in trouble calls, fewer manpower hours spent to respond to problems on the main line, and less costs to attend to propulsion and brake failures, which were occurring as often as three times a day.

On-time performance has noticeably increased. "Those stubborn propulsion and brake failures have now been reduced by approximately 80 percent and that is huge," Cannell said.

In early October 2007, Cannell asked his team to reevaluate the need for the ATO system.

"We wanted to take another look and use the technology that's available today to bring the system up safely and efficiently, providing our customers with more reliable and efficient service," he said.

Brake and propulsion failures would decrease dramatically in the ATO mode, reported George Kennedy, Director of Rail Vehicle Acquisition and Maintenance Operations.

In automatic mode, the ATO generates propulsion commands electronically, he said, "meaning the system accelerates, maintains track speed, decelerates and brakes the train to the proper location alongside the station platforms."

Undetectable to passengers but important to operators is the ATO equipment – a massive, intricate computerized system that is fronted by a simple mode selector

ATO Credit Roll

The switch to ATO involved engagement of all Rail departments, including Engineering, Rail Fleet, Wayside, Operations and Facilities. Train operators and supervisors were re-trained during revenue and non-revenue hours, ensuring a seamless transition to a new way of operation. This effort was successfully accomplished through the hard work, cooperation, and diligence of Metro employees, including, but not limited to, **Barbara Harris**, Rail Division Transportation Manager; **Linda Leone**,

knob on the operator’s control board.

The mode selector knob allows the operator to switch between automatic (ATO) and manual (MTO) modes.

In ATO mode, the operator monitors the automatic operation, keeps a safety eye peeled, makes announcements and opens and closes the doors. In manual mode, the operator controls the acceleration and aligns the train when it berths at the platform.

Operators are required to complete one roundtrip in manual mode during every shift. The practice ensures the operators remain proficient in all modes of operation, such as in situations determined by ROC that may require operators to override the ATO and take charge of the controls.

The switch to ATO involved engagement of all Rail departments, including Engineering, Rail Fleet, Wayside, Operations and Facilities. Train operators and supervisors were re-trained during revenue and non-revenue hours, ensuring a seamless transition to a new way of operation.

“After operating on manual for years, getting back to automatic mode is a victory,” said Duane Martin, Director of Transportation. “In automatic mode, the train gives a smoother ride.”

“We’ve already seen a significant reduction in delays associated with wayside and vehicle issues,” Martin said.

Rail Integration and Instruction Manager; **John Johnson**, Rail Integration and Instruction Assistant Manager; Rail Transit Operations Supervisors **Esther Pippins**, **Frank Hooks**, **Carl Williams**, **Ricardo Perez** and **AJ Johnson**; **Ken Arvidson**, Rail Fleet Services Capital Projects Manager; **Fred Kan**, Rail Fleet Services Red Line Maintenance Manager; **Gary Dewater**, Rail Fleet Services Red Line Instructor; **Ken Chu**, Rail Fleet Services Maintenance Specialist; **Dan Garcia**, Rail Fleet Services Maintenance Specialist; **Min Nguyen**, Rail Fleet Services Maintenance Specialist; **Wyman Jones**, Traction Power Manager; **Remi Omotayo**, Wayside Systems Manager.