

T workers keep Mattapan's classic cars on the tracks

By *Bill Forry* ^[1], January 28, 2016

The MBTA's Presidential Conference Cars – the vintage orange and cream-colored trolleys that shuttle passengers between Ashmont and Mattapan Square – are usually referred to as a “fleet.” But there are only ten such cars still among the living here in Boston, and, typically, just six of them are actually on the tracks at any given time.



A Mattapan PCC trolley makes its way into Ashmont Station during a winter storm. Mary Truslow photo

So for our exercise, think of them as the Mattapan Rattlers, your transit system's rendition of an old-timers all-star team in throwback uniforms that are as crisp and colorful as the day they were pressed into service in the waning days of the Second World War. They are charming, resilient, a pleasure to ride and to watch as they skip jauntily past – er, make that “through” – the graveyard.

Ok, so sometimes they pull a hammy rounding Central and heading for Butler. It's not like the young bucks over on the Red Line or even the Blue have never tripped over the foul line. What the Mattapan trolleys have lost in their dotage they more than make up for in grit and – all right, we'll say it – some good old-fashioned American chutzpah.

These erstwhile museum pieces are still hauling you and your neighbors around every day for two main reasons. One, because the engineers and tradesmen who built these eight wheeled-wonders at the Pullman-Standard factory in Worcester, MA were a talented group of people who made a terrific trolley. Secondly, the men and women who work at the MBTA's Everett Shops are sprung from that same well of workmanship and ingenuity.

The Reporter saw evidence of that this week on a tour of Building B, the hangar-like heavy rail maintenance facility near Sullivan Square, where 140 union workers – electricians, mechanical engineers, welders, sheet metal “tin-knockers” – keep more than 600 MBTA rail vehicles in service. It's an impressive operation where workers are capable of fixing and fabricating up to 15,000 individual components – brakes, engines, switches – in a month's time.



Edward Belanger, maintenance supervisor of the MBTA's subway main repair facility in Everett, explains the components of the “truck” that is the propulsion unit that sits under the Mattapan PCC cars. On average, the MBTA repair crews receive one truck per month to re-build or repair. Bill Forry photo

This cavernous workshop was a madhouse last winter. It was “Hell.”

That's how maintenance supervisor Edward Belanger summed it up as he and a team of T managers showed The Reporter around the place. This year – so far – the pace has been less frantic, but nonetheless the team knows that every winter is a perilous time for the nation's oldest transit system.

“We have a very strong team here at Everett – engineering, mechanical, electrical,” explained Stephens C. Hicks, the MBTA’s director of heavy rail maintenance. “And we are focused on car count support. Every single day we know we have to support the lines so they can make car count. And right now our other major goal is for a strong performance this winter.” To illustrate this, Hicks and the building’s superintendent, Louis Rossino, unlocked a fenced-off storage section of the plant, where scores of new train engines are wrapped in plastic and ready to be shipped out to car yards across the region.

In the context of this sprawling system, the ten-car Mattapan line represents an outsized problem for an agency stretched to its limits in terms of budget and manpower.

“The [Mattapan PCC] cars take a lot of man hours to repair per vehicle,” said Hicks. “When you think about that in terms of the miles they run, they take a lot of man hours to maintain them.”

There’s no question that keeping the Mattapan trolleys as a viable rolling stock goes way beyond the traditional definition of “maintenance.”

Your Westinghouse DH10 air compressor just blew a gasket rounding the bend at Cedar Grove? Aw, you don’t say? Well, that’s not good, because there are no more DH10 air compressors lying around waiting to replace yours. The same is true of just about every valve, crank, and motorized piece of these conveyances. The tradesmen at the Everett Shops have to make them.

And most of them are attached to this sedan-sized contraption over there. These guys call it “the truck.” It’s the undercarriage of the trolley that makes it move and stop – a propulsion unit that includes a motor and air compressors and brakes. It’s the business part of the trolley – there are two of them under each car – and it’s the part that typically gets shipped here from Mattapan to get serviced. On average, one of these sections gets trucked over to Everett once a month for repairs or preventive maintenance.

“Everything on here was pretty much rebuilt here, from the brakes, the gear units, any of the bolsters, the body supports,” said supervisor Belanger, an old “die-and-cast” tradesman who knows these trolleys inside and out. “There’s no telling how old this unit is because it’s been rebuilt a number of times. This could have a little blend of everything for several decades.”

Basically, every piece on this essential platform of the PCC car is obsolete. But Belanger doesn’t mean that as a pejorative. Ask the Everett team about the original design and manufacture of these cars and their eyes light up.

“It’s brilliant,” said Belanger. “These cars— from a machining standpoint, a casting standpoint – they’re a rarity.”

What does he mean? Belanger walked over to a workbench where a black-iron brace is positioned. It looks just like one of the components that sits on



Expert care: Darren Hawe, a 32 year-old second class electrical worker with Local 717 IBEW, repairs a 129MG generator used in the Mattapan fleet of PCC cars at the Everett Shops. Bill Forry photo



Westinghouse DH10 Air Compressor: An essential component to the PCC cars, the MBTA team has been able to repair this original compressor, but has not had to rebuild them from the ground up— yet. Bill Forry photo

top of the Mattapan truck that's being fixed nearby. "Something simple like this bolster that sits in the center of the truck allows things to swing this way – and this way. It gives the car some flexibility so it doesn't strain. This component is basically handling half the weight of the trolley," said Belanger. "Now, the intricacies of the way it was cast – this whole thing only weighs 140 pounds – so whoever designed it knew exactly what they were doing when they designed it."

This stabilizing bolster is just one of several components to the PCC cars that the MBTA crews still regard as a marvel of engineering. Joe Forlizzi is one of the Everett engineers who led the restoration team that refurbished all ten PCC cars between 1999 and 2002. He has copies of the original Pullman drawings used to manufacture the vehicles and he has digitized them for continued use.

After the last round of restorations, Forlizzi said, "We had some access to new parts, either mildly used or brand new. But since then, we've essentially used all the new inventory. After 15 years we've exhausted most of the parts that we use a lot. Almost all of these parts are consumable. The track brakes make contact with the tracks all the time and they wear out."

Belanger points to the part Forlizzi is talking about. The MBTA team had to reverse engineer and recreate this track brake because it was, first off, obsolete; secondly, the original used asbestos as an essential material.

"The track brake is an electro-magnet that is used in emergency situations and also when passengers are boarding or getting off the train," explained Belanger. "When you energize it, it sucks itself down to the track and holds the train in place. It's science class. The nail with the wire that you hook to the magnet. It's like that magnet, but it's just 300 pounds and there's two of them."

"These we could not get made on the outside so we actually used a lathe, set it up to do the winding on the coil, then we did the machine shop work to do all the other components."

Instead of asbestos, Belanger and Co. "found a material that's used by Disney World. We purchased the material so we know it's safe and we used that."

Making just one of these track brakes — now that they know how — takes an estimated 75 hours of work-time, according to Hicks and Belanger.

The team then walked over to the far end of the maintenance hangar to get a look at one of those Westinghouse DH 10 air compressors. It generates all the air that powers the trolley's brakes, opens and closes its doors, even runs the windshield wipers. It's one of the essential components of the PCC that the Everett team has never had to build from scratch. So far, they've been able to repair them rather than replace them.

"This is one of the genius things about the design of the cars," says Belanger, admiring the heavy metal piece. "Even back then they were trying to save space and weight."

Across the workshop, second class electrical worker Darren Hawe was working to re-wire an original 129 motor-generator that converts the 600 volts of electric current that is delivered via overhead wire into a lower voltage to charge the trolley's batteries. It's another essential mechanical component that is routinely being serviced here. On average, each MG unit is sent back here twice a year for maintenance.

"Because of the age of the vehicles, any little problem, we want it sent over, explains Hicks, the heavy rail maintenance director. "We cannot buy new parts, so we want to fix it before it's destructive."

Communication with the foreman at the Mattapan yard is key. He "will call in and we will work on those key items as quickly as possible. He has very few trains and very few spares. That means we have to be very flexible and react quickly to anything he needs to make service."

How long can this go on? And, how much does it all cost?

Good questions. The MBTA's Fiscal and Management Control Board members want to know the answers, too. They've ordered a full review of the Mattapan line's viability and costs as part of a larger review of the MBTA's vehicle fleet this year.

The existential question – can the MBTA staff keep these trolleys running into the next decade? – is not one the men who oversee the maintenance division are keen on answering, at least not on the record to a reporter.

My impression is that the skilled trades people at Everett Shops could keep these trolleys running as long as we ask them to.

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