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Press Release

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[Metro-North](#)

IMMEDIATE

Metro-North Introduces America's First High-Tech, High Wire Act

MTA Metro-North Railroad's Power Department is conducting a high-tech diagnostic examination of its entire New Haven Line catenary system to improve performance and identify needed repairs to the complex system of wires that power the trains.

Metro-North, in conjunction with the Connecticut Department of Transportation, has contracted with Gerken SAS, a French manufacturer of carbon brushes, and Selectra, an Italian technical analysis company, to perform a detailed, high-tech analysis of the catenary system over a two-year period.

Using digital optics, every inch of the New Haven Line catenary system will be photographed. The catenary is the high voltage wires and their associated supports - parts of which date back to 1913 - that provide the power to the electric trains through the rooftop pantograph, a spring-loaded arm atop each New Haven Line train car.

This multi-functional process uses sensors including a camera, just as one uses one's eyes and, similarly, transfers the images to a "brain." This brain-like computer will determine the height, stagger (horizontal deviation of the wire from centerline of the track below it) and contact wear on the underside of the catenary wires to determine any present or potential problems.

Actual catenary conditions will be compared to established criteria for these parts to ensure reliable operation.

And just like one's own eyes, these sensors have peripheral vision, capturing images on either side of the wires, such as the structures, stations, etc. along the right-of-way. The exact location of a photographed wire can be determined because its GPS coordinates are recorded and will be correlated to railroad waypoints like pole numbers, stations, bridges, and towers.

The system will capture close-up video images of the pantographs' "shoes," including the carbon wear strips set in metal holders that are positioned on the top of the pantograph arms and rub against the bottom of the electrified catenary wires in order to study the pantographs' performance, position, and electrical commutation.