

INGENIOUS IDEAS DEPT.

Ensuring The Safety Of America's Railways

(NAPSA)—An estimated 100 million of the 128 million commuters in the U.S. live in metropolitan areas. In addition, the latest census data shows that more Americans are leaving for work between 5 a.m. and 6:30 a.m., are commuting for longer time periods—between 60 and 90 minutes—and are leaving their home county to work in a nearby county.

These commuters use both commuter railway systems as well as subway trains. And during rush hours, the route network is working to full capacity. That's one reason why the tracks are highly stressed; heavy traffic could cause dangerous track deformation.

The Union Pacific Railroad is one of the most important North American railroad companies. To ensure efficient maintenance and safe trackage, the company uses a high-speed test and measuring car, called EC-5. Developed to check track quality, it's a diesel railcar with two driver's cabs, four driving axles and several measuring units.

To make the track work more efficient, all required data is collected at the same time. For a high precision of measurements, the EC-5 is equipped with a non-contact measurement system and integrated GPS navigation.

As it would not be effective to break into the train traffic—all trains have to arrive/depart as scheduled—the test and measuring car has to do its job between other trains. Therefore, the EC-5 has to operate at high speeds, up to 100 miles per hour. Even at such speeds, the measurement



Test cars help ensure that rail systems are safe.

system is able to register all irregular track profiles and dangerous abrasions. Even the ballast profile could be checked.

A new generation of measuring cars is the TGC-3, which is used by the New York City Transit Authority for the New York subway, with its 230 miles of tracks and 4.5 million daily passengers. Components from Voith, a first-class supplier for drive systems, are used in the TGC-3.

The two-car train set is also equipped with a noncontact measurement system and integrated GPS navigation. As a bigger part of the trackage and the stations are tunneled, the TGC-3 has a special lightening system.

Because of the universal use of these cars, an independent power source is required. Therefore, a diesel motor is the right choice. As Voith is one of the leading suppliers concerning the drive engineering, it provides couplings and final drives that make using these measurement vehicles robust and efficient. And their turbo transmission provides a good driving performance—especially for subway systems. To learn more, visit www.voithturbo.com.