



Sept.05 London Underground Vehicles – Emergency Brakes

In September 2005 **TestPRO Limited** was pleased to gain a contract to design and develop equipment associated with routine maintenance and checking of the emergency brake actuation system on Northern and Jubilee Line vehicles.

The vehicle maintenance contractor, ALSTOM plc, is committed to a program of improvement in the areas of safety and reliability for all the vehicles in their care, and asked us to assist with several key projects.

As one of the major safety features with all rail vehicles the emergency braking system is designed to operate automatically when a vehicle passes a signal at danger, The Northern and Jubilee Line vehicles are fitted with a mechanical/pneumatic system to achieve this capability. The reliability of these, and any other systems is dependent on regular maintenance and checking of the system components.

Initially **TestPRO Limited** was able to assist ALSTOM by designing a suitable gauge for checking the operation of the emergency brake actuation lever while the vehicle was in a depot environment.

Using our comprehensive on-site testing capability we were able to make multipoint pressure and relay timing test measurements while emergency brake simulation tests were carried out on the vehicle in the maintenance depot. The test results were used to fine-tune the braking operation by system adjustments and to verify faultless operation.

To cater for the continual quality and maintenance checks required on these complex systems **TestPRO Limited** developed a depot based test bench for the comprehensive measurement of brake operation parameters. The test bench instrumentation capability includes measurements of line pressures, actuation lever load and angular movement, and electrical relay timings.

The quest for greater reliability on the London Underground will continue by the constant development of maintenance techniques and **TestPRO Limited** are proud to be a part of that progression.