

The Severn gauge bar – increased output and higher quality surveys from possessions

Severn Partnership's investment in new survey technology and their innovative approach to survey methods is producing optimum results during engineering possession works.

In January 2008, The Times reported Network Rail chief executive Iain Coucher's call for greater engineering efficiency to meet the demands of the 365 day railway. Severn Partnership's response combines state of the art surveying technology, bespoke survey methods and phased quality control to deliver night time engineering possession surveys on time and to a consistent high quality.

While permanent way design engineers increasingly demand greater accuracy and repeatability of survey data in absolute coordinate systems, they still want better quality data within the limited time available during rules of the route possessions. While survey efficiency will always be important, repeatability is crucial, particularly with critical as-built surveys used to achieve safety standards and through alignment design (TAD) such as the

AO9 line speed enhancement project.

The quest for the optimum solution involved Severn Partnership in a journey taking in many conferences, countries and manufacturers. Eventually, a partnership with a German manufacturer culminated in the incorporation of a number of special design requirements into what finally emerged as the Severn gauge bar (SGB). The on-site methodology for the SGB was then refined and optimised on a test track with concrete control pillars used to exhaustively test new developments. The system was found to work equally well with conventional survey control and track machine guidance control (TMG) or spigots.

In November 2007, the efficiency and accuracy of the system was further enhanced when Korec's first S8 total station was integrated into the system. The internal accuracy of the SGB is sub millimetre and can produce data along rail running edges or centreline, a preference of some permanent way engineers. The system delivers quality data over longer run out distances allowing more track survey outputs from a T3 possession and produces high accuracy track geometry survey

data in an absolute coordinate system with an engineering scale factor of 1.

In the last year, bespoke clearance software has been commissioned to increase survey gauging rates even further and work is now underway to incorporate close range high speed laser scanners to improve the accuracy and consistency of tunnel clearance data.

The SGB system is delivered by the highly qualified Severn Partnership team which combines extensive theoretical survey knowledge, a deep understanding of its correct application and an enthusiasm for innovation, all attributes necessary to meet the challenges of the 365 day railway.

For further information please contact:

Severn Partnership
Mark Combes
T: 01743 874135
E: mark.combes@severn-partnership.co.uk

Nick Blenkarn
E: nick.blenkarn@severn-partnership.co.uk