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Alton Towers visitors enjoy the ride with ABB drives

Thousands of visitors will find it easier to get around the Alton Towers leisure park during 2002, thanks to the upgrading of its monorail system using DC drives from ABB.

With rides and attractions spread across the 500-acre site in Alton, Staffordshire, visitors have a lot to see and do. Making the most of a day at Alton Towers was made easier with the introduction of the park's monorail system, offering fast, safe journeys between the popular Towers Street area and the car park. In upgrading the monorail, after 15 years of dedicated public service, Alton Towers chose ABB equipment supplied by Telford-based Independent Control Systems (ICS).

ICS managing director, Trevor Darrall, explained the upgrading: "Each of the trains, originally imported from Canada, is powered by eight 12.3 kW electric motors. These have been controlled by analogue converters which had been reliable for a long time, but nothing lasts forever and they were starting to suffer occasional breakdowns".

The old analogue converter on one of the trains was replaced by the latest digital DC drive technology, ABB's DCS 500 converter, which delivers accurate torque and speed control across a wide power range. It also offers greatly improved diagnostics capabilities, yet the 450 A unit chosen has a small footprint which enables it to fit easily into the confined space available.

Mark Prosser, the rides electrical maintenance manager for Alton Towers, said, "We were already familiar with the ABB drive, as our 'Oblivion' ride uses two DCS 500 units. They have performed superbly, with equally outstanding service and support from ABB. Using the same drive on the monorail trains makes sense because we know the technology and we gain the obvious benefits of equipment standardisation."

As part of the upgrade, ICS designed a custom interface to the existing PLC supervisory system, taking advantage of the availability of original technical drawings for the analogue equipment. The work of the former system, involving galvanic separators to carry tacho signals, is now all handled within the drive. ICS also trained Alton Towers engineers, so that further upgrades could be carried out as in-house projects using the same software parameters.

Mark Prosser said, "We have worked with ICS for a number of years on a variety of projects, involving drives, motors and other systems, so we knew the quality of both ICS and ABB. After trialling the first upgraded train for a year, we were so pleased with the performance of the DCS 500 that we have now carried out a second upgrade ourselves and will be using the same system for all ten trains."

During the height of the visitor season, each of the 40 metres-long trains may have to carry up to 4,800 people per hour along the site's 3.2 km of monorail track.

"Our visitors could have their day out spoiled by having to wait around for trains that do not work," said Mark Prosser, "so we have to have a system we can trust. That is why we are so happy with the ABB DCS 500 solution implemented by ICS: we have seen for ourselves that it delivers the high performance that we expect. We use a variety of ABB equipment at Alton Towers and we would have to say that it all performs excellently."

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Caption: Alton Tower's monorail system has been upgraded with ABB DC drive technology supplied by Independent Control Systems. Visitors use the monorail between park areas to rides such as Nemesis.

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