GETTING TO THE MINE ON TIME

Three draglines, two continents, one objective
mine sites are often situated at remote locations. Getting a dragline there involves dealing with a variety of circumstances, such as negotiating gravel or sand roads, having to remove power lines or reinforcing the road after heavy rainfall in the desert. The greatest challenge is timing; the dragline needs to be operational as soon as possible. State-of-the-art equipment, coupled with knowledge and experience, ensures the heavy equipment reaches its destination safely and on time.

Slashing travel time for El Segundo Mine, USA
Peabody Energy needed to move their 3500-ton dragline over a distance of 22 miles (32 km) through the New Mexican desert to their El Segundo Mine.

The dragline, the size of a ship on dry land, is designed to ‘walk’ by using shoes that lift and advance the machine, at a speed of one-tenth of a mile per hour. However, using this method would require generators, and road and power line construction support 24 hours a day for at least a month. The better option was to load the dragline onto SPMTs and carry it through the desert, reducing travel time with 60%, from over 30 to 12 days.

The dragline was the first machine of that weight to be transported over such a long distance. This job required the removal of the bucket and walking shoes in order to load the dragline onto trailers for more feasible transport. A total of 150 lines of SPMTs were used, 5 trains wide by 30 long. The total weight of the transport was 4,400 ton.

Preparing for the job, the crew faced some interesting situations, including a width restriction on the roadway due to an archaeological excavation site of native American artifacts. Because of these width restrictions the SPMT train was longer than preferable, and a special support structure was designed to complete the job; we added a steel structure made of beams, each 3 ft tall, on top of each trailer to function as load spreader to ensure the load was divided evenly over the longer trailers.

A 7% incline was another factor to take into account. Extra pulling power was provided by placing scrapers in front of the transport.

Unusual weather provided the final force to be reckoned with. It was outside the rain season in New Mexico, but during transport there were days when it rained heavily, causing the roadway to need reinforcement from steel plates. On other days snow made transport problematic. Despite these circumstances the task was completed safely and effectively.

Brad Brown, Senior Vice President of Peabody Energy Southwest Operations, said: “Unique circumstances prevailed with our dragline move. Our technical team was innovative in working to find solutions that optimized our ability to move the dragline safely in an efficient and effective manner. Our personnel collaborated with Mammoet to devise step-by step procedures ensuring a successful result that was well executed and without incident.”

Peabody Energy dragline transport, El Segundo Mine USA.
Late last November, Fortescue Metals Group (FMG) approached Mammoet with a request to transport a Liebherr R996, weighing over 650 tons, from FMG’s Christmas Creek mine to another mine it had recently opened, Solomon, 250 kilometers away. Two key constraints: don’t take the Liebherr apart, and do get the job done before the fast-approaching Christmas ban on heavy hauling.

The equipment Mammoet settled on for the job was a double 24 Goldhofer with 6 block trucks, and then, for the last 6 kilometers, including a slope, a double 18 axle line self-propelled modular transporter (SPMT).

Mammoet had just loaded that Liebherr when, in early December, it was approached by BHP Billiton Iron Ore with a request to move a similar digger, a Liebherr R996B – this time just 35 kilometers. And once again the job was urgent, with the Christmas break looming.

As it happened, the weather was delaying the actual transport of FMG’s Liebherr. With just 10 days to go, it was decided to transport BHP Billiton’s Liebherr first, and then FMG’s.

36 axle lines – the SPMTs plus auxiliary equipment – were shifted 500 km to where the BHP Billiton Liebherr was, at Jimblebar. This time the route would take in two national-highway crossings, thus entailing night-time transport, as well as a high-voltage power line that would have to be moved out of the way and then put back. Once the digger was off-loaded at the destination, Whaleback, the SPMT would be taken back to FMG’s Solomon mine where it would haul the FMG Liebherr on the last, six-kilometer leg of its trip. Both FMG’s and BHP Billiton’s deadlines were met, getting the draglines to their respective mines in time for Christmas.