



PRESS INFORMATION

Hot rods

Building the 2,200km North-South Railway would be a major undertaking in the kindest of climates – but driving it through the scorching hot Saudi Arabian desert is an added challenge. Brian O’Sullivan reports on how a fleet of Volvo’s largest excavators and haulers are keeping their cool.

Saudi Arabia is a country of extremes. Comparable in size to Western Europe, its 2.25 million square miles occupy about 80% of the entire Arabian Peninsula. Not only is it big but it is extremely hot and arid – a peak of 51.7°C (124°F) being the world’s highest ever recorded temperature. Mostly uninhabited desert and although not blessed with much rain, it more than makes up for it in natural commodities. Sitting on the world’s largest reserve of oil it also has valuable deposits of phosphates and Bauxite. Fuelled by all time high commodity prices, these are buoyant times for the Kingdom of Saudi Arabia.



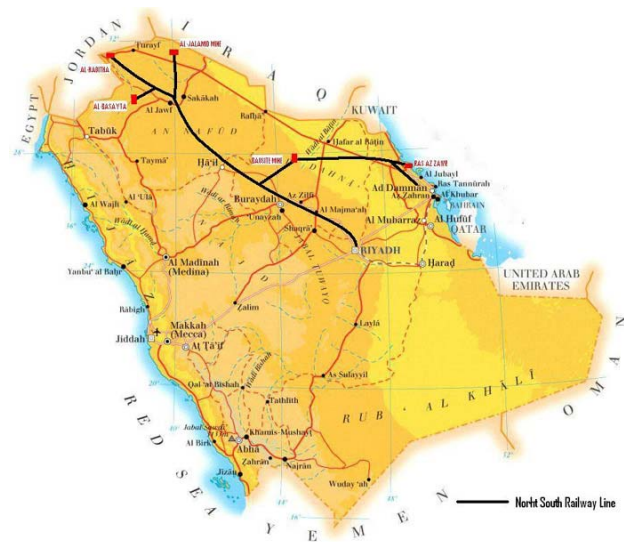
The Kingdom has recently embarked on a series of massive infrastructure projects that are designed to modernise and extend the country’s congested transport links, connecting all the major cities and the creation of several entirely new cities. Like so much of the thinking in the Middle East today, the ambition of the schemes are astounding. Take the rail network – currently there are 1,000 km of rail – the Railway Expansion Program will add a further 3,200 km of track to the existing network.

The largest part of this scheme is the \$2.8 billion North South Rail Project (NSR). At 2,200 km long, when finished the single line track will connect the northern phosphate mines at Al-Jalamid and the Bauxite mines of Zabirah south to the coast at Ras Azur. It will also carry passengers and general freight from Qurayyat through the urban centres



to the capital Riyadh. When finished over 1 billion ton-km of cargo will be transported each year, reducing the time from mine to port by literally days.

The other common factor of projects in the Middle East is the speed with which things are built. The NSR project has been broken into sections that can all be worked on simultaneously. Respected contractor Abdullah A.M. Alkhodari Sons Company (KSC) has been awarded the contract to build 140 km of track across the Al-Nafud Desert in the remote Jawf Area. The contract involves the mammoth task of moving 125 million cubic metres of earthwork (and remember that this is just for one section of the NSR scheme).



“The desert is good for contractors,” laughs Mohammad El Qadi, KSC’s friendly and enthusiastic equipment manager. “The job is big but the process simple – apart from some scorpions, a few snakes and a lot of sand, there is nothing to get in our way!” ‘Simple’ is a relative term – over the 140 km stretch that means 75 million cubic metres of fill and a further 45 million of cut. “We don’t need to import any material,” says Mr. El-Qadi. “Sand is our raw material and the Cut becomes the Fill.”

This is essentially a machine project, and KSC has invested large sums in buying the latest construction equipment. Along with a fleet of 30 Volvo A35D and A40D articulated haulers, KSC also has the largest fleet of Volvo’s biggest excavator – the 70 tonne EC700B. The machines have been supplied by Alrehab Equipment & Machinery, Volvo’s successful dealer in Saudi Arabia, and are being concentrated on a front – meaning progress is incredibly fast.

Despite the vastness of the desert accuracy is still important – the construction is also more than laying tracks on the sand. The sand embankments are often 200m wide at their base and rise at a gradient of 3:1 to a height of up to 70m. The loose sand is retained by blocks and compacts down to form a very dense surface. Although the sides of the embankment are steeply raked, the trains that will ultimately run along it will never have to face an incline greater than 1.6 degrees.

Part of KSC’s fleet of over 700 construction machines, the Volvos are proving more than a match for the contract and the climate. “The EC700Bs are working very well,” says Mr. El-Qadi. “They work all night and day and yet the only problems we have had



is one broken fuel pump and a damaged injector. The Volvos are much quicker than our other excavators too – and use less fuel. In fact they are fuel and time efficient.”

The 30 haulers are also working well. The sand is dense and heavy, and thanks to the fitment of a tailgate, the haulers go fully laden. “You can’t overload the haulers,” smiles Mr. El-Qadi. “The sand is so dry that any excess simply flows over the top of the haul body.” Tyre wear is also good, as the soft sand is not abrasive and running parallel to the rail embankment is a newly built four lane highway that the haulers can use. Haul cycles are typically no more than about 600 m.



It is interesting that fuel efficiency is considered a priority – this in a country where a litre of diesel costs less than \$0.10c. But even at that price it is a real consideration: KSC brings in five tankers filled with 35,000 litres of diesel every day. Added to that, over \$1 million is being spent on lubricants, filters and maintenance *every month*. Oil testing Landcruisers capable of climbing the steep embankment patrol the site, and over 40 machines have their oil changed every day. “The 22 hour work days and the high desert temperatures put a big strain on the lubricants,” says Mr. El-Qadi. Part of the thinking behind this is preventative – keeping the machines in peak condition to maximize machine uptime. KSC does the daily maintenance, but defers to Volvo dealer Alrehab for major repairs.



There is still over a year to go before the railway opens in the third quarter of 2009, but already KSC is 15% ahead of schedule. "Much of this progress has been down to machine efficiency," concludes Mr. El-Qadi. "We have invested wisely in acquiring only the latest and best machinery available."

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