

MONORAILS

Much has been written about monorails but there are still very few monorails in the world.

The concept is not new - the Wuppertal Schwebebahn was built in 1901 although the line was re-equipped with new rolling stock a few years ago.

Since the 1960s a small number of monorails have been built, mainly to provide service in amusement parks, fairgrounds and at airports. Notable exceptions have been Harbour Link Sydney and Kita Kyushu, Japan, the latter being a 8.4 km urban line opened in 1985.

Monorails comprise two basic types -

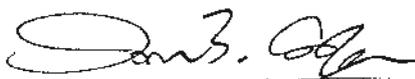
- (i) where the cars straddle the track, as in Sydney, and
- (ii) where the cars hang from a beam, as in Ofuna, Japan.

In general these operations comprise a single track in each direction or a single track loop. Most do not even incorporate a cross-over and each car operates up and down the same line. Point work is usually limited to the depot.

The reasons for this seemingly basic operation is the very complex and expensive pre-stressed concrete beam switching mechanism required for monorails compared with the equipment used on a conventional duo-rail system.

There has always been much discussion as to whether a monorail offers any advantages over light rail. The monorail has always appeared to be an unduly complex solution to a simple task of moving people. For example, a typical bogie of a monorail comprises ten rubber tyred wheels : there are four vertical running wheels each driven by an electric motor (the equivalent of the four steel wheels on a light rail bogie) but there are also four horizontal guide wheels and two horizontal stabilising wheels. The two tracks, upon which the light rail vehicle runs, act as both "guide" and "stabiliser" thus eliminating the need for six wheels per bogie.

Monorails can be quieter than some light duo-rail vehicles because of the rubber tyres of the monorail and, because the electricity supply is incorporated in the guide beam, there is no need for any overhead wiring. Because of the bulkiness of the guide beam (usually up to 1.5 m high) and the conduct of the electric supply through the beam, monorails are elevated.



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