



From top:
Chongqing Monorail,
Sentosa Express and
Tokyo Monorail.

MONORAILS HAVE CHARM BUT NO CRITICAL MASS

When talking about city transport, it would not do justice to ignore the position of monorails as part of the system.

Monorails have served cities for many decades.

Electrically driven and mainly running on viaducts, they add to the charm and elegance of a city with their modern and environmentally friendly look.

Monorail passengers usually get scenic views and are unlikely to lose their way as they can see where they are going. That is why monorails are usually welcome and accepted.

There are many monorails serving theme parks and as airport transfers, but apart from Chongqing, Tokyo and Sentosa in Singapore, we do not see many successful monorail systems serving as a main city transport.

The main drawbacks are carrying capacity and maintenance.

By definition, a monorail system is supported by a single girder rail to minimize weight and space.

With the far thinner structure, it can be designed to easily blend in with the surrounding architecture.

But this advantage also turns out to be its main shortcoming.

A two-car monorail train can carry a maximum of 200 passengers.

Compare that with a mass transit train that can carry over 2,000 in shorter headways (times between trains) and it is easy to see that monorails cannot provide the throughput to meet a busy city's demands with a large number of commuters.

In capacity terms, they are not much different from buses, except that they do not occupy road space.

It is not practical to have long monorail trains as the overhead stations will become huge and intrude into the city's landscape.

Monorails are also proprietary systems, meaning they are specially designed and not interchangeable with other systems.

Like a custom-designed car, maintenance can only be effectively



Nuts and bolts

Edmund Leung

performed by the original manufacturer. Imagine how a monorail operator can be expected to cope with a system running for 30 years when the manufacturer has gone bust or stopped production due to a changed marketing strategy, and the operator is left with no expertise to maintain it for reliable operation.

Many cities have suffered this difficulty, with Sydney's being typical of a forced closure due to the inability to maintain the monorail when it lost support services from the original manufacturer.

Having provided sterling service for a quarter-century, it stopped service in 2013.

To ensure quiet operation in close proximity to buildings, most monorails run on rubber tires instead of the steel wheels used in conventional rail transport systems.

Rubber-tired vehicles require a lot more maintenance and are prone to cause operational failures, leading to disruptions in service. This is not conducive to the provision of the kind of reliable passenger service expected of public transport.

Hong Kong missed one opportunity to use a monorail for commuter transport.

In the 1990s, there was a plan to link Hung Hom with Tsim Sha Tsui by a monorail system called "Skyrail," to provide transport to shoppers and commuters.

The project failed mainly due to environmental and aesthetic concerns over Salisbury Road, especially with the Space Museum and Cultural Centre.

Eventually, it was replaced by the West Rail Tsim Sha Tsui link, which has proven to be much more effective with much larger passenger capacity.

Another opportunity is literally still "in mid-air."

I'll explain this story in my next article.

Veteran engineer Edmund Leung Kwong-ho casts an expert eye over Hong Kong's iconic infrastructure