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## Prototype 450 km/h high speed trains unveiled in China

By [Railway Gazette International](#) | 9 January 2025



CHINA: Two prototype CR450 high speed trainsets designed for a maximum speed of 450 km/h and an operating speed of 400 km/h have been unveiled in [Beijing](#), ahead of testing to optimise the

design and enable the sets to enter service as soon as possible.

China Railway started investigating the possibility of a 400 km/h trainset in 2018, and the CR450 Science & Technology Innovation Project was launched in 2021.



The CR450AF and CR450BF trainsets unveiled by CRRC and China Railway on December 29 each have four powered and four non-powered vehicles. They have a water-cooled permanent magnet traction system, and braking systems designed so the stopping distance is about the same as for trains running at a lower maximum speed. There are more than 4 000 sensors for the real-time monitoring of key systems.



The CR450 is 10% lighter than the previous CR400. Measures to reduce drag include bogie enclosures to lower air resistance. The nose of one train is inspired by an arrowhead, and the other by an eagle in flight.



CRRC said the CR450 prioritises passenger comfort, offering a smooth and quiet ride even at 400 km/h, with advanced noise-reduction technologies to ensure that interior noise levels are comparable to those of 350 km/h trains.

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China Railway said the CR450 is 'a comprehensive display of the country's scientific and technological innovation and high-end equipment manufacturing strength', and the unveiling was

'significant for building China's high-level self-reliance and strength in railway science and technology.'