# China tests 500 kilometers per hour train

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(PhysOrg.com) -- China tested a 500 kilometers per hour (311 mph) train over the weekend. Government officials call the record-breaking speedster a “useful reference” for China’s current high speed railway operations. The test train’s speed, according to a Monday report in *China Daily,* exceeds the world speed record of 300 kilometers per hour held by the Beijing Shanghai High Speed Railway. China’s latest high-speed train has a maximum tractive power of 22,800 kilowatts, compared with the 9,600 kilowatts for China Railways High-Speed (CRH) trains in

service on the Beijing-Shanghai High Speed line.

The train tested over the weekend is made of plastic materials reinforced with carbon fiber.The design concept is inspired by China's ancient swords.

The train's designer and manufacturer is Sifang Locomotive, a subsidiary of China's largest rail-vehicle maker, CSR Corp Ltd., based in Qingdao in eastern Shandong province.

Last year, *Technology Review* carried details of the WuGuang line trains, variants of Japan's Shinkansen and Germany's InterCity Express high-speed trains. That line clocked impressive speeds. A rail expert at the New Jersey Institute of Technology in Newark at the time noted that high-speed rail technology implemented in China was not entirely different from the world's TGV, ICE, and Shinkansen systems. What was notable about China's high-speed lines was that the system was designed from the ground up for very high-speed operation over hundreds of kilometers.

China has the largest network of bullet-train track in the world. The push for a massive buildout began in 2006 and continues, with the help of government stimulus funds. Miles of line are planned to the tune of billions to accommodate a future vision of over 16,000 kilometers of dedicated high-speed rail lines connecting all of China's major cities by 2020.

China's engineering triumphs, however, have been hindered by troubles, highly publicized in the world press. The Chinese Railways Ministry Chief, Liu Zhijun, in charge of the construction of the high-speed railway massive network, was arrested for corruption. Then came reports that corruption had sacrificed safety concerns in a haste to roll out the high-speed rails. There were stories of substandard materials used to cut

costs. *The New York Times* reported that the concrete bases for the tracks were made with insufficient hardening agents. The tracks could possibly warp, according to the report.

Safety concerns, however, seem to be top of mind in the government after the July incident where 40 people died when two bullet trains crashed into each other in Zhejiang province.

Officials felt it necessary to lower operating speeds on its bullet trains whereas trains with top speeds of 350 kh would be lowered to 300 kilometers peer hour, and trains designed for 250 would instead run at 200 kilometers per hour.

Similarly, Chinese officials in the latest announcement are careful to point out that future Chinese trains will not necessarily run at such high speeds as that demonstrated in the newly tested superfast train. The CSR chair Zhao Xiaogang told the *Beijing Morning News* that "We aim to ensure the safety of train operations."