





## Record Run

On 2 December, this three-car magnetically levitated train broke the world speed record for a manned train when it hit 581 km/h (361 mph). It achieved the new record on an 18.4-km stretch of a test line, which runs, mostly underground, in Yamanashi Prefecture, west of Tokyo. The vehicle held the previous record of 579 km/h set on 19 November. The extra speed is just icing on the cake for the designers, as the train is expected to operate at *only* 500 km/h.

The train cars contain liquid-helium-cooled superconducting electromagnets that are both repelled and attracted by conductive coils in the track's side walls, allowing the train to "float" above the track. Another system, in Shanghai, floats using electromagnetic attraction instead [see "Faster Than a Speeding Bullet Train," *IEEE Spectrum*, August 2003, pp. 30–34].

The technology is being developed by Central Japan Railway Co. and the Railway Technical Research Institute for use in a proposed 500-km (one-hour) route between Tokyo and Osaka. ■

**Photograph by Koichi Kamoshida/Getty Images**