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Atmanirbhar push in bullet train: Industry told to build substitute for made-in-China tech

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AS THE corporation building the country's first bullet train project pushes for Indian firms shouldering three-fourth of the work, Indian industry has been urged to come up with an alternative to the high-tech machines needed to construct viaducts (elevated structures) at the desired pace, which are currently made only in China. Trade with China has been affected by the border tension in eastern Ladakh.

The mega carrier and launcher machines, also known as Transporter, Gantry and Full Spam Launcher machines, are ubiquitous in China's large-scale connectivity projects. Typically, a vehicle carrying a full girder travels on an already launched girder to place the next girder under this technology. The speed is almost seven times that of the girder launching mechanism commonly used in India — while one-and-a-half girders are placed in a week with this, the Chinese machines enable two girders a day.

Work is on at the Sabarmati hub of the bullet train. *File*

Each machine costs around Rs 70-80 crore. The bullet train project will need up to 30 such machines, Achal Khare, Managing Director of the National High Speed Rail Corporation (NHSRL), said.

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"If we are to build 237 km in four years, there is no other way except to use this technique. But these carrier-and-launcher machines are manufactured in China. So this is one of the challenges which we have posed to the industry, including L&T (which is building 325 km of a high-speed viaduct in Gujarat) and the academicians, that why can't we develop them rather than importing them from China?" Khare told a meeting of the industry body. The Indian industry doesn't have any experience of building high-speed rail systems.

Procuring these machines was common earlier. "I guess people here never needed to apply their minds to make them because they were available cheap in China. Now we are telling people to try and design them, let's be self reliant. It's not like Indian engineers cannot make it," Khare told *The Indian Express*.

Khare acknowledged that the machines are "no joke". "They are vehicles capable of carrying loads of 1000 tonnes-plus." Noting that even Japan, which is helping India with the bullet train project, had not designed such machines, Khare said China came up with them over its construction of 25,000 km of high-speed rail.

Similarly, the NHSRCL has asked the Ahmedabad Textile Research Institute to work on developing upholstery similar to the fire-retardant one used in Japan's high-speed Shinkansen system.

Besides, at the behest of the NHSRCL, several IITs are making simulation software for electrical systems etc which are currently the sole domain of foreign consultants. Engineering institutes have also been asked to study ballastless track, to replicate the Shinkansen technology.

In the latest understanding reached with the Japanese side, India is to carry out around 75% of the construction for the project through Indian firms. Typically, in projects of such a scale, around Rs 80,000-90,000 crore worth of contracts, mostly in civil construction and even track-laying, would go to Indian companies. The bullet train project, without normal inflation factored in from 2015, is estimated at Rs 1.08 lakh crore.

The NHSRCL has told Indian contractors to ensure that their staff, from rail-welding technicians to engineers, motor car operators and supervisors, get trained and certified by a reputed Japanese agency. The training sessions can last from a few days to 125 days, and the cost has to be borne by the contractors.

While the Railways insists the bullet train project is still on time for the December 2023 deadline, sources said they are staring at a date of December 2028.