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## EDITORIAL



### High-speed railcars with **nobody** in them

There's a controversy brewing over high-speed rail lines planned for U.S. locales like California and Ohio. The fear is that trains intended to run at speeds of 125 mph or better will be so heavy and overengineered that they'll never be able to hit the kind of speeds seen in their European or Japanese counterparts and will wear out faster to boot.

The key point in the debate revolves around how to configure high-speed railcars that best protect passengers in a crash. The Federal Railroad Administration has been studying crash-energy management (CEM) and crush zones in railcars. The FRA, which sets standards for U.S. railcar construction, says it, "continues to believe that for operational speeds in excess of 125 mph, as a rule of general applicability for our nation's railroads, no passengers should be allowed in the lead vehicle."

Well, dedicating an entire railcar as a crash zone certainly provides a margin of safety. And it would make sense if you were talking about trains pulled by locomotives. But the lead cars in high-speed trains are typically more along the lines of a regular passenger car with an operator compartment built into one end. Dedicating the entire first car as a crash zone free of passengers essentially dictates that it be used only for luggage.

High-speed rail in Europe and Japan do indeed put passengers in their lead cars, but they don't have to contend with two scenarios the FRA had in mind: Piling into a semitractor trailer stalled at a crossing and meeting up with a misrouted train. Systems like the German ICE or the Japanese Shinkansen line are usually kept away from roadways and employ advanced signaling systems with built-in safeguards that minimize the chances of train-to-train mishaps.

The economic case for U.S. high-speed rail becomes more problematic with a percentage of every train mandated to run empty. I suspect if you ran this idea past rail officials in Europe and Japan who know a thing or two about operating high-speed lines, they would politely suggest you take another approach.

The most obvious remedy would be to keep high-speed trains out of harm's way, as is done in other parts of the world. The FRA has said it would, at least, consider relaxed CEM standards if this were the case.

My own fear is that political expediency will win out over common sense if such rail lines ever get built. There would be a cheaper price tag for high-speed trains that make use of some existing rail assets and cut corners by crossing roadways. And it would be easier for politicians to fund a system like that than one built the right way. But such a system's ability to ever cover its operational costs may be doomed from the start.

Think this can't happen? For political reasons, we built a Space Shuttle that rode next to its fuel tanks instead of ahead of them. Former NASA engineer Homer Hickam calls the Space Shuttle, "an inherently flawed design and will destroy American human spaceflight." When it comes to rail travel, we can learn lessons from Japan and Europe that should help keep us from doing to American rail travel what Hickam sees the Shuttle doing to spaceflight.

— Leland Teschler, Editor



World's Smartest Design Engineer — GAME UPDATE

Well . . . some of you are looking pretty smart . . . and some need to "hit the books" a little more! I hope you are having some fun and learning something along the way. The battle for first place between Kingph and Automation Boy continues. By the time this

issue is in your hands, we will know the winner for March. If you haven't registered yet, what are you waiting for? Sign up now and start racking up points towards April's monthly prize of a \$250 gift card!