

## Re: World's First Fuel Cell–Powered Train Locomotive Slated for 2008

*Source:* <http://sci.tech–archive.net/Archive/sci.energy/2004–08/0461.html>

---

*From:* Ian St. John ([istjohn\\_at\\_noemail.ca](mailto:istjohn_at_noemail.ca))

*Date:* 08/11/04

Date: Wed, 11 Aug 2004 07:22:00 -0400

Stephen Sprunk wrote:

> "Ian St. John" <[istjohn@noemail.ca](mailto:istjohn@noemail.ca)> wrote in message

> [news:XFfSc.21015\\$Mq1.990024@news20.bellglobal.com...](mailto:news:XFfSc.21015$Mq1.990024@news20.bellglobal.com...)

>> Stephen Sprunk wrote:

<snip>

>>> As does every existing HSR line in the world -- France, Germany,

>>> Spain, Japan, etc. all use overhead electric, not turbines.

>>

>> I am not pushing turbines. I have just noted that the U.S. tends to

>> propose

>> them as the only way to make a high speed rail service without the

>> development of the electrical infrastructure.

>

> The world record for a turbine train is 378km/h; none is in service

> faster than 200km/h. The world record for an electric train

> (actually, all trains) is 515km/h, and they'll soon be raising the

> operating speed from 300km/h to 320km/h in France.

And when you do not have the infrastructure to support even a 125 mph turbine because your rails are too fucked up from heavy freight, what do these numbers really mean? Not that you have the OPTION of an electric train in most of the country because you do not have the power grid for it. The turbine electric is chosen, not because it is fastest but because it is the most practical option that does not involve rebuilding the rail lines and the power grid.

> HSR competes with air, which moves at 800km/h but has about an hour

> and a half of passenger delay, so 200km/h rail is only competitive up

> to about 400km (250mi). 320km/h rail would be competitive out to

> 800km (500mi). That's twice the distance.

Some people would take rail for comfort, convenience and to have a view.

However, you are right in that maglev is probably the most competitive high

speed link for long distances. Not that it is any likelier than your all

electric service and for the same reasons.

>  
> *Also, the TurboLiner doesn't meet FRA regulations for new production,*  
> *so after you refurb the few that are left you'd need 5–10 years of*  
> *development to get one out the door, and if it's to be certified for*  
> *125mph operation \_now\_ it'd have to be two to three times the weight*  
> *per passenger of the older trains.*

If they want it to be used, the regulations will change. You keep bringing up silly issues. Is this connected to the blind spot or just another idiosyncrasy?

> *That means a lot more fuel*  
> *consumption, even longer acceleration, etc. These rules are the main*  
> *reason Acela is such a dog compared to TGV, even though it's built by*  
> *the same people.*

I can agree that the safety regulations for the FRA are somewhat antiquated, and depend on mass rather than design. However, I have no solution for this as the regulations have been built up by heavy lobbying over decades and there is no simple solution.

>  
>>>> *Weight is actually an advantage for freight; electric locos*  
>>>> *actually require ballast weight to improve traction. Nobody but*  
>>>> *you brought up passenger rail.*  
>>>>  
>>>> *Actually, you did with your referecne to high speed passenger*  
>>>> *trains in Europe using electricity.*  
>>>  
>>> *No, I started by talking about "Most long–distance freight in Europe*  
>>> *is electric"; you mentioned passenger rail first.*  
>>  
>> *Well, that is splittng hairs. The electrifications of rails in*  
>> *Europe was primarily driven by the need for high power, low weigth*  
>> *for passenger travel*  
>> *so it immediately comes to mind when discussing electrically powered*  
>> *trains*  
>> *in Europe which YOU brought up.*  
>  
> *The European railways were electrified long before TGV showed up in*  
> *1981.*

First off, the TGV program started in the '60s. Secondly, the TGV drove the need for an electric train since diesel trains were limited in speed, and thirdly, they built the first completely separate, electified line specifically for the TGV, with special track, avoiding level crossing and other hazards to high speed rail.

<http://www.trainweb.org/tgvpages/background.html>

>  
> S