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# Rail–Air Synergy

## Balanced transport as a prerequisite of sustainable growth

*Unfettered competition will destroy the human habitat; complementarity can make us survive.*

The idea that Rail should serve as an ecological alternative to Air and Road has apparently struck root in Brussels. For example, the Impact Assessment {COM(2006) 819 final} accompanying the European Commission's Action plan for airport capacity enhancement—adopted in January 2007 and squarely backed by the European Parliament in October 2007—designates one of its operational objectives as “encouraging the use of other transport modes, i.e. facilitating substitution of air to rail where relevant” (meaning substitution of rail for air, of course). Moreover, the same document lists among the specific objectives of the EC, the promotion of “railway connections to network relevant airports”.

Which airports might qualify as “relevant” in this context could be debated at some length. In any case, the postulated connections and substitutions will be of use only if implemented by high speed rail. Obviously, the speed of airplanes can be matched only by speedy trains.

Two other conclusions of the airport capacity debate were that in the next 20 years (1) more than 60 European airports will become congested, and (2) up to 10 major airports will have to be built to cope with the bulging air traffic. Thus we realise that while the contemplated expansion of Europe's two biggest airports, Heathrow and Frankfurt, by an additional runway placed beyond the port perimeter may improve the economic performance of the two giants, far more comprehensive measures must be taken to avert the approaching crisis. By the way, a certain relief would ensue if passengers heading across the Atlantic (East Europeans, for that matter) were dissuaded from changing planes in Western Europe.

European Parliament REPORT of 27 Sept. 2007 “Airport capacity and ground handling: Towards a more efficient policy” by Anne E. Jensen {2007/2092(INI)} contains *Explanatory Statement* which says, i.a.:

The Commission's suggestions on the optimization of current capacities and traffic management [are]: ...

3. Promoting “co-modality”, the integration and collaboration of the transport modes (air-rail);

### The environmental challenge

Recently, Europe has become aware of the hazards posed by the aggravating greenhouse gas emissions, and the European Union is contemplating measures to curb the progress of climate change. In its Conclusions on climate change (20 February 2007), the Council of the European Union made “the firm independent commitment to achieve at least a 20% reduction of greenhouse gas emission by 2020 compared to 1990” (pt. 10) and intends to implement this commitment by, among others, “limiting transport emissions” (pt. 12). In the same Conclusions, the Council listed “emissions from international aviation” as an element of the framework beyond 2012 (pt. 7).

The fact is that nearly 30% of the poisonous CO<sub>2</sub> emissions come from transport, and while most of them are due to road traffic, the share of aviation is growing fast. This makes it all the more urgent for the European Commission to develop a system of external cost internalization under which all significant “loads” on the environment are calculated as cost and proportionately incorporated in (rail, road, air) charges. Only when

this is accomplished will it be possible to “rebalance” the three transport modes, that is, bring them in balance.

From the current growth rate, a twofold rise in air traffic by 2025 is being predicted, but this extrapolation is “Eurocentric” and as such ignores the outside world, which is not in a mood to observe our standards. Among the states with GDP growth rates five times higher than Europe are the two most populous countries of the globe: China and India. It goes without saying that in the next 15 to 20 years those two and a half billion hard-working people will become rich enough to set out on trips in every direction, not excluding Europe.

Taking notice of the current high Chinese GDP growth, DG TREN conceded [see box] that by 2025, air traffic between Europe and the Far East alone might top 240 million passengers per year—which would mean a fivefold increase over a period of 20 years.

Doc title: “Jankowski draft reply SM+AB+CSM annex A35297”

[attachment to a letter signed by Anne Houtman and dated 27 August 2007]

[Question 1.] Does the DG have any estimates of the number of passengers from Asia likely to arrive in Europe in, say, 2017?

We do not have specific estimates, but assuming a rate of growth of 12% per year, similar to Chinese GDP high rates of growth, and three times larger than rates of growth foreseen for EU-25 aviation growth, this would lead to almost 100 million passengers in 2017 to/from the Far East and to above 240 millions by 2025.

## High Speed Rail can bring relief to the environment

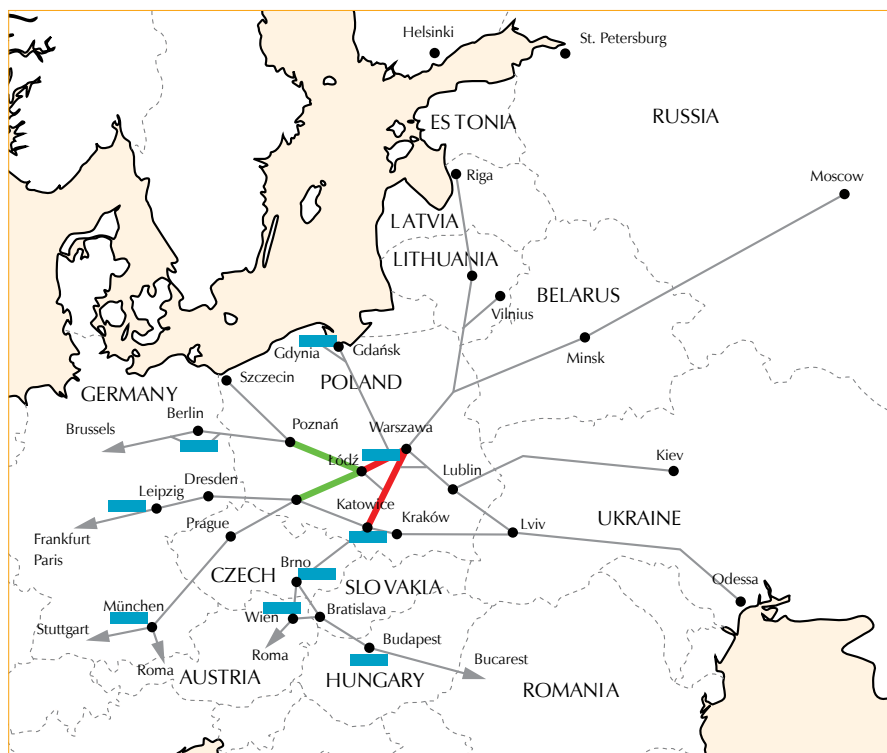
Forty-three years after the inauguration of the Tokaido Shinkansen (October 1964), high speed rail has established itself as a reliable, comfortable and secure mode of passenger transportation on distances of up to 800 kilometres. Within a certain range of distances, HS rail has proved its superiority over air as much as road traffic. There is no comparison between a TGV ride from Paris to Marseilles in exactly three hours and the hustle and bustle of either a flight, which takes altogether as much time, or a drive which engages you for at least twice as long and carries hazards to your life and health.

The first airline to realize the advantages of high speed rail was Air France, when it cancelled feeder flights from CDG to Brussels years ago and started to sell tickets for the TGV or Thalys instead. More recently, KLM has acquired a 10% stake in the High Speed Alliance which is building HSL Zuid (Amsterdam - Schiphol - Rotterdam - Antwerp). The airline wants to divert its transit passengers from feeder flights to HS trains and eventually cancel all flights from Schiphol to Brussels, also reducing substantially the number of flights to Paris.

Whereas high speed trains are not indifferent to the environment—on account of the noise they produce and the amount of electric power needed to drive them—their ecological impact is minimal compared with the devastating effects of air and road traffic. This will hold as long as the airplane and the motor vehicle are fuelled by oil derivatives. Should the latter be replaced by an innocuous fuel well before energy from renewable and ecological sources becomes ubiquitous, the rationale of high speed rail may come into question. Hopefully, by then, alternative modes of propulsion will be available.

## Towards a European high speed network

Thanks to the advancing integration of the EU member countries, border checks are no obstacle to train journeys any more. Under guidance of the European Commission, the unification of railway sys-



### Legend

- CMK upgraded (priority project) and first new HS line
- first new HS line continued
- major airports interconnected by HS rail

tems is making progress and should eventually ensure a genuine interoperability of railways across most of Europe. For high speed rail, this objective could be reached even earlier because new lines are designed and built to meet the EC interoperability specifications right from the start.

In practice, the idea is implemented only where the TGV has spilled over the French border into the neighbouring territories of Great Britain and Belgium (now also to the Netherlands). The current extension of the Paris - Brussels route into Germany already poses problems, mainly because, instead of building a new line, sections of existing lines are being upgraded to accommodate high speed trains, albeit at lower speeds. The first HS project to reach the eastern part of the continent, that is, Bratislava (65 km beyond Vienna), will rely mostly on upgraded lines again.

In Poland, there are plans to upgrade the CMK (central trunk line)—built to high-speed specifications 30 years ago—to at least 300 km/h, thus bringing the two major conurbations in the south, Cracow and Katowice, within one hour from Warsaw. Furthermore, a brand-new HS line will be built from Warsaw via Łódź to

Wrocław in the South-West and to Poznań in the West, on the way to Berlin.

The recent animation of relations between Poland and Russia has revived a long-cherished dream of linking Moscow with Europe by high speed train. The Russians, who are currently upgrading to high speed the Moscow - St. Petersburg trunk line (to be serviced by Siemens Velaro-R trains), seem to be taking seriously the prospect of running high speed services from Moscow via Warsaw to Berlin.

Thus, we may safely assume that, in one way or another, some kind of HS network will build up across Europe in the foreseeable future.

## Co-ordination or leadership?

While the European Commission is determined to re-orient the energy sector upon renewable energy and is working on measures to curb greenhouse gas emissions—in an effort to avert the most dramatic consequences of climate change, so far it has failed to work out measures aimed at rebalancing the transport modes and making national governments implement them.

With this goal in mind, one would expect the EC to monitor closely the

ratio of (EU-shared) financial outlays on the three “competitive” modes: Rail, Road, and Air in each EU member state. But even in the face of the threat of climate change and its dire consequences, the European Commission (or DG TREN) seems reluctant to exert any pressure on the national governments to make them revise the allocation of funds to rail and road in favour of the former—in oblivion of the ambitious goals set by the 2001 White Paper, bent as it was on rebalancing the transport modes in favour of rail.

Reverting to our leading topic, one wonders why the EC has left the planning and development of the European high speed rail network in the hands of the national governments. Dare we hope that, in the absence of a European master plan, the EU member countries will not drag their feet too much?

As in the case of the “energy shake-up”, our European habitat could only benefit if the European Commission, in addition to ensuring co-ordination, were to provide leadership in the realm of transport.

### Rail and Air in symbiosis

Originating in the deployment of a TGV station in the belly of Charles de Gaulle airport, the idea of feeding big airports with high speed trains is slowly catching on. Currently, Berlin is expanding the Schönefeld airport into a hub (BBI) with a mid-field terminal where, in addition to shuttle trains from the new Hauptbahnhof, ICEs will discharge their passengers within walking distance of the check-in counters. But because of its location in an urbanized area, the new airport will be subjected to severe flight restrictions (e.g. at night time). In addition, it is not placed directly on top of a high speed line where trains could stop over without having to slow down on meandering tracks. Furthermore, the German high speed lines do not ensure journey times that could compete against flights over distances of 400 kilometres and longer.

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Consequently, BBI will not give much relief to the bursting hubs of Western Europe—once the massive influx of Asian travellers becomes a reality. Indeed, such reliever hubs should be built in the less crowded and poorly urbanised flatlands further east, where high speed trains could cover distances of up to 600 km in a couple of hours. Only airports with train stations right under a mid-field (central) terminal, from which passengers could take high speed trains in all (at least four!) directions, will ease Europe’s environmental squeeze, especially that the HS lines will also reduce traffic on our motorways.

The first such mega-hub will be built from scratch in Central Poland, less than 40 km west of Warsaw, where the CMK (or its northward extension) will intersect with the planned east-west high speed axis, just a couple of kilometres from the A2 motorway. By 2025, the Central Poland Airport (CPL) may have to cope with 100m passengers/year, and only their distribution by high speed trains, in place of short-haul flights, will help salvage Europe from an ecological catastrophe.

A second major airport could be located on top of the future intersection of the CMK— extended southwards, towards Slovakia, the Czech

Republic and Austria—with a second east-west high speed axis linking Dresden, Wrocław, Katowice, Cracow with Lviv (and Kiev). Also the northern-Polish airport near Gdańsk ought to be connected to the European high speed network. Needless to say, an interconnection of major airports by high speed trains will offer convenient alternatives to flights affected by bad weather or other emergencies.

Let us wind up by saying that each of the three transport modes, Rail, Road and Air, can be economically employed on specific transport assignments over a certain range of distances, while being uneconomic on others. Therefore, the various means of transport should be put accordingly to their proper uses.

As a result, Europe will have a truly balanced transport system where high speed rail will occupy the prominent place it deserves. In fact, the harmonious cooperation, or symbiosis, of all transport modes should produce extra benefits as denoted by the term synergy\*.

### Footnotes

\* The term SYNERGY conveys the notion that the combined effect of concerted actions is greater than the sum of the effects of the same actions pursued in separation.