

SLEEPERS UNCOUPLED



CASE STUDIES

REPORT

20 FEBRUARY 2012



1 Introduction

Background

JMP has been appointed by HITRANS to undertake a review of the operational characteristics of European sleeper services to help inform their submission to Transport Scotland's Rail 2014 Consultation document.

The requirements of the study were set out clearly in the brief. In summary it is to investigate the provision of rail overnight and sleeping car services across Europe by studying a wide range of operations both internal and cross-border and to categorise them by, amongst other factors;

- Ownership, financial and operator characteristics;
- Rolling stock and operational characteristics;
- Track and station access arrangements and charges;
- Service characteristics – facilities, service patterns, seasonality etc;
- Customer interface – ticketing, booking arrangements etc;
- Integration with other modes and security /border crossing arrangements.

The above is to be couched within an overview of current trends and an assessment of future

developments in overnight and sleeper service across continental Europe.

This Document

Following the study Inception Meeting on 12th January 2012 the first task in the programme developed by JMP has been to prepare a tabulation of current sleeper services operating across Europe in order to classify them by operational type and characteristic and identify appropriate service types for more detailed review in a series of case studies.

This document is accompanied by an Excel spreadsheet which contains full details of the services. The selected case studies follow this introduction and they are accompanied by a separate report on recent trends in the European rail sleeper market.

Introduction to Table of European Sleeper Services

There are more than 150 pairs of sleeper trains operating in mainland Europe, with more than half of these making international journeys.

In the following table at Appendix 1, we have taken basic details from the Thomas Cook December 2011 timetable, augmented and

updated from other sources. This shows all services with sleeping accommodation (except for those provided solely as part of a car-carrying train, and therefore not accessible to foot passengers), but does not show overnight trains made up of day carriages only.

Our definition of mainland Europe is the area covered by Central European Time (i.e. 1 hour ahead of UK time) and all trains either originating or arriving in this time zone are included, plus internal services in Finland.

Notes on Appendix 1 Table

Where multiple entries occur, the first refers to the Between-And direction, the second to the And-Between direction.

Ref

The first column is merely for sorting the table into an order (which roughly corresponds to the order in which they appear in the Thomas Cook timetable).

Characteristics

We have determined the characteristics of each train in the accompanying table by the following method:

- **B** uses branch/secondary line for part of journey

- **H** train with hotel standard accommodation (though may convey other types too)
- **P** portion working
- **O** Open access operation
- **S** seasonal service
- **W** weekend service
- All other trains are city to city.

Train Name/Number

On international services, the train number may vary between countries. Generally the numbers shown are for the originating country. The second number is the train in the reverse direction (ie from And to Between). Occasionally multiple numbers are allocated, which may be used on different days of the week.

Journey Time

Figures quoted have been rounded up to the nearest 15 minutes, though these can vary by direction. Where the difference exceeds 30 minutes, a second figure appears for the reverse direction.

With very few exceptions, sleeper services are slower than their daytime equivalents. In some cases, this is to ensure that departure and arrival are at appropriate times in the evening and morning, though the heavier weight of sleeping cars will reduce locomotive performance on some routes.

The vast majority are electrically-hauled, with diesel operation principally confined to some

Spanish and Balkan train services, and the Trondheim-Bodo service in Norway.

Daytime Options

Where there are obvious alternatives, the typical journey time and the number of services per day is quoted. “**Ch**” means a change is necessary; occasionally, two changes.

Train facilities

We have divided these into hotel standard, 1st and 2nd class sleepers, couchettes and day carriages. Y means that both 1st and 2nd class are provided, either 1 or 2 indicates only one class is available. Note however that the accommodation described with standard terms varies from country to country (and more detail will be provided with the main report).

We have generally assumed hotel standard to include a private shower and WC. First class increasingly includes a WC, but may just indicate a more spacious compartment. Couchettes generally have six berths, though some have only four. These are almost universally second class only, except notably in France where four berth couchettes are regarded as first class. Day carriages may be standard rolling stock, though some operators offer an improved standard with reclining seats (see City Night Line brochure).

We have omitted any reference to catering facilities, as these vary enormously, from full

restaurant to nothing, and may not be available over the whole route. Not all timetables give this information.

Notes

These show where trains are combined or detached from others. Information is always given in the Between-And direction, though the majority also apply, suitably reversed, in the opposite direction.

Any other information, such as travel restrictions, is also recorded here. Recent information suggests a number of trains in Italy and the Balkans do not convey the advertised sleeping accommodation.

Country Codes

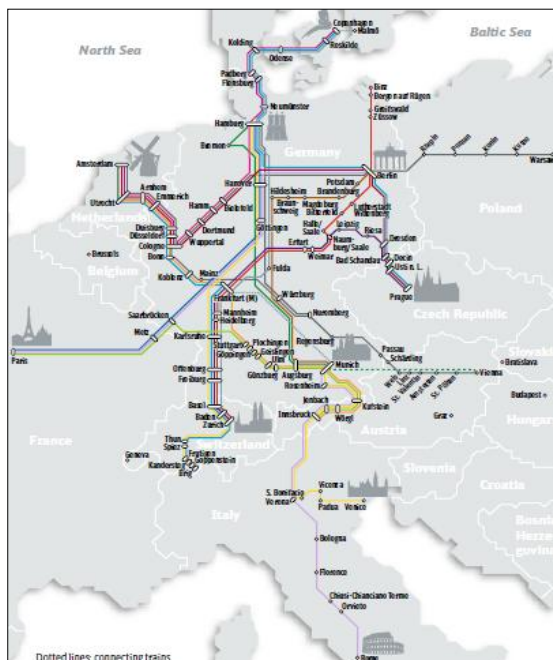
The remaining columns show the countries served by international trains. Except where shown against the relevant train, there is only one infrastructure owner in each country (e.g. for train ref 36, when this is extended to Brig, it travels over the BLS network, in addition to SBB tracks).

Sheet Two – InfraCo – gives a key to the ISO country codes, and the name of the infrastructure owner.

A note about City Night Line

The dominant brand in mainland Europe is City Night Line. The German-based network of night services is extensive and complicated, by virtue of reforming many trains en route, to

provide through carriages between many cities. We have also attached an English language version of the brochure issued by DB (though other train operators participate). Broadly speaking a glance at the map (reproduced here) reveals a number of routes that run parallel over certain sections, and most often this will be achieved by combining trains from different origins and destinations.



Reproduced from DB Rail brochure

The individual timetables confirm where times are the same.

The brochure also illustrates typical rolling stock, includes diagrams of different types of berths, and indicative fares for some journeys.

SNCF – Intercite de Nuit

By contrast, the network of SNCF sleepers for mainly internal travel in France continues to shrink. Newly rebranded this month from Corail Lunéa to Intercité de Nuit, the map below shows how sparse this network now is.



The table overleaf illustrates this decline, showing overnight services using sleepers or couchettes for journeys within France in 1992, for comparison with the current network. The reasons for decline are mixed, though the

impact of shorter journey times on high speed lines has been a significant factor.

European railways have also tended to improve utilisation of their rolling stock, and the number of trains in the table shown as summer only is an indication of how poor was the use of some carriages. In theory, couchette carriages could be used as day carriages, though their different livery and branding rather highlighted their intended purpose.

Not shown in this table are the overnight motorrail services which no longer run for domestic journeys in France at all. In particular, the opening of the channel tunnel with its shorter journey times reduced the demand from British motorists arriving by ferry in northern France.

Table 1.1 SNCF Sleeper Services in 1992

With sleeper		Couchette only	
Tourcoing-Nice	Summer 2 days/wk	Tourcoing-Lourdes	Summer 2 days/wk
Paris-Brest	Daily	Tourcoing-Port Bou	Summer 2 days/wk
Nantes-Ventimiglia	Couchette only during summer	Lyon-Brest	
Paris-Tarbes/Hendaye		Toulouse-Quimper	In summer also conveys sleepers
Nantes-Nice		Paris-Quiberon	
Hendaye-Ventimiglia		Paris-Bordeaux	
Calais-Port Bou	Summer 2 days/wk	Paris-Madrid	
Frankfurt-Port Bou		Paris-Hendaye	Summer 1 day/wk
Paris-Nice		Paris-Lisbon	
Paris-Ventimiglia		Paris-Brive-Toulouse/Rodez/Carmaux	Portion working on certain summer days
Geneva-Nice	Some summer from St Gervais	Bordeaux-Milan	
Paris-Briancon		Paris-Port Bou	
Lyon-Irun		Paris- La Tour de Carol	All weekdays; summer daily
Paris-Beziers		Paris-Nimes	
Nice-Metz	Summer from Cologne	Paris-Millau/Aurillac	
Paris-Naples		Geneva-Hendaye	2 days/wk; summer daily
Paris-Bourg St Maurice		Basel-Port Bou	
		Reims-Port Bou	2 days/wk; not summer
		Cologne-Reims-Port Bou	Summer daily
NEA7015		Paris-Montpellier	

Trains for further study

In order to provide a useful representation of the range of operational issues and variations in operational arrangements that exist across Europe we propose the following case studies to represent the key service characteristics.

Portion working

As noted above, the City Night Line network employs extensive portion working, and is probably the best example to study. Further, trains may be made up of rolling stock from more than one operator. We have looked at one of the workings through Germany, the Copenhagen-Prague, Amsterdam-Prague and Amsterdam-Copenhagen, all of which are linked, as our **Case Study 1**.

Hotel Service

Although some City Night Line trains include hotel standard accommodation, Spanish operator RENFE has probably achieved most in offering different levels of service. We have therefore selected the Barcelona-Zurich service - **Case Study 2**.

Branch line service

The definition of branch line is broad, and like the Caledonian Sleeper, most of

the journey will be completed on the main line network. An interesting comparison is the Paris – Toulouse - La Tour de Carol route in France, which completes its journey on a 150 km single track branch into the Pyrenees – **Case Study 3**.

Open Access Operation

In all cases, open access operation is by Veolia. Of these, the Berlin-Malmo service has only recently been taken over from its previous providers, while Veolia has replaced SNCF as the French partner in the Paris – Rome *Thello* service.

The longest established route is Storlien – Malmo, which competes with services provided by state-owned SJ. We have selected this as **Case Study 4**.

Seasonal service

These tend to be either to winter destinations for skiing, or to the coast during the summer. Various City Night line trains are extended at certain times of the year, such as those which serve Binz on the Baltic coast, or those to Innsbruck in Austria and Brig in Switzerland (respectively summer/winter/winter). We have selected the latter as our case study – **Case Study 5**

Weekend service

We consider that there is little merit to be gained from selecting a particular service, as its main function would be to show that the

rolling stock hangs around unused for five nights a week. In some cases, stock may be shared with other uses – such as car trains – which are rarely daily. It is noteworthy that the main providers of weekend services, SNCF and FS, are widely regarded as inefficient.

Case Study Report Structure

For each of the five case studies we have followed the same format to report on the operational arrangements of the service, namely;

- Infrastructure and access arrangements
- Train and traction details
- Rolling stock quality, facilities and servicing
- Timetabling, pricing and ticketing
- Daytime and modal alternatives
- Border crossing arrangements (where applicable).

Appendix 1 (Overleaf)
Summary of Sleeper Services
Operated

Ref	Characteristic	Country	Between	And	Train Name/Number	Jury Time (approx)	Days of Operation	Sleeping Accommodation				Seats	Notes		
								Dayline Options	Hotel	1 st class	2 nd class/couchette				
1	W	France	Nice	Holidays	4630, 4730	11:30	Fr/Sun				2	2	Extends to train westbound only		
2	W	International	Geneva	Holidays	4674, 4774	14:30	Mon/Fri/Sun				Y	2	2	Extends to train westbound only	
3		France	Paris	Carbère	3731, 3730 Coral Lanes	19:00	Daily	8h15 Sidey ch Montpellier/Porzigean				Y	2	Detaches 3971 to La Tour de Carolat Toulouse. Extends to Portbou westbound only.	
4	B	France	Paris	La Tour de Carol	3971, 3970 Coral Lanes	19:00/11:00	Daily	Toulouse				Y	Y	Detached from 3731 at Toulouse	
5	B P	France	Paris	Toulouse	3751, 3750 Coral Lanes	8:30	Daily	8h30 4day				Y	2	Train splits at Brive. Portion to Rodez	
6	B P	France	Paris	Rodez	3751, 3750 Coral Lanes	8:30	Daily	7-8hr ch Brive Sidey				Y	2	Train splits at Brive (remainder to Toulouse). Rodez portion to Albi (Fri) from Albi (Sun)	
7	B W	France	Paris	Luchon	3993, 3991 Coral Lanes	19:00/6h15	Fri out/Sat back	via Toulouse				Y		Also runs winter Seb from Paris	
8	P	International	Luxembourg	Nice	4248/3/548/2	14:15	Daily					Y	2	Portions from Luxembourg & Strasbourg combine at ??, Lyon?? then split at Avignon for Nice & Carrière	
9	P	France	Strasbourg	Nice	4282/3/362/3	13:35	Daily	8h00 2day ch Valence				Y	2	Portions from Luxembourg & Strasbourg combine at ??, Lyon?? then split at Avignon for Nice & Carrière	
10	P W	France	Strasbourg	Carrière	4248/3/548/2	13:00	Fr/Sun					Y	2	Portions from Luxembourg & Strasbourg combine at ??, Lyon?? then split at Avignon for Nice & Carrière	
11	P W	International	Luxembourg	Carrière	4248/3/548/2	13:45	Fr/Sun					Y	2	Portions from Luxembourg & Strasbourg combine at ??, Lyon?? then split at Avignon for Nice & Carrière. Extends to Portbou westbound only	
12		France	Paris	Nice	Train Bleu 5771, 5774	11:30	Daily	5h45 5day				Y	Y		
13		France	Paris	Bricezac	Coral Lanes 5787, 5790	11:00	Daily	8h30 ch Valence				Y	Y	Relief train in ski season	
14	B S	France	Paris	St Germain	5594/5704, 5594/5706	19:00	Weekends + Winter Wk	TGV 5h00				Y	Y	Train splits at ??As-les-Bains???	
15	S	France	Paris	Bourg St Maurice	5705, 5708	9:00	Weekends + Winter Wk	TGV 5h00				Y	Y	Train splits at ??As-les-Bains???	
16	P	International	Paris	Berlin	CNL Perseus 460/1071	12h30/13h30	Daily	8h30 ch Ff Sidey			Y	Y	2	2	Cassiope detached at Mannheim. To Hannover combined with Andromeda
17	P	International	Paris	Hamburg	CNL Andromeda 845/13h00	Daily		8h00 ch Cologne 4day 11h00 ch Osnabrück-Hamburg 5day			Y	Y	2	2	To Hannover combined with Perseus. From Hannover combined with Konrad
18	P	International	Amsterdam	Copenhagen	CNL Borealis	15:15	Daily				Y	Y	2	2	Detached at Hannover from Jan Kiepura and attached to Aurora
19	P	International	Copenhagen	Prague	CNL Orion EN473/456	15:30	Daily				Y	Y	2	2	From Copenhagen as part of Aurora. From Berlin as part of Phoenix
20	P	International	Berlin	Prague	CNL Phoenix EN456/7	5:30	Daily	4h30 ev 2hrs			Y	Y	2	2	Train is combined from Kopernikus and Orion. Appears to take no new sleeping passengers on this section.
21	P	International	Amsterdam	Prague	CNL Kopernikus	14:30	Daily				Y	Y	2	2	Detached at Berlin from Jan Kiepura and attached to Phoenix. From Dresden with Canopus
21	H P	International	Munich	Rome	CNL Lupo CNL4945	13:30	Daily		Erstüber		Y	Y	2	2	Ffdr to Venice detached at Verona. Attaches to Allegro Tosca at Bologna
22	H P S	International	Munich	Rome	CNL Lupo CNL4945	15:30	Summer		Erstüber		Y	Y	2	2	Relief train with different route across Alps. Attaches to Allegro Tosca at Terzio
23	H P	International	Munich	Venice	CNL Poldi EN356/3	9:00	Daily	7h15 ev 2 hrs ch Verona	Erstüber		Y	Y	2	2	Detached from Lupo at Verona
24	P	International	Zurich	Prague	CNL Canopus CNL456/5	14:45	Daily				Y	Y	2	2	Detaches Sirius at Erfurt for Berlin/Blnz
25	P	International	Amsterdam	Munich	CNL Pollux 4189	10:30	Daily	ICE 7h30 ev 2 hrs			Y	Y	2	2	Extends to Innsbruck on Seb during ski season. At Mannheim, attaches portion from Paris Perseus and detaches portion for Zurich Konrad
26	P	International	Cologne	Vienna	Hans Abers EN406/EN421	13:00	Daily	8h00 Sidey			Y	Y	2	2	Attaches to portion from Hamburg at Grandson
27	P	International	Hamburg	Vienna	Hans Abers EN406/EN421	12:15	Daily	ICE 9h30 4day			Y	Y	2	2	Attaches to portion from Cologne at Grandson
28	P	International	Munich	Budapest	Kalman Imre EN482/3	9:00	Daily	7h00 5day			Y	Y	2	2	Train splits at Salzburg - portions to Zagreb/Pisla/Venice
29	P	International	Munich	Zaradi	László EN489/158	9:00	Daily	8h30 1 direct 2 ch Vilch			Y	Y	Summer	2	Portion works of Kalman Imre from Salzburg
30	P	International	Amsterdam	Moscow	Jan Kiepura EN447/5	49:00	Daily				Y	Y			At Hannover detaches portion for Copenhagen Borealis and attaches portions from Basel Jan Kiepura, Copenhagen Orion. At Berlin detaches portion for Prague Orion. Part of train terminates at Warsaw
31	P	International	Basel	Moscow	Jan Kiepura EN447/5	49:00	Daily				Y	Y			Combines at Hannover with portion from Amsterdam
32		International	Paris	Moscow	Trans European Express EN	39:00	3 days/week				Y	Y			Only for passengers left from Belarus/Luzia
33	P	International	Zurich	Berlin	CNL Sirius 1258/5	11:30	Daily	8h30 ev 2hrs ch Mannheim 8h00 ch Cologne 5day			Y	Y	2	2	Detached from Canopus at Erfurt. Summer Seb extended to Blnz.
34	P	International	Paris	Munich	CNL Cassiope	11:00	Daily	ICE 12h15 ch Hamburg 3day			Y	Y	2	2	At Mannheim detached from Perseus. No local travel in Germany. At Hannover detaches coaches for Amsterdam/Prague Jan Kiepura and attaches portion from Moscow/Minsk Jan Kiepura
35	P	International	Copenhagen	Basel	CNL Aurora CNL 472/5	15:30	Daily				Y	Y			Extends to Brg (-h30) on Seb during ski season. At Mannheim, attaches portion from Amsterdam Pegasus
36	P	International	Hamburg	Zurich	CNL Konrad CNL 478/9	13h30/12h00	Daily	ICE 7h35 ev 2hrs			Y	Y	2		Extends to Brg on Seb during ski season. At Mannheim, attaches portion from Hamburg Konrad
37	P	International	Amsterdam	Zurich	CNL Pegasus CNL 419/7/8	12:00	Daily	8h25 ch Ff ev 2 hrs			Y	Y	2	2	Attaches to Poldi at Hildesheim
38	P	Germany	Berlin	Munich	CNL Capella CNL1246/7	19:00	Daily	ICE 7h00 ev 2 hrs			Y	Y	2	2	Also conveys Capella from Hildesheim to Munich
39	P	Germany	Hamburg	Munich	CNL Pyra CNL1286/7	11:30	Daily	ICE 6h00 ev 1r			Y	Y	2	2	Northbound train to Carrière
40		Spain	Madrid	Port Bou	Costa Brava 370 Estrella 37C	11:45	Daily	AVE+ local 5h00			Y	Y	2	2	

Ref	Characteristic	Country	Between	And	Train Name/Number	Jny Time (appr)	Days of Operation	Sleeping Accommodation				Notes		
								Daytime Options	Hotel	1 st class	2 nd class/couchette		Seats	
41	H	Spain	Barcelona	Gijón	Pio Barja /Trenhotel	11h30	Daily		Gran Classe	Y	Y		1	
42	H P	Spain	Barcelona	La Coruna	Gelida /Trenhotel	14h45	Daily	10h15 1/day ch Madrid	Gran Classe	Y	Y		1	Train divides at Monbrle de Lemos
43	H P	Spain	Barcelona	Vigo	Gelida /Trenhotel	14h45	Daily	11h45 1/day	Gran Classe	Y	Y		1	Train divides at Monbrle de Lemos
44	S	Spain	Bilbao	Malaga	Picasso Estrella 940/941	14h00	Three days in Dec only			Y	Y	Y	Y	
45	H	Spain	Barcelona	Grenade	Alhambra /Trenhotel 89/894	10h45	Daily	AVE-local 7h00	Gran Classe	Y	Y		1	
46	H	International	Madrid	Lisbon	Ludbena /Trenhotel 330/335	9h00	Daily	11hrs ch twice 1/day	Gran Classe	Y	Y		1	
47	H P	Spain	Madrid	La Coruna	Rias Gallegas /Trenhotel 851/	10h00	Daily		Gran Classe	Y	Y		1	Train divides at Ourense
48	H P	Spain	Madrid	PortoVedre	Rias Gallegas /Trenhotel 851/	10h00	Daily		Gran Classe	Y	Y		1	Train divides at Ourense
49	L	Spain	Madrid	Ferrol	Alerico /Trenhotel 75 6/752	11h00	Not Set		Gran Classe	Y	Y	Y	1	
50	O	International	Paris	Venice	Theko Trenhotel EN221/220	13h30	Daily			Y	Y	2		International journeys only
51	L	International	Irun	Lisbon	Sud Expresso/Surex /Trenho	13h30	Daily		Gran Classe	Y	Y		2	Northbound train to Hendaye
52	L	International	Madrid	Paris	Freudco de Goya /Trenhotel	14h00	4 days/week (summer daily)		Gran Classe	Y	Y		1	
53	L	International	Barcelona	Zurich	Pau Cazals /Trenhotel Eljoso	14h30	3 days/week		Gran Classe	Y	Y		1	Divides at Lyon
54	L	International	Barcelona	Milano	Salvador Dell /Trenhotel Eljoso	13h30	3 days/week		Gran Classe	Y	Y		1	Divides at Lyon
55	O S	International	Berlin	Melno	Berlin Night Express EN300/2	9h00	3 days/week Apr-Nov			Y	Y	2		
56	S	International	Berlin	Kaliningrad	D40444/40445	17h00/14h00	Summer only			Y	Y			
57	P	International	Berlin	Budapest	Metropol EN4767	13h30	Daily	12h00 3/day		Y	Y	2	2	Also conveys 8 portions of other trains detached/attached at 3 locations
58	P	International	Berlin	Novosibirsk	1249/1248	8h00	1 per week			Y	Y			508km. Also portion to Chelyabinsk (3825km). Jnys across Polish/Belarusz border only. Portion of Saratov Express
59	P	International	Berlin	Ufa	Saratov Express	71h00	1 per week			Y	Y			3645km. Also summer portion to Adler (3589km). Jnys across Polish/Belarusz border only. Also conveys portion to Novosibirsk.
60		International	Warsaw	Kiev	Kiev Express	18h00	Daily			Y	Y			
61		International	Berlin	Kiev	Kashan D440/14/5	23h30	4 days/week (summer daily)				Y			
62	H	International	Nice	Moscow	17BJ/18BJ	4h00	1 per week		Y	Y	Y			PKP restaurant Nice-Brest
63	P	International	Sofia	Bucharest	Bulgaria Express	10h00	Daily			Y	Y		Y	Conveys through carriages from Moscow, Minsk, Lviv
64		International	Belgrade	Skoje	Hellas Express	9h30	Daily	10h00 1/day		Y	Y	2	Y	Cook's - doesn't run. STOCK MAY NOT EXIST
65	S	International	Belgrade	Istanbul	Balkan Express	23h00	Summer only			Y	Y	2		Winter: day train Belgrade-Sofia
66		International	Belgrade	Sofia	Nusic	9h00	Daily	9h00 1/day		Y	Y	2	2	
67		International	Vilach	Belgrade	315/314	9h00/11h30	Daily	11-12h 2/day		Y	Y	2	Y	
68		International	Zurich	Belgrade	Zurichsee 414/415	20h30	Daily						2	1/2 Vilach-Belgrade
69		International	Zurich	Zagreb	Zurichsee 414/415	14h00	Daily	ch Salzburg 10h 2/day		Y	Y	2		
70		International	Zurich	Graz	Zurichsee 464/465	10h00/11h00	Daily			Y	Y	2	2	
71		International	Zurich	Budapest	Wiener Walzer	12h00	Daily			Y	Y	2		
72		International	Vienne	Venice	Alegro Don Giovanni	12h00	Daily			Y	Y	2	2	Also known as Venezia-Vienne Express (or vice versa)
73	W	International	Vienne	Rome	Alegro Rossini	12h00	Summer. Out/Fri/Back Set			Y	Y	2	2	
74	P	International	Warsaw	Minsk	110/115BJ	10h15	Daily			Y	Y			Also conveys portions to Moscow/St Petersburg
75	P	International	Warsaw	Moscow	110/25ZH	21h00	Daily			Y	Y			Also conveys portions to Minsk/St Petersburg
76	P	International	Warsaw	St Petersburg	110/19MJ	31h15	2 days/week. Summer 5/days				Y			Also conveys portions to Minsk/Moscow
77	P	International	Vienne	Moscow	22/21	34h00	Daily			Y	Y			Combines with Vitava at Bohumin
78	P	International	Cheb	Moscow	Vitava	42h00/38h00	Daily			Y	Y			Combines with portion from Vienne at Bohumin

Ref	Characteristics	Country	Between	And	Train Name/Number	Jmy Time (approx)	Days of Operation	Daytime Options	Sleeping Accommodation				Notes	
									Hotel	1 st class	2 nd class	couchette		Seats
79	P	International	Prague	St Petersburg	Vitebs	40/00/42/00	2 day/week, Summer 4/days			Y	Y			Combines with portion from Vienna at Bohumin
80		International	Brest/Brno	Moscow	809/804	38/00	Daily			Y	Y			
81		International	Wroclaw	Lviv	35/36	12/00	Every other day				Y			
82		International	Milano	Vienna	234/235	10/45	Daily			Y	Y	2		
83	W	Italy	Reggio de Calabria	Bozano	1594/1595	15/15/18/00	Summer, Out Fri/Back Sat							
84	H	Italy	Bozano	Lecce	925/924	13/45	6 day/week		Excellor	Y	Y	2	2	
85	H	Italy	Bozano	Naples	837/824	12/00/13/15	6 day/week		Excellor	Y	Y	2	2	
86	H S	Italy	Bozano	Rome	1601/1604	9/30	Summer only	5h 2/day +2 ch Verona	Excellor	Y	Y	2	2	??Call to set down only??
87	P	Italy	Udine	Naples	771/774	12/15	Daily			Y	Y	2	Y	Combines at Venice with portion from Trieste
88	P	Italy	Trieste	Naples	772/773	11/45	Daily	8-9hr ch Rome-Venice		Y	Y		Y	Combines at Venice with portion from Udine
89		Italy	Lecce	Trieste	776/778	14/00/13/15	Daily					2	Y	
90		Italy	Lecce	Venice	777/779	11/00	Daily					2	Y	
91		Italy	Turin	Naples	799/35006	11/30	Daily	9/45 1/day		Y	Y	2	2	
92	P	Italy	Turin	Palermo	1943/1944	21/00	Daily			Y	Y	2		Via train ferry. Combined on mainland. Day carriages on Sicily
93	P	Italy	Turin	Syracuse	1945/1942	20/00	Daily			Y	Y	2		Via train ferry. Combined on mainland. Day carriages on Sicily
94	P	Italy	Milano	Palermo	1927/1928	20/00	Daily			Y	Y	2		Via train ferry. Combined on mainland. Day carriages on Sicily
95	P	Italy	Milano	Syracuse	1923/1922	19/00	Daily			Y	Y	2		Via train ferry. Combined on mainland. Day carriages on Sicily
96	H	International	Vienna	Rome	Allegro Tosca	13/30	Daily	11/45 3/day ch Wlce	Excellor	Y	Y	2	2	Also conveys Luxus from Tarvisio/Boscoverde or Bologna
97		Italy	Salerno	Milano	830/833	12/45/11/00	3 day/week					2	2	
98	H	Italy	Milano	Naples	1910/1911	11/15/10/30	Daily		Excellor	Y	Y	2		
99		Italy	Lecce	Milano	780/781	11/15	Daily			Y	Y	2	2	
100	WS	Italy	Turin	Berl	907/900	11/00	Summer, Out Fri/Back Sun			Y	Y	2	2	
101	P	Italy	Turin	Lecce	791/798	12/45	Daily			Y	Y	2	2	Couchette & day carriages to three other destinations
102		Italy	Rome	Lecce	789/788	8/30/8/00	Daily	8/30 3/day		Y	Y	2	2	
103	W	Italy	Rome	Reggio de Calabria	891/892	8/00	Out Fri/Back Sun	7-8hr 5/day				2	2	
104		Italy	Rome	Reggio de Calabria	895/894 or 898	8/30/9/15	Daily	7-8hr 5/day		Y	Y	2	2	
105	P	Italy	Venice	Palermo	1931/1930	20/00	Daily			Y	Y	2		Via train ferry. Combined on mainland. Day carriages on Sicily
106	P	Italy	Venice	Syracuse	1935/1934	19/00	Daily			Y	Y	2		Via train ferry. Combined on mainland. Day carriages on Sicily
107	P	Italy	Rome	Palermo	1941/1938	12/30	Daily	11/00 1/day		Y	Y	2		Via train ferry. Combined with 1932/8/4/7. Day carriages on Sicily
108	P	Italy	Rome	Syracuse	1939/1936	12/00	Daily	11/30 1/day		Y	Y	2		Via train ferry. Combined with 1932/8/4/7. Day carriages on Sicily
109	P	Italy	Rome	Agrigento	1932/1947	15/00	Daily					2	2	Via train ferry. Combined with 1936/8/4/1
110		Sweden	Stockholm	Malmö	1/2	8/00	Not Set	4/30 hourly		Y	Y	2	2	
111	B	Sweden	Stockholm	Malmö	85-88	13/00-10/00	2 day/week			Y	Y	2	2	
112	B O	Sweden	Stockholm	Malmö	VED 7121/7120	17/00	2 day/week	More frequent in summer?		Y	Y	2	2	
113	B	Sweden	Gothenburg	Lulea	92/91	17-19hrs	Daily			Y	Y	2	2	
114	B	Sweden	Gothenburg	Stockholm	71-77	14-16hrs	Daily			Y	Y	2	x	Day carriages not daily. Faster in summer

Ref	Characteristics	Country	Between	And	Train Name/Number	Jry Time (appr)	Days of Operation	Sleeping Accommodation					Notes	
								Daytime Options	Hotel	1 st class	2 nd class	couchette		Seats
115	B	International	Stockholm	Narvik	94/93	19h30/21h00	Daily			Y	Y	2	2	Porton from Lulea 7004/7008
116		Norway	Oso	Slavanger	705/706	8h15/9h00	NotSet	8h00 4/day				2	2	
117		Norway	Oso	Bergen	805/806	8h00/8h30	NotSet	7h00 4/day				2	2	
118		Norway	Oso	Trondheim	405/406	8h00	NotSet	8h45 3/day				2	2	
119	B	Norway	Trondheim	Bodo	475/476	8h30/10h30	Daily	10h00 1/day				2	2	
120		Finland	Helsinki	Rovaniemi	273/286	12h00/13h00	Daily	10h00 3/day		Y	Y			Joins with 933/904 at Tampere
121		Finland	Turku	Rovaniemi	933/904	11h30/12h00	Daily					2	x	Day carriages Turku-Tampere only. Joins with 273/286 at Tampere
122		Finland	Helsinki	Rovaniemi	275/284	12h45	1 or 2/week	10h00 3/day		Y	Y			
123		Finland	Helsinki	Kemijarvi	265/274	14h30/13h30	Daily			Y	Y			
124		Finland	Helsinki	Kolari	269-272	13h30	3 days/week			Y	Y			
125	P	International	Cheb	Kosice	Excelsior	15h30	Daily			Y	Y	2	Y	From Cheb to Prague also conveys Horehovec
126		International	Prague	Kosice	Slovakia	8h30	Daily	8h00 2/day		Y	Y			Couchettes between Prague-Poprad Tatly only
127	P	International	Cheb	Banska Bystrica	Horehovec	14h00	Daily			Y	Y			From Cheb to Prague also conveys Excelsior. Between Prague-Brestlevo attached to Melnyk. Day carriages from Bratislava (continue to Kosice).
128	B	International	Prague	Humenne	Strava	12h00	Daily			Y	Y	2	Y	
129	B	Slovakia	Brestlevo	Humenne	Zemplin	8h15	Daily			Y	Y	2	2	
130		Slovakia	Brestlevo	Prešov	Polana	7h45	NotSet							
131	B B	International	Budapest	Split	Adria	18h00	Summer 2 days/wk			Y	Y	2		Day carriages from Zagreb
132	P	International	Belgrade	Moscow	Tizza	48h00	Daily				Y			Day coaches to Budapest in summer once a week from Bar (+12h) as part of Penonje
133		International	Vienna	Warsaw	Chopin	8h15	Daily	8h00 2/day	Y	Y	Y	2	2	
134	P	International	Belgrade	Kiev	Tizza	37h00	1/week				Y			In summer once a week from Skopje (+10h)
135	P	International	Kielow	Budapest	402/3/6/7/6/77	12h00/13h00	Daily			Y	Y	2		Portons from Warsaw/Kielow to Vienna/Budapest/Prague
136	P	International	Warsaw	Budapest	402/3/6/7/6/77	13h00	Daily			Y	Y		2	Portons from Warsaw/Kielow to Vienna/Budapest/Prague. Separate train northbound only
137	P	International	Kielow	Prague	Silesia	10h00/11h00	Daily	8h30 1/day 8h30 ch		Y	Y	2	2	Portons from Warsaw/Kielow to Vienna/Budapest/Prague. Conveys Chopin from Moscow.
138	P	International	Warsaw	Prague	402/3/6/7/6/77	8h45	Daily	Octava 2/day		Y	Y	2	2	Portons from Warsaw/Kielow to Vienna/Budapest/Prague
139	P	International	Kielow	Vienna	402/3/6/7/6/77	11h00/9h30	Daily			Y	Y	Summer		Portons from Warsaw/Kielow to Vienna/Budapest/Prague.
140	P	International	Warsaw	Vienna	402/3/6/7/6/77	12h00/9h30	Daily			Y	Y			Portons from Warsaw/Kielow to Vienna/Budapest/Prague. Conveys Chopin from Moscow.
141		International	Budapest	Brezov	Corona	14h30	Daily	12h 1/day		Y	Y	2	Y	
142		International	Budapest	Sofia	Beograd	19h30/18h00	Daily			Y	Y		Y	Also conveys couchettes to Belgrade
143		International	Budapest	Bucharest	later EN470/473	17h00	Daily			Y	Y	Y	2	
144	S	International	Budapest	Bucharest	Muntenia	15h15	Winter	12h 1/day		Y	Y	2	2	In summer Dacia runs between Vienna-Budapest-Bucharest in some things
145	S	International	Vienna	Bucharest	Dece	17h00	Summer			Y	Y	2	2	In winter Muntenia runs between Budapest-Bucharest in some things
146	S	International	Munich	Rijeka	Opelje	8h00	Holiday seasons only			Y	Y	2		Day coaches Ljubljana-Rijeka only
147		International	Split	Zagreb	825/824	8h00	Daily	8h15 2or3/day		Y	Y		2	
148	S	Croatia	Split	Zagreb	1823/1822	8h00	High summer	8h15 2or3/day				Y	2	
149	P	International	Subotica	Bar	Penonje	18h00	Summer			Y	Y	2	2	On some days in high summer also conveys through carriages from Prague/Budapest
150	S	International	Belgrade	Bar	Aulivocz	11h45	Summer			Y	Y	2		See Lousen for winter service
151	S	International	Belgrade	Bar	Lovcen	11h00	Winter			Y	Y	2	2	See Aulivocz for summer service
152		International	Belgrade	Bucharest	Bucuresti	14h15/13h00	Daily			Y	Y		Y	
153		Poland	Szczecin	Warsaw	83204/81200/18201/00	7h00	Daily	8h30 5/day		Y	Y	2	2	
154		Poland	Szczecin	Przemysl	83200/512,38200/510	18h45/17h30	Daily			Y	Y	2	2	In summer starts from Sainhoubole (+1h30)
155		Poland	Kolobrzeg	Kielow	83202/3,38202/3	17h30	Daily			Y	Y	2	2	
156	S	Poland	Szczecin	Zakopane	83500/1,38500/1	15h15/14h30	Sliding season			Y	Y	2	2	
157	S	Poland	Kolobrzeg	Kielow	83508/9,38508/9	17h30	Summer			Y	Y	2	2	
158		Poland	Gdynia	Bielsko Biala	54200/500,45200/500	13h15/12h00	Daily			Y	Y	2	2	
159	S	Poland	Gdynia	Zakopane	35202/3,53202/3	18h00	Daily			Y	Y	2	2	
160		Poland	Gdynia	Wroclaw	54201/10,45200/10	8h30	Daily	8h30 1/day		Y	Y	2	2	
161		Poland	Warsaw	Jelenia Gora	81200,18201	12h00 /13h00	Daily			Y	Y	2	2	

Worksheet 2 Infrastructure Operator

Country	ISO code	Infrastructure Operator	Full name (*not separated from train operator)
			<i>Red = subsidiary of state train operator</i>
Austria	AT		ÖBB-Infrastruktur AG
Belgium	BE		Infrabel
Bosnia-Herzegovina	BA		*Željeznice Federacije Bosne I Hercegovine
Bulgaria	BG	NRIC	National Rail Infrastructure Co. (in Bulgarian, NKZh)
Belarus	BY	B Ch	*Belaruskaya Chyhunka
Croatia	HR		HŽ INFRASTRUKTURA
Czech Republic	CZ	SZDC	Správa Železniční Dopravní Cesty
Denmark	DK		Banedanmark
Estonia	EE	EVR	EVR Infra
Finland	FI		Liikennevirasto
France	FR	RFF	Réseau Ferré de France
Germany	DE		DB Netze
Hungary	HU	VPE	Vasúti Pályakapacitás-elosztó Kft
Italy	IT	RFI	Rete Ferroviaria Italiana
Luxembourg	LU		Directly owned by the state but contracted out to CFL
Macedonia	MK	MZ-I	Makedonski Železnici Infrastructure
Montenegro	ME	ZICG	ŽELJEZNIČKA INFRASTRUKTURA CRNE GORE
Netherlands	NL		Prorail
Norway	NO	JBV	Jembaneverket
Poland	PL	PKP PLK	Polskie Linie Kolejowe
Portugal	PT	REFER	Rede Ferroviária Nacional, E.P.
Romania	RO	AFER	Autoritatea Feroviara Romana
Russian Federation	RU	RZD	*Rossiskiye Zheleznye Dorogi
Serbia	RS		*Železnice Srbije
Slovakia	SK	ZSR	Železnice Slovenskej republiky
Slovenia	SI	SZ	*Slovenske Železnice
Spain	ES	ADIF	Administrador de Infraestructuras Ferroviarias
Sweden	SE		Trafikverket
Switzerland	CH	SBB	*Schweize Bundesbahn
Switzerland	CH	BLS	*Bem Lotschberg Simplon
Turkey	TR		*Turkiye Cumhuriyeti Devlet Demiryolları
Ukraine	UA		*Ukraliznytsya

SLEEPERS UNCOUPLED

CASE STUDY 1 - CITY NIGHT LINE

AN EXAMPLE OF PORTION-WORKING

20 February 2012



Images from City Night Line website and Mark Smith of Seat61.com



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CONTENTS

<p>1 Background..... 1 Financial Context..... 1</p> <p>2 Infrastructure and Access Arrangements 2 Denmark 2 Germany 2 Netherlands 2 Czech Republic 3</p> <p>3 Train and traction details..... 4 Train Formations 4</p> <p>4 Rolling stock quality, facilities and servicing..... 9 Double deck stock 9 Comfortline sleeping-cars..... 10 Couchettes 12 Seated carriages 13 Refreshment and other facilities..... 14</p> <p>5 Timetabling, Pricing and Ticketing...16 Timetabling 16 Pricing and ticketing 16</p> <p>6 Daytime and modal alternatives17</p>	<p>7 Border crossings..... 18</p> <p>TABLES Table 3.1 Service Summary4 Table 3.2 CNL473 Aurora Copenhagen to Basel with portions Borealis to Amsterdam and Orion to Prague4 Table 3.3 EN447 Jan Kipeura Amsterdam-Warsaw with portions Borealis to Copenhagen5 Table 3.4 EN457 Phoenix Berlin-Prague including portions of Kopernikus and Orion.....5 Table 3.5 EN456 Phoenix Prague-Hannover where portions continue attached to other trains.....6 Table 3.6 CNL 472 Aurora Basel-Copenhagen6 Table 3.7 EN446 Jan Kipeura Warsaw-Amsterdam7 Table 4.1 Refreshment and Cycle Facilities. 15</p> <p>FIGURES Figure 3.1 Portion Working Illustration8 Figure 4.1 Deluxe Compartment Plan9 Figure 4.2 Economy Compartment 10 Figure 4.3 Carriage Layout showing Connecting Cabins 10 Figure 4.4 Comfortline Carriage 11 Figure 4.5 Economy Compartment 11 Figure 4.6 Deluxe Shower Compartment..... 11</p> <p>Figure 4.7 Standard Couchette Carriage Plan 12 Figure 4.8 Wheelchair accessible compartment Layout 12 Figure 4.9 Carriage with wheelchair compartment 13 Figure 4.10 Wheelchair accessible compartment – day mode 13 Figure 4.11 Reclining Seats..... 13 Figure 4.12 Seating Compartment Layout... 14 Figure 4.13 Seating Compartment with Cycle Storage 14</p>
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1 Background

As we set out in the Task 2 Report, this case study has been selected because it illustrates the operation of a particularly complex form of portion working.

CityNightLine AG (CNL) was set up in 1995 as a joint venture between DB, OBB and SBB. Some financial difficulties saw a restructuring, and since 1999, it has been wholly owned by DB. However, other train operators remain as contractors to CNL, while since 2010, it has been part of DB's Autozug (Motor Rail) subsidiary. Currently this includes rolling stock owned/leased by DB, CD and SBB. Through carriages (not necessarily using the CityNightLine identity) are also provided by BC (Belarus) PKP (Poland) and RZD (Russia)

The network includes operations in Austria, Czech Republic, Denmark, France, Germany, Italy, the Netherlands and Switzerland, plus odd carriages to other countries. This section concentrates on the following services to indicate how portion working operates:

- Amsterdam-Copenhagen *Borealis* 447/473
- Amsterdam-Prague *Kopernikus* 457/456
- Copenhagen-Prague *Orion* 473/456

As will be seen below, by default this also includes Copenhagen-Basel *Aurora* 472/473

Financial Context

CityNightLine services carried 1.4 million passengers in 2011, though no split between proportions using sleepers, couchettes or seats. Financial information for CityNightLine and parent company DB Autozug from the DB Accounts for 2009 lists the two separately (as CityNightLine AG is a Swiss-registered company). CNL had a turnover of €50m, with 104 directly-employed staff; AutoZug a turnover of €183m and 377 staff.

A report in the German financial press suggests that for CNL, this represented a loss before interest and tax of €6m, and a note that it is heading for profit in 2014

Since the incorporation of Arriva, the same level of detail in the DB accounts is no longer available. However, as with the track access charges, we would again draw attention that the results of a subsidiary may be manipulated to benefit the ultimate holding company, DB AG, in particular through payments to other subsidiaries within the group.

With only 104 staff, CNL will for example be making substantial payments to DB Fernverkehr (Long Distance) for provision of train crew and locomotives, and to DB Netze for access charges. Indeed CNL have advised that there is a separate subsidy providing on-board service staff, through DB European Rail Service, which has approximately 1100 employees.

2 Infrastructure and Access Arrangements

The routes shown above operate in four different countries.

Denmark

Banedanmark publishes an English language version of its Network-Statement on its website, though the supporting appendices are only available in Danish.

http://uk.bane.dk/db/filarkiv/11384/Netredegorlse_2013%20endelig_version_til_offentligg%F8relse_translation.pdf

Section 5 of this document details the services for which charges may be made, though it sums up its approach as follows. “Railway Undertakings pay a kilometre charge, a capacity charge as well as supplements to the kilometre charge for use of the state's rail network, and a bridge charge for crossing the Great Belt and the Øresund. These charges together constitute railway charges.

The kilometre charge may be the same for all trains, or differentiate between freight trains and passenger trains. It is determined by the short-term marginal costs incurred by the state's rail network as a result of an average train operating on the rail network.

Rail Net Denmark can, on a fair and non-discriminatory basis, determine supplementary charges to the kilometre charge. On sections with a shortage of available capacity, a capacity charge can be added for specifically agreed time periods.”

The document notes that the rules on railway charges are under review. The basic marginal charge is DKK2.13/train km (a DKK 0.03 increase from the previous year).

Germany

The current Network-Statement of DB Netz AG (trading as DB Netze) is available in English at

http://fahrweg.dbnetze.com/site/dbnetz/en/networkaccess/network_statement/network_statement_2012.html

It describes in some detail the charging principles which reflect route category then further broken down by infrastructure features. This gives some 12 different charging bands, together with nine categories of train path.

The headline marginal cost per train kilometre varies between €1.77 and €4.48; for high speed routes, the figure is €8.76. However, there are multiplication factors that may apply

under certain circumstances that raise or lower these figures (e.g. regional factors; express train; stopping train).

The system is ultimately complex, and special software is available to download to assist train operators navigating their way through this system.

Netherlands

The Network Statement of infrastructure provider Pro-Rail is available in English at

<http://www.prorail.nl/English/Documents/2666794%20NV2012%20bijgewerkt%20tm%20aanv%203%20EN.pdf>.

Its approach to charging is summed up as “User charges for the minimum access package and for access via the railways to facilities (as referred to in Annex II of Directive 2001/14/EC) are determined to precisely cover the costs that result directly from the operation of the train service, without use of the option of additional surcharges as provided by Article 8 Paragraph 1 of Directive 2001/14/EC. User charges for the other services are determined to cover the costs of the provided service or facility, on the basis of the actual level of use”.

Pro Rail is prevented in law from making a profit.

The basic marginal charges are:

- € 0.6166 per train kilometre
- € 0.001974 per tonne kilometre
- € 48.93 (price level 2011) per train kilometre on high speed line

The 2012 cost has been reduced by € 0.0135 per train kilometre compared to 2011.

Czech Republic

The infrastructure operator is SZDC (Správa železniční dopravní cesty) or Railway Infrastructure Administration.

The Network Statement is available in English at <http://www.szdc.cz/en/soubory/prohlaseni-o-draze/11-12/prohlaseni-11-12.pdf>

Lines are classified by different characteristics, and the marginal rate of use varies. The basic rate per train kilometre starts at CZK 5.32

3 Train and traction details-

All trains in the CityNightLine network are electrically hauled. Voltages are different in Denmark and France (25kV ac) Czech Republic and Italy (3000V dc) and the Netherlands (1500V dc) to the remainder, which are 15kV ac. Some locomotives are capable of working on multiple voltages.

DB and ÖBB locomotives frequently work in each other's countries, and while there are other examples, it is common at border stations to be replaced by those of the national train.

Table 3.1 Service Summary

From	Dep.	To	Arr.	Train Name/No.
Amsterdam	1901	Copenhagen	1007	Borealis 447
Amsterdam	1901	Prague	0926	Kopernikus 457
Copenhagen	1810	Amsterdam	0959	Borealis 473
Copenhagen	1810	Prague	0926	Orion 473
Prague	1829	Amsterdam	0959	Kopernikus 456
Prague	1829	Copenhagen	1007	Orion 456

An NS loco heads the train to Emmerich, where 13 minutes is allowed for it to be

replaced by a DB one. The train makes an unadvertised stop at Hannover (arriving at 0145) for shunting to take place.

The portion for Berlin and Prague leaves at 0240. The portion to Copenhagen leaves at 0236, having been attached to the *Aurora* from Basel that arrived at 0203. The train from Berlin and Prague arrives at 0130 (although on some days, it is attached at Berlin to the *Jan Kipeura* from Warsaw that arrives at 0216). The *Aurora* train from Copenhagen arrives at 0213; part is attached to the Berlin and Prague train, part to the train to Amsterdam (dep. 0303) and the remainder continues to Basel at 0251.

The DB loco is replaced by a DSB loco at Padborg for the final leg to Copenhagen.

The Prague service is headed by a DB loco as far as Berlin (in fact it continues all the way to Warsaw); the Prague portion is then taken on by a multi-voltage loco of CD.

Train Formations

1 Below we detail the formations of the three pairs of trains that we have selected for further study. To help understanding of the portion working, the shaded sections refer to the same

through coaches within the different trains (colour coded for reference).

- 1 means first class;
- 2 means second class;
- DD means double-deck.
- Some of the bicycle-carrying carriages have a mixed layout with seats in compartments.

Table 3.2 CNL473 Aurora Copenhagen to Basel with portions Borealis to Amsterdam and Orion to Prague

Car No	Description	From	To	Notes
201	Sleeper 1/2	Copenhagen	Amsterdam	Detached at Hannover
202	Couchette 2 inc disabled	Copenhagen	Amsterdam	Detached at Hannover
203	Couchette 2	Copenhagen	Amsterdam	Detached at Hannover
204	Open 2 + bikes	Copenhagen	Amsterdam	Detached at Hannover
266	Sleeper 1/2	Warsaw	Basel	Attached at Hannover

265	Sleeper 1/2	Warsaw	Basel	Attached at Hannover
192	Couchette 2 inc disabled	Copenhagen	Basel	
193	Couchette 2	Copenhagen	Basel	
194	Open 2 + bikes	Copenhagen	Basel	
195	Couchette 2	Copenhagen	Basel	
196	Restaurant	Copenhagen	Basel	
197	DD sleeper 1/2	Copenhagen	Basel	
198	DD sleeper 1/2	Copenhagen	Basel	
161	Sleeper 1/2	Copenhagen	Prague	Detached at Hannover
162	Couchette 2	Copenhagen	Prague	Detached at Hannover

Car 266 is operated by RZD

Table 3.3 EN447 Jan Kipeura Amsterdam-Warsaw with portions Borealis to Copenhagen

Car No.	Description	From	To	Notes
201	Sleeper 1/2	Amsterdam	Copenhagen	Detached at Hannover
202	Couchette 2 inc disabled	Amsterdam	Copenhagen	Detached at Hannover
203	Couchette 2	Amsterdam	Copenhagen	Detached at Hannover
204	Open 2 + bikes	Amsterdam	Copenhagen	Detached at Hannover
266	Sleeper 1/2	Basel	Moscow	Attached at Hannover
265	Sleeper 1/2	Basel	Warsaw	Attached at Hannover
183	Sleeper 1/2	Amsterdam	Moscow	
182	Sleeper 1/2	Amsterdam	Minsk	
181	Sleeper 1/2	Amsterdam	Warsaw	
180	Sleeper 1/2	Amsterdam	Warsaw	
178	Couchette 2	Amsterdam	Warsaw	
176	Recliner 2	Amsterdam	Warsaw	
171	Sleeper 1/2	Amsterdam	Prague	Detached at Berlin
172	Couchette 2 inc disabled	Amsterdam	Prague	Detached at Berlin
173	Couchette 2	Amsterdam	Prague	Detached at Berlin
174	Open 2 + bikes	Amsterdam	Prague	Detached at Berlin

Car 171-174 are operated by CD. Cars 183, 266 by RZD. Car 182 by BC

Table 3.4 EN457 Phoenix Berlin-Prague including portions of Kopernikus and Orion

Car No.	Description	From	To	Notes
N/A	Couchette 2	Berlin	Prague	Not in Public Use
259	Day coach 2	Berlin	Prague	
260	Day coach 2	Berlin	Prague	
171	Sleeper 1/2	Amsterdam	Prague	Attached at Berlin
172	Couchette 2 inc disabled	Amsterdam	Prague	Attached at Berlin
173	Couchette 2	Amsterdam	Prague	Attached at Berlin
174	Open 2 + bikes	Amsterdam	Prague	Attached at Berlin
161	Sleeper 1/2	Copenhagen	Prague	Attached at Berlin
162	Couchette 2	Copenhagen	Prague	Attached at Berlin

Cars 171-174 are operated by CD

Table 3.5 EN456 Phoenix Prague-Hannover
where portions continue attached to other trains

Car No.	Description	From	To	Notes
259	Day coach 2	Prague	Berlin	Detached at Berlin
260	Day coach 2	Prague	Berlin	Detached at Berlin
162	Couchette 2	Prague	Copenhagen	Attached to 472
161	Sleeper 1/2	Prague	Copenhagen	Attached to 472
174	Open 2 + bikes	Prague	Amsterdam	Attached to 447
173	Couchette 2	Prague	Amsterdam	Attached to 447
172	Couchette 2 inc disabled	Prague	Amsterdam	Attached to 447
171	Sleeper 1/2	Prague	Amsterdam	Attached to 447
263	Recliner 2	Prague	Zurich	Attached to 458
265	Couchette 2 inc disabled	Prague	Zurich	Attached to 458
266	Couchette 2 + baggage	Prague	Zurich	Attached to 458
267 (CD)	Sleeper 1/2	Prague	Zurich	Attached to 458
252	Day coach 2	Prague	Erfurt	Detached at Dresden
251	Day coach 2	Prague	Erfurt	Detached at Dresden

Cars 171-174 are operated by CD. Car 266 by RZD

Table 3.6 CNL 472 Aurora Basel-Copenhagen

Reverses at Frankfurt

Car No.	Description	From	To	Notes
201	Sleeper 1/2	Amsterdam	Copenhagen	Attached at Hannover
202	Couchette 2 inc disabled	Amsterdam	Copenhagen	Attached at Hannover
203	Couchette 2	Amsterdam	Copenhagen	Attached at Hannover
204	Open 2 + bikes	Amsterdam	Copenhagen	Attached at Hannover
266	Sleeper 1/2	Basel	Moscow	Detached at Hannover
265	Sleeper 1/2	Basel	Warsaw	Detached at Hannover
192	Couchette 2 inc disabled	Basel	Copenhagen	
193	Couchette 2	Basel	Copenhagen	
194	Open 2 + bikes	Basel	Copenhagen	
195	Couchette 2	Basel	Copenhagen	
196	Restaurant	Basel	Copenhagen	
197	DD sleeper 1/2	Basel	Copenhagen	
198	DD sleeper 1/2	Basel	Copenhagen	

161	Sleeper 1/2	Prague	Copenhagen	Attached at Hannover
162	Couchette 2	Prague	Copenhagen	Attached at Hannover

Car 266 is operated by RZD

Table 3.7 EN446 Jan Kipeura Warsaw-Amsterdam

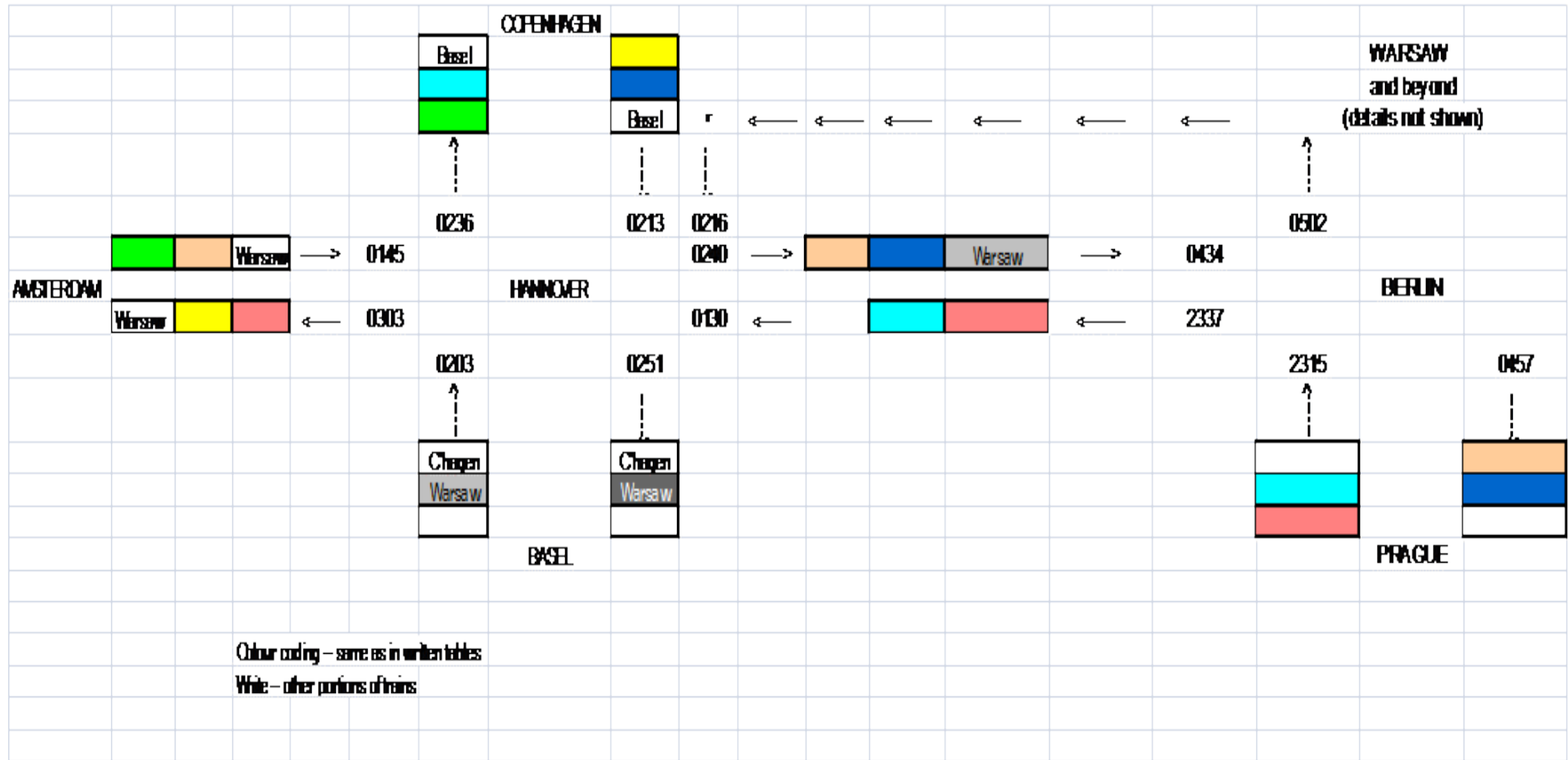
Car No.	Description	From	To	Notes
161	Couchette 2	Prague	Copenhagen	Attached at Berlin; detached at Hannover
162	Couchette 2 inc disabled	Prague	Copenhagen	Attached at Berlin; detached at Hannover
174	Sleeper 1/2	Prague	Amsterdam	Attached at Berlin
173	Recliner 2	Prague	Amsterdam	Attached at Berlin
172	Couchette 2	Prague	Amsterdam	Attached at Berlin
171	Sleeper 1/2	Prague	Amsterdam	Attached at Berlin
176	Sleeper 1/2	Warsaw	Amsterdam	
178	Sleeper 1/2	Warsaw	Amsterdam	
180	Sleeper 1/2	Warsaw	Amsterdam	
181	Sleeper 1/2	Warsaw	Amsterdam	
182	Sleeper 1/2	Minsk	Amsterdam	
183	Open 2 + bikes	Moscow	Amsterdam	
265	Couchette 2	Warsaw	Basel	Detached Hannover (to 473)
266	Couchette 2 inc disabled	Moscow	Basel	Detached Hannover (to 473)

204	Open 2 + bikes	Copenhagen	Amsterdam	Attached Hannover
203	Couchette 2	Copenhagen	Amsterdam	Attached Hannover
202	Couchette 2 inc disabled	Copenhagen	Amsterdam	Attached Hannover
201	Sleeper 1/2	Copenhagen	Amsterdam	Attached Hannover

Cars 171-174 are operated by CD. Cars 183, 266 by RZD. Car 182 by BC

The preceding tables are also shown graphically in the Figure below, illustrating the complexity of the portion working arrangements.

Figure 3.1 Portion Working Illustration



4 Rolling stock quality, facilities and servicing

City Night Line runs a wide variety of rolling stock, though much of it was built new between 1995-2005. Others are refurbished carriages of older build. Most is passed to run at 200 km/h (125mph) though at one stage, lower speeds were imposed to reduce maintenance costs.

All sleeping cars offer complimentary toiletries and hand towels, and all the compartments can be locked by the passenger from inside and outside (the latter usually with a keycard). There is a call system to contact the attendants.

A substantial part is operated by CD and SBB, as well as the large fleet of DB. There are fixed workings for each train operator, though trains may be made up of carriages from more than one operator.

Double deck stock

The most distinctive carriage is the 26.9m long air-conditioned double-decker, of which there are 54, half of which are second class only. Of the remainder, deluxe sleepers with shower/WC are located at the upper level. These carriages have side corridors with short

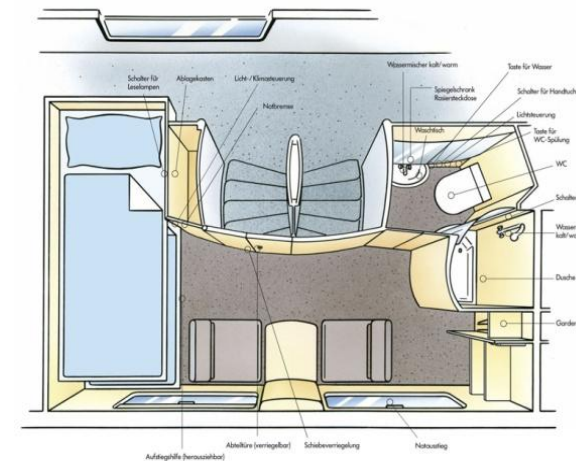
flights of stairs up or down to individual compartments.

All-second coaches have 18 two-berth compartments (described by many travellers as “rather narrow”). Mixed coaches have four deluxe two-berth compartments on the upper level, and nine economy two-berth compartments on the lower deck.

The deluxe compartments are double the length of the economy compartments below, and are the most generously-sized sleeping compartments in Europe. They incorporate a shower, separate WC and basin, an open wardrobe, and a fixed table with two seats for day use. The latter obviate the need for the beds to fold down during the day. A particular feature is the double windows, at normal level and at roof level. There is an integral hairdryer in the bathroom.

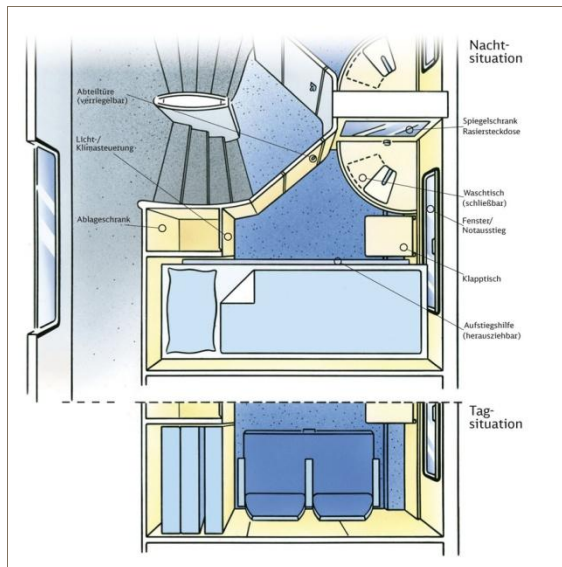
Figure 4.1 illustrates the layout.

Figure 4.1 Deluxe Compartment Plan



The economy standard compartments include a basin, a small cupboard and a folding table. The two berths fold away during the day, with the space occupied by two individual seats. Figure 4.2 illustrates the layout.

Figure 4.2 Economy Compartment



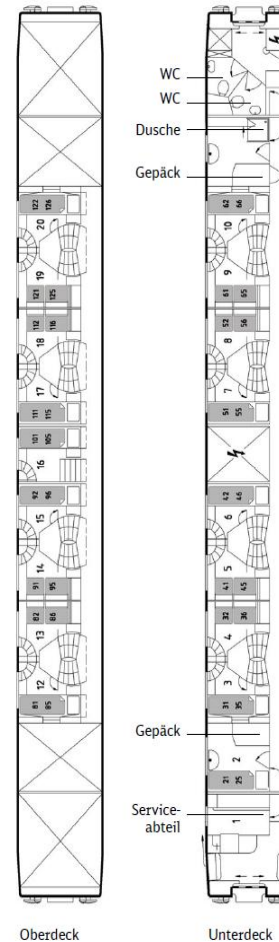
There are two WCs in every carriage.

Certain compartments have communicating doors to create a shared space for larger parties.

These are shown on Figure 4.3.

Figure 4.3 Carriage Layout showing Connecting Cabins

Informationen	
Kapazität	18 Economy Single/ Double Abteile
Sanitäranlagen	Economy Abteile mit Waschgelegenheit 2 WC, 1 Dusche
Bett Nummerierung	Unteres Bett im Abteil: 1/2 Oberes Bett im Abteil: 5/6
Bettmaße	Betten: 190 x 70 cm
Besonderheiten	2 Gepäckschränke im Gang
verkehrt auf Linie: Komet	



Comfortline sleeping-cars

The single deck sleeping cars are referred to as Comfortline. These include 12 compartments, of which 3 incorporate showers and WCs. Within the nine economy compartments, three pairs can be opened up to create 6-berth compartments (as indeed can the deluxe compartments), the remainder have 3 berths. They all have a washbasin, while WC facilities are located at each end of the carriage; there is also a shower at one end only. In both types of compartment, berths fold away for three individual seats for day use. Certain compartments have communicating doors to create a shared space for larger parties.

All Comfortline compartments have power sockets for laptops and mobiles. Folding clip-on tables are provided for each compartment, stowed when not in use.

Duvets have replaced the traditional sheets and blanket on all CNL sleepers – a trend also adopted by Elipsos (Case Study 2).

The compartments are shown on the following three figures – Figure 4.4 illustrating the carriage layout, Figure 4.5 the layout of an economy compartment and Figure 4.6 that of a deluxe compartment.

Figure 4.4 Comfortline Carriage

Informationen	
Kapazität	
■	3 Deluxe Single / Double / Dreier Abteile
■	9 Economy Single / Double / Dreier Abteile
Sanitäranlagen	
Deluxe Abteile mit Dusche / WC im Abteil	
Economy Abteile mit Waschgelegenheit, 2 WC, Dusche im Wagen	
Bettnumerierung	
Unteres Bett im Abteil: 1 / 2	
Mittleres Bett im Abteil: 3 / 4	
Oberes Bett im Abteil: 5 / 6	
Bettmaße	
Untere Betten: 190 x 75 cm	
Mittlere Betten: 190 x 75 cm	
Obere Betten: 200 x 65 cm	
Besonderheiten	
Abteile mit Verbindungstür (Suite) 1 und 2, 3 und 4, 5 und 6 usw.	

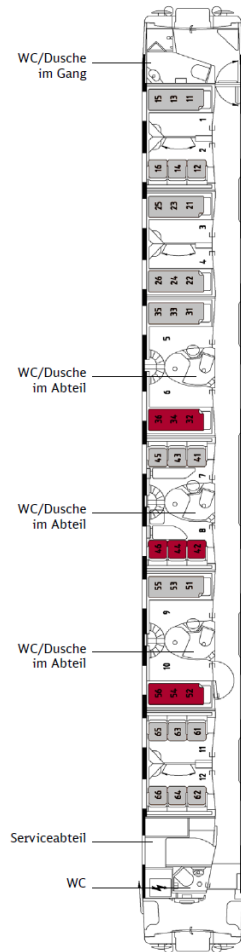


Figure 4.5 Economy Compartment

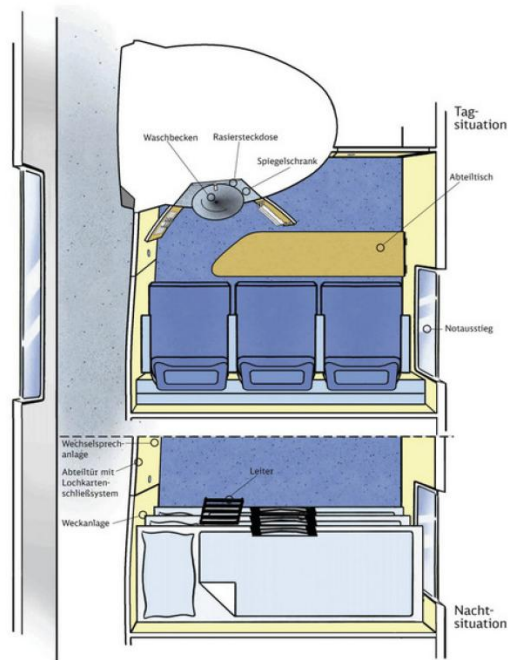
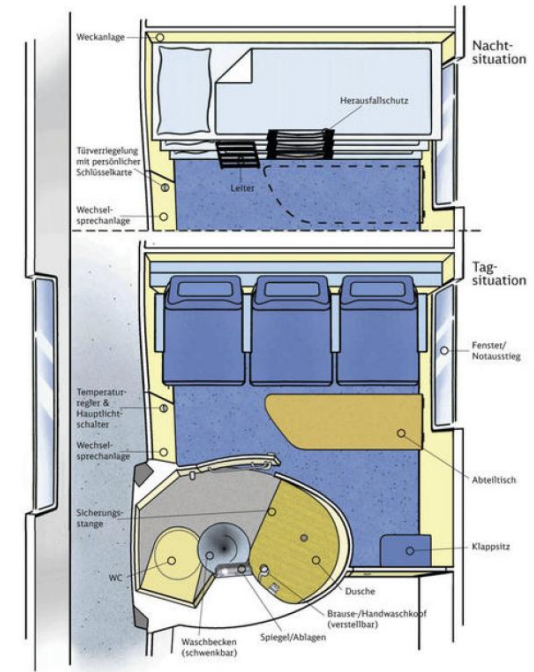


Figure 4.6 Deluxe Shower Compartment



Couchettes

The standard couchette car comes with 10 compartments of 6 seats or berths. These fold away to allow two bench seats for day use. They have no other facilities; a WC is located at either end of the carriage, as well as three separate washrooms. DB list the amenities as blanket, sheet, pillow and “freshly laundered pillow case”. They are not air-conditioned, but each compartment has its own temperature control.

Figure 4.7 illustrates the plan for the standard couchette car.

Some couchettes have been modified to offer a wheelchair-accessible compartment. This has a power-operated door, and is located next to a (public) WC also with a power-operated door. It has are two couchette berths, a tip-up seat, and an emergency call button.

Figures 4.8 to 4.10 illustrate the wheelchair accessible accommodation.

Figure 4.7 Standard Couchette Carriage Plan

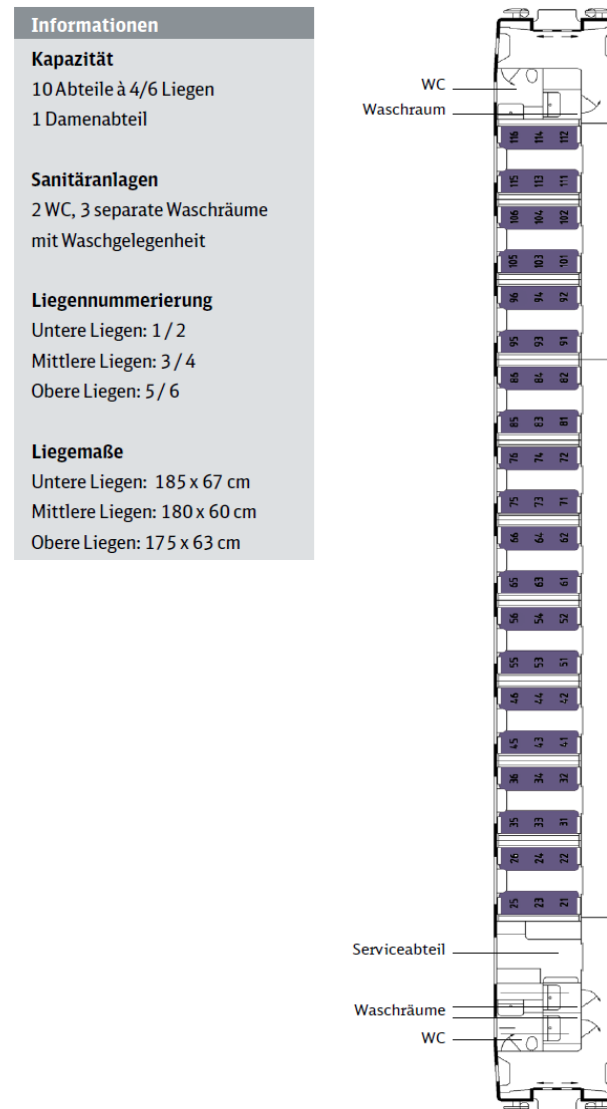


Figure 4.8 Wheelchair accessible compartment Layout

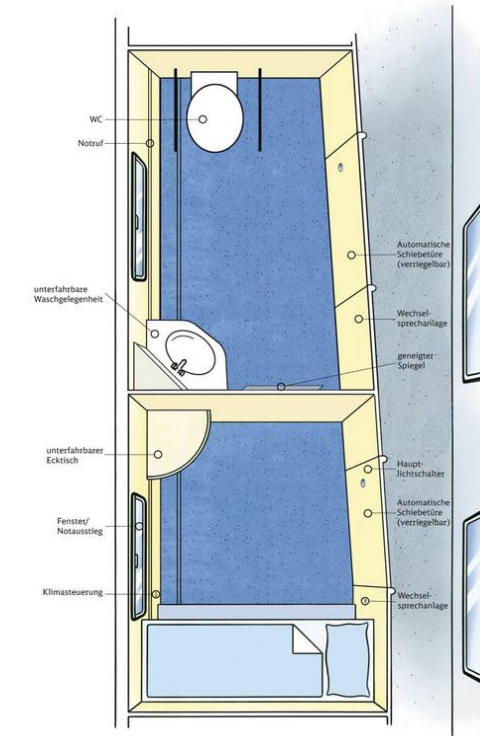


Figure 4.9 Carriage with wheelchair compartment

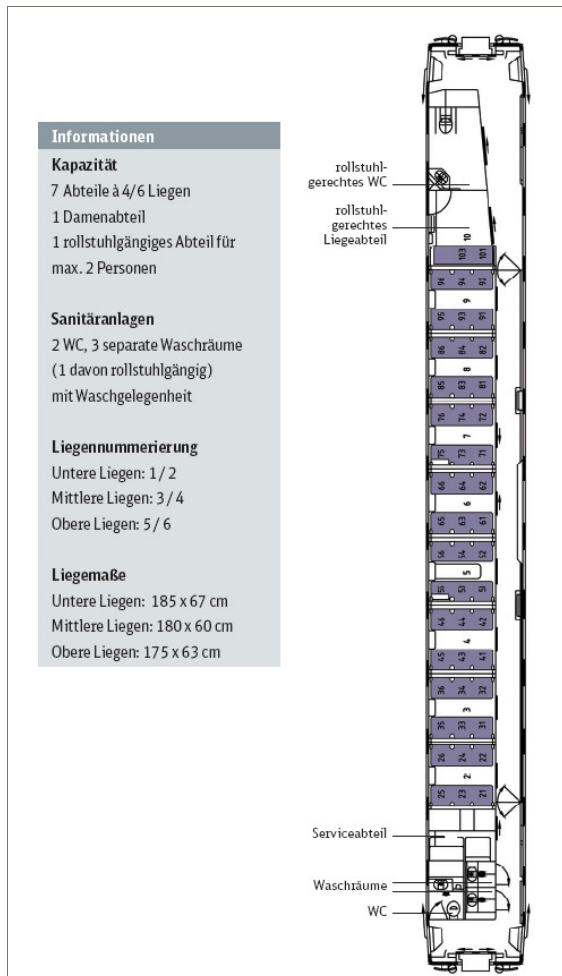


Figure 4.10 Wheelchair accessible compartment – day mode



Seated carriages

The majority of CityNightLine trains offer seated accommodation. The main type is open plan, seating 62 people in pairs of unidirectional reclining seats, divided into four areas separated by luggage stacks. On the Amsterdam-Munich/Zurich and Berlin-Zurich service radically different reclining seating is offered - the most notable feature being an individual “canopy” to each seat as illustrated in Figure 4.11.

Figure 4.11 Reclining Seats



A smaller number of carriages seat 54 people, with the remainder given over to space for bicycles. There is a toilet and separate washroom at both ends of both types of car. Blankets are available on request.

There are also compartment carriages containing 11 6-seat compartments. These have only WCs at either end.

The standard and bicycle carrying carriage layouts are shown in Figures 4.12 and 4.13 respectively.

Figure 4.12 Seating Compartment Layout

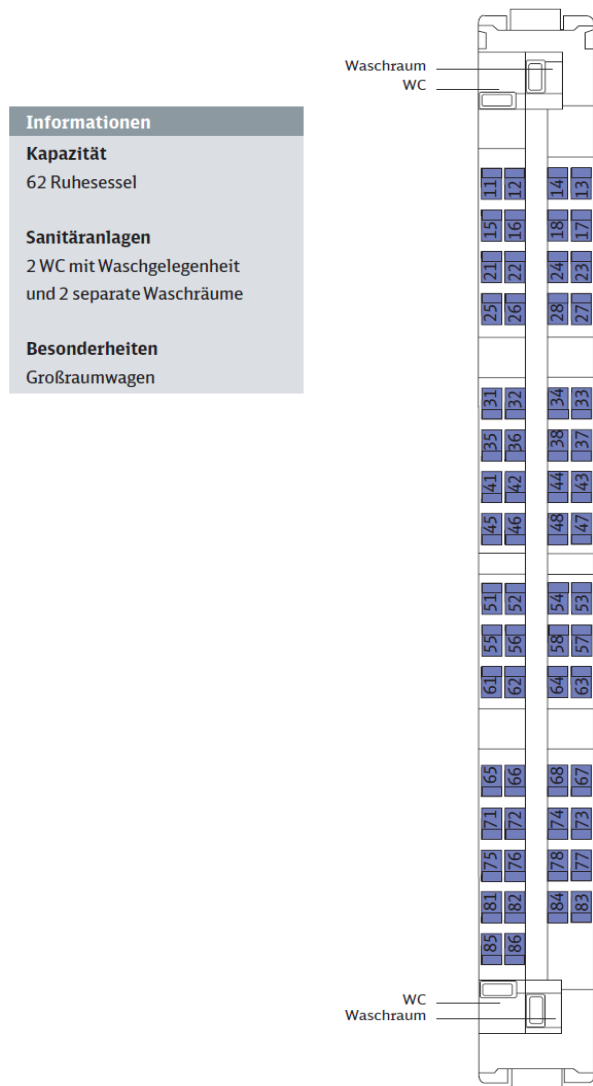
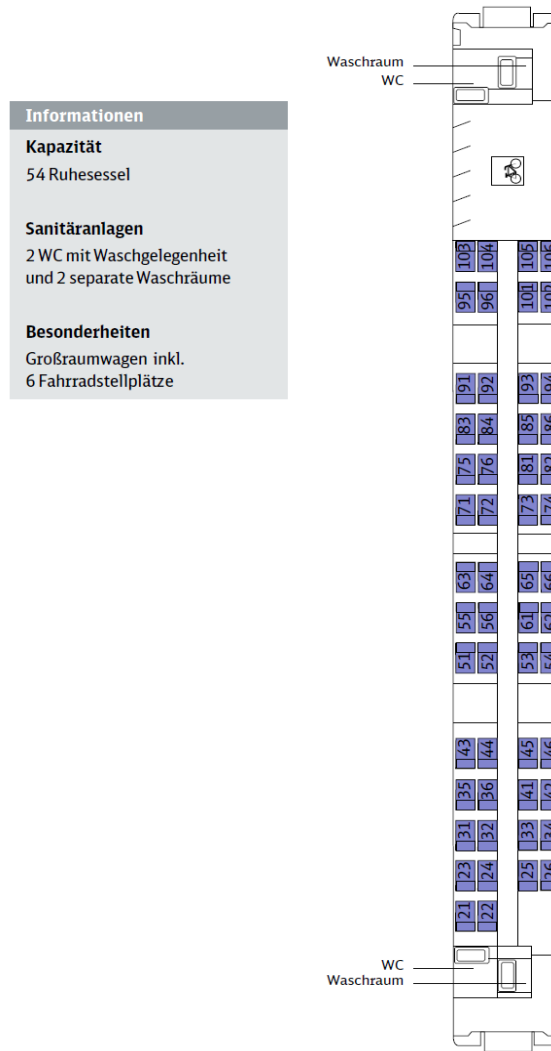


Figure 4.13 Seating Compartment with Cycle Storage



Refreshment and other facilities

The level of service varies from train to train. Broadly, there is either a full restaurant car available, or just snacks and drinks. In the former case, partly because of portion working, the restaurant may only be open for part of the journey, as shown in the table below. This also details the availability of bicycle carriages. A light breakfast is provided for all sleeper passengers with a larger breakfast provided for the deluxe passengers. It is served in the compartment or in the bistro car where one operates.

Menus can be found at

- http://www.citynightline.ch/citynightline/view/en/info_buchung/speisewagen_menu_reservation_en.shtml

Further pictures of interiors can be found at:

- <http://www.railfaneurope.net/pix/at/car/night/WL/ex-CNL/pix.html> (shows cars now running for OBB but previously on CNL duties)

There are videos (of varying quality) at:

- <http://www.youtube.com/watch?v=29B7W8-JA68&feature=endscreen&NR=1>
- <http://www.youtube.com/watch?NR=1&v=nOiTfBfIQw0&feature=endscreen>
- <http://www.youtube.com/watch?v=bXibVVopIRk&feature=related>
- <http://www.youtube.com/watch?v=Pw7bWSON7sl&feature=related>

CityNightLine has its own YouTube channel, primarily for sightseeing at the destination, though some include incidental shots of the interiors of the trains. However, “Hessen schlaflos: Der Nachtzug” (“*Sleepless Hessen: the night train*”) looks at the service from the point of view of a train attendant, and contains some interesting insights into its operation.

The YouTube film “Hessen Schlaflos: Der Nachtzug” reveals that refreshment supplies are topped up en route.

Carriages are serviced during the day by the depot in the city where they are stabled. For example, the Amsterdam coaches to the Watergraafmeer depot, about 10 minutes from Central Station (although of note, the loco used for this trip is hired from a third party)

.As far as we understand, these are commercial arrangements with the local supplier. Heavy maintenance is always undertaken at the home depot

Table 4.1 Refreshment and Cycle Facilities

Route	Name of train	Dining car	Bicycle Carriage
Hamburg-Paris	Andromeda	Hamburg–Hannover	-
Basel-Copenhagen	Aurora	whole distance	8 places
Amsterdam - Copenhagen	Borealis	Hamburg - Copenhagen	8 places
Zürich – Prague	Canopus	Zurich - Frankfurt	20 places
Munich - Berlin	Capella	small snacks and drinks offered by the service team	6 places
Munich - Paris	Cassiopeia	small snacks and drinks offered by the service team	8places
Zürich-Hamburg	Komet	whole distance	20 places
Amsterdam - Prague	Kopernikus	small snacks and drinks offered by the service team	8places
Munich - Rome	Lupus	small snacks and drinks offered by the service team	20 places
Copenhagen - Prague	Orion	Copenhagen - Hamburg	-
Zürich - Amsterdam	Pegasus	Zurich - Karlsruhe	20 places
Berlin - Paris	Perseus	small snacks and drinks offered by the service team	8 places
Munich - Venice	Pictor	small snacks and drink offered by the service team	8 places
Amsterdam - Munich	Pollux	small snacks and drinks offered by the service team	20 places
Munich - Hamburg	Pyxis	small snacks and drinks offered by the service team	6 places
Zürich-Berlin/Binz	Sirius	whole distance	20 places

Trains shown in bold were described in Section 3

5 Timetabling, Pricing and Ticketing

Timetabling

Timetables for all of these services are in the DB English language brochure. A comparison with the working timetables show that many make extra stops that are not advertised to the public, while at some stations, the stop can be protracted. In some cases, this is to give passengers more time to board or alight; at others, it is for pathing or operational reasons. The following are given as examples:

- Emmerich – 13 minutes to change locomotives
- Berlin Ost – 28 minutes to divide train
- Karlsruhe – 11 minutes
- Frankfurt – 26 minutes to change locomotives and direction
- Padborg – 25 minutes to change locomotives
- Hamburg – 32 minutes
- Dresden – 7 minutes to attach/detach carriages

Note also, that except on the Amsterdam-Warsaw *Jan Kiepura* service, none of the trains studied are scheduled to call at Hannover.

Pricing and ticketing

Sample prices are shown in the English language brochure, though there are a wide range of offers and discounts that give a wide variety in fares for the same journey.

Booking is possible at all of the stations served in all of the countries (though international tickets are not available at all staffed stations) and on the internet, though not all facilities may be available through the latter (e.g. booking a female-only compartment). Around 30% of all DB long-distance bookings are now by internet, and this includes a print-at-home service.

DB also sells tickets in Germany via a network of agents, some of whom run retail outlets at otherwise unstaffed stations, others are traditional travel agents. In the UK and several other countries other DB has a sales office offering telesales of a wide range of DB and other operator tickets.

DB's self-service station ticket machines replicate the software functionality of the website and permit advance purchase of any point to point German journey and many international ones including overnight services

up to 12 months in advance (92 days for discounted tickets). This is in marked contrast to UK ticket machines which often do not offer out of area tickets or permit purchases more than 48 hours in advance

Both DB and NS tickets are now generally slightly dearer if bought from a sales desk rather than from a machine or website. DB offers advance purchase discounted *Spezial* fares on international routes operated by DB or routed via Germany, this includes the entire City Night Line network. Unlike most other rail or air operators DB allows cancellation and refund of discounted tickets on payment of a 15 Euro admin charge; discounted sleeper and couchette berths are specifically excluded from this refund arrangement.

DB offers rail cards known as Bahncards, which offer discounts of 25%, 50% or 100% off full fares and are available in both first and second class versions. The Bahncard 25 (but not the Bahncard 50) also offers reductions on the already-discounted Sparpreis tickets.

6 Daytime and modal alternatives

As Figure 3.1 showed, there are a large number of regular interval daytime services operating across Germany and its borders, and many journeys can be made with minimal changes. Amsterdam-Copenhagen only requires two changes, at Duisburg and Hamburg, though falls victim at the first to a 1 hour 40 minute wait, having narrowly-missed a two-hourly service. This pushes overall journey time up to a little over 11 hours, compared to travelling time of about 9 hours.

Basel-Copenhagen requires only one change at Hamburg (destination of an hourly ICE service from Basel). Unfortunately it again falls victim to a just-missed connection at Hamburg, resulting in a wait of 1 hour 53 minutes, producing a 13 hour journey time northbound, compared to an 11 hour one southbound.

Amsterdam-Prague journeys vary from 10 to 12 hours, with the fastest journey being via Frankfurt and Nuremberg, completing the link by coach (operated by a DB-owned company) to Prague. Again, the length of journey is such that it can only be achieved 3 times a day.

Coach services within Germany are relatively restricted, though liberalisation is now taking place. Eurolines offer international

connections; Amsterdam-Copenhagen is 14 hours overnight, operating six nights a week, but requiring a change of coach at Hamburg on alternate nights. Amsterdam-Prague operates 4 nights a week, taking 15.5 hours.

Flights are possible between all of these destinations, with Amsterdam-Schipol being a major hub airport for Europe.

7 Border crossings

CityNightLine runs entirely within the Schengen area, so except under special circumstances, passports are not checked. When this is necessary, the usual practice is for the attendant to take the passport when the berth is first occupied, and to return it the following morning.

Previously it was not uncommon for both passport and customs officials to wake passengers at border crossings – usually twice as the formalities were conducted separately by both countries. This remains the case in the Balkans, where there is generally a more zealous enforcement of what are relatively new borders. Nevertheless, such formalities are usually conducted on the train.

From a railway operating point of view, special regulations govern the interchange of traffic with other countries. DB Netze lists 51 such connections, and describes each (in German) at

http://fahrweg.dbnetze.com/site/dbnetz/zubehoer_assets/de/anhaenge/nutzungsbedingungen/grenzvereinbarung/zusammenstellung.pdf

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CASE STUDY 2 - TALGO ELIPSOS

HOTEL TRAIN FROM SPAIN TO SWITZERLAND

20 February 2012





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CONTENTS

1	Background.....	1
2	Infrastructure and Access Arrangements	2
	Spain	2
	Switzerland	2
3	Train and traction details.....	3
4	Rolling stock quality, facilities and servicing	4
	Gran Class.....	4
	Preferente.....	4
	Tourist.....	5
	Reclining Seats.....	5
	Catering	5
	Servicing.....	6
5	Timetabling, Pricing and Ticketing.....	7
6	Daytime and modal alternatives	9

7	Border crossings.....	10
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TABLES

Table 3.1	Pau Casals Train Formation	3
Table 5.1	273 Pau Casais.....	7
Table 5.2	274 Pau Casais	7
Table 5.3	11273 Salvador Dali.....	7
Table 5.4	11274 Salvador Dali.....	7

FIGURES

Figure 1.1	Elipsos Talgo Services	1
Figure 4.1	Gran Class Cabin.....	4
Figure 4.2	Preferente Car Layout.....	4
Figure 4.3	Preferente Cabin.....	5
Figure 4.4	Tourist Class Cabin.....	5
Figure 4.5	Seating Car Layout	5
Figure 4.6	Restaurant Car.....	5

1 Background

As we set out in the Task 2 Report this case study has been selected as a good example of the relatively upscale train hotel concept.

Various services are operated under the Elipsos brand - a Spanish-registered company owned jointly by RENFE and SNCF – including two between France and Spain (Paris – Barcelona and Paris – Madrid). This case study is based upon the Zurich-Barcelona service. We understand that Elipsos has been achieving occupancy rates of 87% on this route.

Spanish sleeping cars are exclusively lightweight, short length, articulated Spanish-designed “Talgo” stock. These have single axles and a low profile, yet offer some of the highest quality sleeping accommodation in Europe. Talgo rolling stock has been sold to few other railways.

The current network includes operations within Spain and to Portugal, and after changing from the Iberian gauge of 1668mm, also to France, Italy, Portugal and Switzerland.

Figure 1.1 Elipsos Talgo Services



In the past, DB had purchased Talgo train sets for use in Germany; these were withdrawn in 2009.

2 Infrastructure and Access Arrangements

Spain

ADIF (Administrador de Infraestructuras Ferroviarias or Administrator of Railway Infrastructures) publishes its Network Statement in English at http://www.adif.es/en_US/conoceradif/declaracion_de_la_red.shtml

The Spanish charging system breaks lines down into various categories and by different time periods. There are also additional charges based on the number of passengers. The approach is summed up as follows: “Tariff amounts will be established according to the economic value of the commercial rail transport services provided, measured in terms of capacity offered, enabling to distinguish them by time and day and type of line”.

Marginal costs are made up of several components, and it is difficult to identify a headline price per train kilometre. However, the IBM report “Rail Liberalisation Index 2011” has calculated figures of €0.20-0.40 for ordinary lines and €7.50-9.50 for high speed lines.

There is no open access for domestic passenger operations, only for cross-border services.

Switzerland

As it is outside the EU, the railway administrations here do not have to comply with EU directives, though in some cases do so. Nevertheless, they offer similar services, and state operator SBB retains ownership of its infrastructure, though with separate accounting. While the freight market is very liberal, passenger services are restricted to cross-border and through transit trains. Contracts for passenger trains are awarded directly, though tendering is being debated.

Allocation of train paths is by a separate company (Trasse Schweiz AG) jointly owned by the infrastructure operators. Fees are however determined by the state and administered by the individual companies.

The SBB Network Statement conforms to the Euro Rail Net model, and is available in English at <http://bit.ly/xH9uS8>

SBB's principles for charging are set by the Federal Office of Transport (BAV):

➤ *“The fee payable shall be determined without discrimination and must cover at least the usual marginal costs accrued in respect of a modern railway line; these*

marginal costs are defined for each line category by the BAV. It shall take into account, in particular, the different costs within the network, the environmental impact of the rolling stock and demand aspects. In the case of regular passenger services, the fee will comprise the marginal costs defined by the BAV for the relevant line category and the revenue share from the service defined by the franchising authority. The BAV defines the basis for calculation of charges and arranges for their publication. In defining the basis for calculation, the BAV ensures that comparable routes are subject to uniform levels of train path pricing and that optimal use is made of rail capacity.”

A particular environmental feature is a reduction in price for trains meeting low-noise criteria.

The IBM report “Rail Liberalisation Index 2011” has calculated figures for marginal train kilometres of €2.40 for regional trains and €4.83 for long-distance trains.

3 Train and traction details.

The Barcelona-Zurich Pau Casals Trenhotel Elipsos service is hauled electrically throughout, but locomotives are changed at Portbou/Cerbere (RENFE to SNCF, including gauge change) and at Geneva (SNCF to SBB). A diesel shunter owned by ADIF is used at Cerbere to push the train through the gauge changer

Talgo stock requires special carriages at each end of the train, which are the only ones fitted with conventional couplings etc. However, the formation can be varied within; the Pau Casals uses a 15-car set formed as shown in Table 3.1.

Table 3.1 Pau Casals Train Formation

Car Nos.	Type	Description
91	TG	Generator Van – no passengers
31	TW lu	Reclining seats – 20 first class seats
32-34	TW lg	Preferente - 6 compartments x 2 berths
50	TR	Restaurant
51	TC	Bar/Cafe
35	TW lg	Gran Classe – 5 double en-suite compartments x 2 berths
44-47	TW lu	Tourist Class – 5 compartments x 4 berths
48-49	TW lg	Preferente - 6 compartments x 2 berths
92	TGz	Generator Van – no passengers

This is Talgo 6 stock, built between 1989-1999. The generator vans provide power for air conditioning for the whole train. There are two sets dedicated to this route; two with slightly different formations on the associated service to Milan; and four sets for the Paris routes. The latter are to a longer formation including four Gran Classe carriages.

Elipsos is a Spanish-registered company owned jointly by RENFE and SNCF. Elipsos also provides two trains to France, though in all cases, RENFE owned-stock usually used on domestic services has been substituted on an individual carriage basis.

4 Rolling stock quality, facilities and servicing

Elipsos offers four levels of accommodation: Gran Class, Preferente (Club in English), Tourist (all sleepers) and reclining seats.

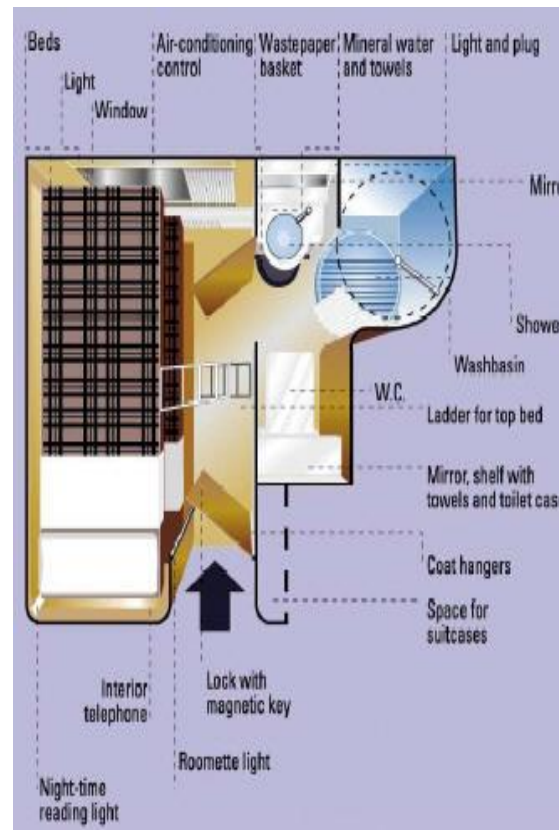
Gran Class

Gran Classe is the top level service, with an evening meal and a breakfast in the restaurant included in the price, plus a newspaper. The compartments, often described as small but cosy, have two fold-down bunks for night time which, when folded away, reveal two seats for daytime use. There is an en-suite shower and WC, somewhat small

The compartments include an internal call system, reading lights, power point, complimentary mineral water and toiletries, and towels. As restaurant meals are at fixed times, the attendant will fold down the bunks while the passengers are eating.

(the following images are taken from the Elipsos website except Figure 4.6)

Figure 4.1 Gran Class Cabin



Preferente

Preferente is also described as club class, with breakfast included in the price. There is an internal call system, reading lights, washbasin, soap, towels and mineral water. The only power point appears to be a razor plug integrated into the vanity unit. A space behind the door effectively doubles as an open wardrobe. Again there are two fold-down bunks, revealing seats for daytime use. The attendant folds out the bunks on request; a complimentary newspaper is provided.

The whole compartment must be booked, whether required for one or two berths. Some compartments have communicating doors to create a 4 berth compartment, which would be more generously-sized than a tourist class option. A toilet is available at the end of the carriage.

Figure 4.2 Preferente Car Layout

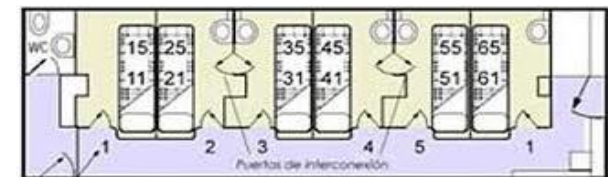
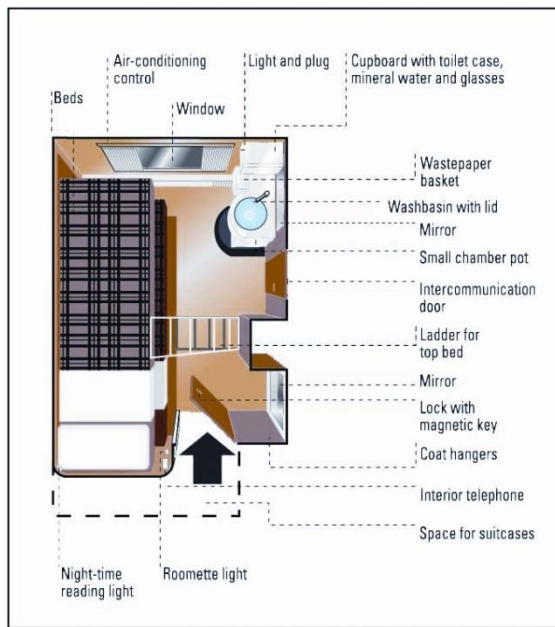


Figure 4.3 Preferente Cabin

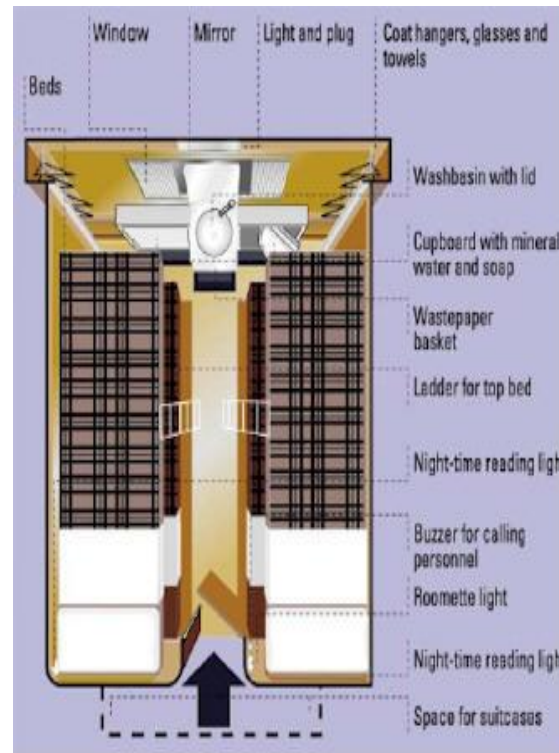


Tourist

Tourist class has four berth compartments with a washbasin. As with the other classes, bunks fold away to reveal seats for daytime use while soap, towels and mineral water are provided, there are no meals included.

A toilet is available at the end of the carriage.

Figure 4.4 Tourist Class Cabin



Six Preferente class compartments (for 12 people) occupy the same space as five tourist class compartments (20 people).

Reclining Seats

Reclining seats are available in one carriage, described as first class. The Elipsos website describes these as “super recliners” reaching 140°. These are arranged in 2+1 unidirectional format, except that in the middle, one bay

faces each other (see plan). A toilet is available at the end of the carriage.

Figure 4.5 Seating Car Layout



Passengers using this carriage benefit from a reading light, magazines, a bottle of water, a disposable blanket, a shoe bag, earplugs and a sleeping mask

Catering

Catering consists of a bar offering snack and drinks and a 30-seat restaurant offers a fairly high quality three course a la carte meal in the evening.

Figure 4.6 Restaurant Car



Courtesy of Mark Smith www.seat61.com

Catering is provided by a separate company, Cremonini Rail Ibérica, a subsidiary of an Italian group that provides catering on all high speed RENFE trains (and also on much of the SNCF high speed network). A variety of special menus (such as gluten-free, kosher and diabetic-friendly, as well as more usual options) can be requested at the booking stage.

Servicing

Each train is back in Barcelona every second day, plus one whole day when it is not in use. This enables primary maintenance to be undertaken alongside RENFE's directly-owned Talgo trains. It is unlikely that there are dedicated staff, but time would be charged to Elipsos. Light servicing is carried out in the facilities of railways (or contractors) at the outer end of the route. Curiously the Elipsos website makes specific reference to lost property being handled by the local train operator.

Catering contractor Cremonini has other businesses at each of the terminal points, and we presume uses these facilities to service the train.

Further details on the service provision are at;

<http://www.raileurope.co.uk/Default.aspx?tabid=1673>

There are a considerable number of photographs of interiors and exteriors on this site (which includes all Talgo trains, not just Talgo 6 stock).

<http://www.railfaneurope.net/pix/es/car/Talgo-Trenhotel/pix.html>

The compact size of the trains is reflected in the restricted angles of view of most photographs.

Videos of the interiors may be found here:

- <http://www.elipsos.com/flash/paseo/popup.htm?lang=3>
- <http://www.youtube.com/watch?v=Tsqo54jizg4>
- <http://www.youtube.com/watch?v=JbVKDo1RYGc&feature=related>

5 Timetabling, Pricing and Ticketing

The train runs on three days a week only (eastbound departures are on Sunday/Tuesday/Thursday; westbound departures a day later). As noted above, there are only two train sets dedicated to the service.

Passengers may travel from Spain or France to Switzerland or Italy, but no other journeys are permitted (in part, as there is no accommodation for other passengers).

Table 5.1 273 Pau Casais

Barcelona-França	19:25:00
Girona	20:46:00
Figueres	21:14:00
Perpignan	22:32:00
Genève	05:45:00
Lausanne	06:55:00
Fribourg	08:11:00
Bern	08:48:00
Zürich HB	10:09:00

Table 5.2 274 Pau Casais

Zürich HB	19:27:00
Bern	21:08:00
Fribourg	21:45:00
Lausanne	22:35:00
Genève	23:35:00
Perpignan	07:04:00
Figueres	08:29:00
Girona	09:02:00
Barcelona-França	10:30:00

Table 5.3 11273 Salvador Dali

Barcelona-França	19:25:00
Girona	20:46:00
Figueres	21:14:00
Perpignan	22:32:00
Bardonecchia	06:42:00
Torino P.S.	08:05:00
Novara	09:12:00
Milano-Centrale	09:59:00

Table 5.4 11274 Salvador Dali

Milano-Centrale	19:40:00
Novara	20:18:00
Torino P.S.	21:09:00
Bardonecchia	22:15:00
Perpignan	07:04:00
Figueres	08:29:00
Girona	09:02:00
Barcelona-França	10:30:00

There is a time-limited free parking offer available at Barcelona-França to holders of Gran Class or Club Class tickets.

The train is available to board at Barcelona for 45 minutes before departure, and at Zurich for 15 minutes.

Booking opens 90 days in advance. Web booking options vary by provider. The Elipsos website takes certain information, before transferring details to the RENFE website for actual purchase, although there was a variation in prices between the two sites.

As there are varying ticketing options, Elipsos recommends the following sites:

- www.renfe.com from anywhere in the world; you can print the tickets at home.
- www.voyages-sncf.com ; you can receive the tickets by post or collect them in France.
- www.tgv-europe.com ; the tickets are sent by post to any European country or collected at a French station.
- www.raileurope.com for countries in North America, Central America and the Caribbean.
- www.raileurope.co.uk for United Kingdom.
- For other countries, www.raileurope-world.com/map. Tickets sent to home address.

Children under four are free; for a small fee, those aged 4 to 11 may share a bed with adults, provided the whole compartment has been booked.

There are various special fares, including “Senior Fares” for over 60s that are available to anyone able to prove their age; reduced fees for a companion to a disabled passenger; and for small and large groups.

A sample single journey from Barcelona to Zurich in April had fares ranging from a special tourist fare of just under €100 to almost €500 for Gran Classe.

6 Daytime and modal alternatives

The daytime rail journey to Geneva is 8-11 hours, possible 4 times a day but only by connection. To Zurich it is around 12-13 hours, possible 3 times a day, via assorted connections. Notably travelling by Paris is almost as fast as the cross country route.

There is a Eurolines coach service three days a week, running overnight. It is 15.5 hours to Geneva and 20 hours to Zurich. In the reverse direction, it is about two hours longer.

There are typically three flights a day between Barcelona and Geneva, taking a little under 90 minutes; there are four flights a day to Zurich, taking 1 hour 45 minutes.

7 Border crossings

Although Switzerland is not part of the EU, border formalities are usually as for travelling entirely within the Schengen area. Thus, except under special circumstances, passports are not checked. On Elipsos, the usual practice is for the attendant to take the passport when the berth is first occupied, and to return it the following morning.

SLEEPERS UNCOUPLED



CASE STUDY 3 - SNCF INTERCITES DE NUIT

PARIS TO THE PYRENEES – AN EXAMPLE OF BRANCH LINE OPERATION

20 February 2012





SLEEPERS UNCOUPLED

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CONTENTS

1	Background.....	1
	Trends	1
2	Infrastructure and Access Arrangements	2
	Description of the route	2
	Infrastructure access	2
3	Train and traction details	4
4	Rolling stock quality, facilities and servicing	5
	Couchettes	5
	Catering	6
	Reclining seats	6
5	Timetabling, Pricing and Ticketing.....	7
	Timetabling	7
	Fares and Ticketing	9
6	Daytime and Modal Alternatives	11

TABLES

Table 5.1	Service Timetable	7
Table 6.1	Connections	11

FIGURES

Figure 4.1	Interior of First Class (4 Berth) Couchette	5
Figure 4.2	First Class Couchette Images.....	5
Figure 4.3	Six Berth Second Class Couchette.....	6
Figure 4.4	On Board Vending Machines	6
Figure 4.5	Reclining Seats	6

1 Background

For some years, SNCF has been reducing the quantity and quality of overnight services, both those within France (Lunea) and some run with partners (e.g. the Artesia joint venture with Trenitalia). No sleepers are now used for domestic traffic; only couchettes and coaches with reclining seats. Indeed, this service was threatened entirely in the autumn of 2006.

French overnight services also suffered from a number of robberies and even murder, which led to a loss of reputation, but security improvements, both on and off the train, have all but eliminated these issues.

SNCF has recently re-grouped almost all of its non-TGV Grand Lignes services into an Intercités group, although the branding is currently haphazard. Lunea is officially Intercités de Nuit, but the Lunea branding remains prominent on many elements of the various SNCF websites. We understand that all of these services are now subsidised by the state, but have not yet been tendered in accordance with EU rules; the French transport ministry has indicated this is planned in the future

Trends

Toulouse is the fifth largest city in France, with a population of over 1.1 million in the metropolitan area. At over 700km from Paris, it is the largest city still principally dependent on a classic main line, with journey times of around 6.5 hours. In addition, a small number of Paris-Bordeaux TGV trains that use the high speed line via Tours are extended to Toulouse, covering 825km in 5.5 hours.

As the primary base of the French aerospace industry, it may be that there has been less political pressure for a high speed rail connection. Between 0600-0900, there are no less than ten flights to Paris (i.e. better than half-hourly) taking less than 90 minutes.

Nevertheless, RFF has announced a target time of 3 hours for Paris-Toulouse, using the line currently under construction between Tours and Bordeaux (planned opening 2016) and a further line planned from Bordeaux to Toulouse (no opening date). A journey time of about 4.5 hours may be expected intermediately.

The introduction of a regular interval service on the branch to Latour-de-Carol-Enveitg has increased passenger numbers by 864% between 2002 and 2010 (source: RFF). The middle section of the branch still has manual signalling, the remainder is automatic block. There is no radio signal on the line. The general speed limit is 120-140km/h on the lower section and less than 100 km/h on the upper section.

Electrification is at 1500V dc on the classic line; although 25kV ac on high speed lines (LGV) results in a need for dual voltage TGV sets.

2 Infrastructure and Access Arrangements

Description of the route

This service travels over 700km of main line railway, before completing its journey on a 150km single track branch line that rises to over 1500m above sea level, the highest standard gauge line in France. It also includes a 5km long tunnel through the Pyrenees, and is electrified throughout at 1500V dc.

It has a 22.5 tonne/axle limit, the RFF standard for most main lines. However, the maximum gradient is 4.1% (about 1 in 25), partly reflecting that the final 40km were designed for electric traction when opened in 1929.

The area supports winter sports, but also offers the nearest railway station to Andorra.

Latour de Carol offers interchange for passengers to the narrow gauge SNCF line to Villefranche (Le Petit Train Jaune) and the broad gauge RENFE line to Barcelona. There are no gauge-changing facilities available.

The line was closed for three months during 2011 while a €31m renovation took place (a similar closure took place in 2009). This was funded in roughly equal portions by RFF, the Midi-Pyrénées Region and the national

government. The press release suggested that there were 5160 daily passengers on the line.

The introduction of a regular interval service on the branch has increased passenger numbers by 864% between 2002 and 2010 (source: RFF). However, some journeys are provided by bus.

The middle section of the branch still has manual signalling, the remainder is automatic block. There is no radio signal on the line. The general speed limit is 120-140km/h on the lower section and less than 100 km/h on the upper section.

The line beyond Andorre L'Hospitalet crosses a regional boundary from the Midi-Pyrénées region (which is very supportive of rail) into the Pyrénées-Orientales region, which is less so.

Infrastructure access

RFF publishes a Network Statement, broadly conforming to the standard format. It is available in English, although there are no signposts to find it on the website. (Indeed, searching in English for "Network Statement" yields but one result). To locate it, it is necessary to search for "Network Statement 2012" in the French section of the website, and

then wade through some 65 results to find the relevant sections of the statement.

The principles for charging include:

The principles chosen by the State are designed to enable recovery of:

- variable operating charges via the train running charge (RC);
- fixed charges via the access charges (RA) for TER, Transilien services and intercity trains partly financed by the state (TET);
- all or part of capital costs and fixed charges for activities not covered by agreements via the reservation charge (RR).

The charges raised:

- entitle railway undertakings to network access on a non-discriminatory transparent basis;
- make allowance, in particular, for the costs of the infrastructure, the situation on the transport market and the characteristics of supply and demand, the need to optimise use of the national rail network and guarantee level playing fields among modes.

Minimum services are covered by three charges designed to recoup various types of cost, in full or in part:

- variable operating and maintenance costs, mainly from the operating charge;
- capital costs from the booking charge;
- fixed costs from the access charge raised for TER (Regional) and Transilien (Greater Paris) trains.

At all events, the charges payable in relation to a particular category of train are designed to cover at least the direct cost of train movements.

A further section is of particular relevance to this line, as there is a Rail Plan in force:

6.1.3 Specific provisions in relation to rail plans. In accordance with Article 10 of Decree No 97-446 of 5 May 1997 mentioned above, special charging arrangements have been introduced on railway lines enjoying investment as part of the "Rail Plans" agreed between the Regions, the State and Réseau Ferré de France. The criteria to be fulfilled by basic sections to be eligible for the "Rail Plan rates clause" are the following:

- the investment in renewal operations considered does not fall under the central-regional government project contracts (CPR);
- the investment in renewal operations concerns a substantial part of the regional network of lines in rate categories D and E;

- the amount contributed by the region per linear metre of works is at least 200K€/km;
- the proportion funded by RFF is no more than one-third of the renewal investment concerned by the Rail Plan;
- the regional organising authority has undertaken to boost regional passenger traffic over the investment depreciation period.

Basic sections D-pr and E-pr fulfilling these conditions are entitled to a reduction in the reservation charge.

Lines are divided up into nine categories of classification reflecting the traffic on them, plus a further four categories for high speed lines (defined as over 220 km/h). In addition, the day is divided into 11 segments, chargeable to one of four time categories. The relevant categories here are:

- The classic main line between Paris and Toulouse Category C
- Portet-St-Simon* - Ax (123km) Category Dpr
- Ax – Latour de Carol (40km) Category Epr
**junction with main line*

Headline figures for marginal train kilometres on conventional lines vary from €0.33 to €7.373. However, on the lines with Rail Plan discounts, the figures are reduced and range only from €0.05 to €0.15. The figures for high speed lines are between €1.167 and €21.449. However, to this has to be added running

charges of €2.209 on conventional lines, except on line categories E and Epr where it is reduced by 40%. The IBM report "Rail Liberalisation Index 2011" quotes figures of about €2.50 per train km for short distance passenger trains and €7.50 for long distance ones, though as France uses all possible means to restrict services only to those provided by SNCF, it is to some extent academic.

Management of stations remains with SNCF, though in a separate Gares & Connexions division.

(Elsewhere this has been likened to an early version of Railtrack, with its focus upon adding retail units to station properties).

3 Train and traction details

This train is hauled throughout by SNCF electric locomotives. Locomotives and rolling stock are directly owned by SNCF.

The service to Latour de Carol-Enveitg operates as a portion of a Paris-Cerbere/Portbou service, detached at Toulouse. On Fridays, the train detaches another portion to Luchon (also at Toulouse), which returns on a Saturday evening.

We have evidence of overnight stock standing at Toulouse, but have been unable to confirm if these are spare vehicles, or whether this is the nominal Luchon portion on days that it does not operate.

On leaving Paris, the train will have up to 16 coaches, approximately 75-80% of which are couchettes. The Latour portion generally comprises three couchettes and one carriage with reclining seats. Photographs mostly show the Luchon portion as 3 coaches, which is consistent with our information that the Portbou portion is usually 8-10 coaches.

All shunting is undertaken by the train engines.

4 Rolling stock quality, facilities and servicing

As with all internal French overnight services, accommodation is couchettes and day carriages with reclining seats. This has been refurbished, but is understood to have been built in the 1970s-1980s, (1975-89), mostly 1975 & 1984.

Couchettes

Virtual tours of first and second class couchettes can be seen at:

- http://lunea.voyages-sncf.com/lunea/visite-virtuelle/1ere_classe?rfr=homeLunea_bod_y_1ereclasse
- http://lunea.voyages-sncf.com/lunea/visite-virtuelle/2nde_classe?rfr=homeLunea_bod_y_2ndeclasse

First class couchettes contain four berths; second class contain six. First class berths are generally reckoned to be slightly wider. Beds foldaway to give access to six seats in each compartment.

Facilities are fairly basic – reading lights, a net, and on request, nets and extra strapping for children. Each berth includes a quilt, a pillow and a small bottle of water. A box is placed on each bed containing refreshing wipes, ear

plugs, a pack of tissues and mints. Toilets and separate washrooms are available at each end of the carriage. SNCF suggests that passengers wanting showers use the public facilities at Paris Austerlitz and Toulouse-Matabiau.

Figure 4.1 Interior of First Class (4 Berth) Couchette



Courtesy of Mark Smith www.Seat61.com

Figure 4.2 First Class Couchette Images



SNCF website

Wake up calls are available from the sleeping car attendant

Websites with descriptions of the onboard service:

<http://www.snowcarbon.co.uk/train->

Figure 4.3 Six Berth Second Class Couchette



Courtesy of Mark Smith www.seat61.com

Catering

A limited range of refreshments is available from vending machines. Located at one end of the carriage. These can be seen in the virtual tour listed below:

➤ http://lunea.voyages-sncf.com/lunea/visite-virtuelle/distributeurs?rfr=homeLunea_body_services

Figure 4.4 On Board Vending Machines



SNCF website

We understand that in an experiment during summer 2011, breakfast boxes were sold on the platform prior to departing Paris, but we have been unable to establish if this is still current practice.

Reclining seats

These recline to 45°. They have adjustable headrests and footrests.

Figure 4.5 Reclining Seats



SNCF website

5 Timetabling, Pricing and Ticketing

Timetabling

This service is a portion of a train which divides and joins at Toulouse, although it is not advertised for Paris-Toulouse journeys. The other portion of the train continues via Narbonne and Perpignan to the Spanish border at Cerbere/Portbou. Although this is a fairly indirect routing from Paris, it enables “civilised” arrival times between 0630 and 0800. On Fridays, a third portion is detached at Toulouse for Luchon.

Table 5.1 Service Timetable

The tables overleaf also show the service from Paris that serves Toulouse. This conveys a portion (train 3757) to Rodez (extended to Albi on some nights) detached en route.

Train No.	3971	3731	3991 (Fri)	3753
Paris-Austerlitz	21h53	21h53	21h53	22h53
Les Aubrais-Orléans	22h55	22h55	22h55	23h51
Vierzon	23h38	23h38	23h38	-
Limoges-Bénédictins	01h11	01h11	01h11	-
Toulouse-Matabiau	Not advertised - about 0430			06h42
Auterive	05h23	-	-	
Saverdun	05h34	-	-	
Pamiers	05h47	-	-	
Foix	06h00	-	-	
Tarascon-sur-Ariège	06h15	-	-	
Les Cabannes	06h26	-	-	
Luzenac-Garanou	06h34	-	-	
Ax-les-Thermes	06h48	-	-	
Mérens-les-Vals	07h04	-	-	
Andorre-L'Hospitalet	07h21	-	-	
Porte-Puvmorens	07h33	-	-	
Latour-de-Carol-Enveitg	07h51	-	-	
Castelnaudary	-	05h12	-	
Carcassonne	-	05h31	-	
Lézignan-Corbières	-	05h54	-	
Narbonne	-	06h10	-	
Perpignan	-	07h13	-	
Elne	-	07h26	-	
Arzelès-sur-Mer	-	07h35	-	
Collioure	-	07h42	-	
Port-Vendres	-	07h47	-	
Banyuls-sur-Mer	-	07h54	-	
Cerbère	-	08h02	-	
Port-Bou	-	08h11	-	
Muret	-	-	05h43	
Carbonne	-	-	05h56	
Boussens	-	-	06h10	
St-Gaudens	-	-	06h25	
Montréjeau-Gourdan-Pol.	-	-	06h38	
Loures-Barbazan	-	-	07h09	
Saléchan-Siradan	-	-	07h20	
Marianac-St-Béat	-	-	07h30	
Luchon	-	-	08h02	

Train No.	3752	3970	3730	3990	Sat
Luchon				22h10	
Mariagnac-St-Béat				22h36	
Saléchan-Siradan				22h46	
Loures-Barbazan				22h56	
Montréjeau-Gourdan-Pol.				23h08	
St-Gaudens				23h37	
Boussens				23h53	
Carbonne				00h06	
Muret				00h19	
Cerbère			21h28	-	
Banyuls-sur-Mer			21h35	-	
Port-Vendres			21h42	-	
Collioure			21h48	-	
Araèlès-sur-Mer			21h55	-	
Elne			22h04	-	
Perpignan			22h16	-	
Narbonne			22h56	-	
Lézignan-Corbières			23h29	-	
Carcassonne			23h51	-	
Castelnaudary			00h13	-	
Latour de Carol-Enveja		20h20	-	-	
Porte-Puymorens		20h39	-	-	
L'Hospitalet-près-l'Andorre		20h50	-	-	
Merens les Vals		21h06	-	-	
Ax-les-Thermes		21h21	-	-	
Les Cabannes		21h45	-	-	
Tarascon-sur-Ariege		21h57	-	-	
Foix		22h13	-	-	
Pamiers		22h30	-	-	
Saverdun		22h41	-	-	
Auterive		22h53			
Toulouse-Matabiau		23h13	00h47	00h50	
Toulouse-Matabiau	22h34	01h02	01h02	01h02	
Vierzon	-	05h38	05h38	05h38	
Les Aubrais-Orléans	05h35	06h15	06h15	06h15	
Paris-Austerlitz	06h52	07h22	07h22	07h22	

A full timetable for the branch line can be found at:

➤ [http://telechargement.ter-sncf.com/Images/Midi_Pyrenees/Tridion/FH_22_TOULOUSE_FOIX_LATOUR_DE_CAROL_\(horaires_2012,_hors_travaux\)_tcm-25-17750.pdf](http://telechargement.ter-sncf.com/Images/Midi_Pyrenees/Tridion/FH_22_TOULOUSE_FOIX_LATOUR_DE_CAROL_(horaires_2012,_hors_travaux)_tcm-25-17750.pdf)

Toulouse itself is served in both directions by a separate train which leaves Paris one hour later and from Toulouse 2.5 hours earlier.

Fares and Ticketing

Bookings for the service can be made up to 90 days in advance although another source suggests a 60 day time horizon, which website trials confirmed.

The SNCF website is essentially for domestic use only. SNCF has a complex, network of websites for international distribution. www.voyages-sncf.com is in French only, for domestic use, but www.tgv-europe.com is in English and several other European languages, for European and worldwide use, although it has various automatic or prompted redirects to SNCF's three overseas subsidiaries, Rail Europe Ltd in the UK, Rail Europe Inc serving North America, and Rail Europe 4A serving Australasia, Asia, Africa and

South America (hence '4A'). Rail Europe Ltd charges the same prices as SNCF's own websites, Rail Europe Inc and 4A sometimes suppress the cheapest fare levels for the overseas market. Except for the UK version, these sites seem to have a poor reputation.

Fares for a theoretical single journey in late March 2012 booked via www.rail-europe.co.uk were:

- Reclining seat £34
- Six berth couchette £32.50
- Four berth couchette £55.50

The booking system offers ladies-only couchettes, or for an increased fee, reduced occupation of a compartment (up to a premium of €70 for single occupancy of a first class couchette).

All fares appear to be €3 cheaper if booked on the internet. Pricing is variable, and on some occasions, the cost of a first class berth can be double that of a second class one. At other times, the difference is less marked. Bizarrely, passengers travelling on the later sleeper from Paris and changing at Toulouse are consistently charged a much higher fare, despite arriving four hours later.

The SNCF booking system (also used by Rail Europe) can be frustrating, as it continues to offer all fares options, even after some have sold out. Some sample prices for a single journey are second class couchette in two weeks' time €142; reclining seat in one

month's time €17; first class couchette in two months' time €67.


Tickets may be collected from ticket machines at stations in France and Luxembourg, from SNCF shops, or posted free of charge. Tickets ordered in the UK through RailEurope can also be collected from stations, but there is a fee if they are posted.

SNCF continues to offer a door to door luggage service, entitled "Bagages à domicile". This requires a minimum of 24 hours notice, and can be delivered within various time slots, but only on Mondays to Fridays (0800-1300, 1300-1700, 1700-1900 (€10 supplement) or by appointment (€15 supplement).

Reservations are taken 0800-1200/1300-1700 Mon-Fri and 0800-1200 Sats.

Charges are €33 for the first piece of baggage, reduced charges for further items except for specific rates for wheelchairs, bicycles, and bulky baggage. Skiing equipment is particularly highlighted as benefitting from this service.

More details are available at:

 http://www.voyages-sncf.com/tgv/services_tgv/bagages-domicile/

Our view is that the price of this service may not fully cover its costs, as it almost certainly relies on SNCF-owned Geodis to perform the collection and delivery.

Passengers may take bicycles with them on payment of a reservation fee only, but this cannot be done on the internet. However, the Latour-de-Carol-Enveitg portion of the train does not obviously include separate luggage space within its formation.

6 Daytime and Modal Alternatives

The tables below show connections on a typical weekday.

Table 6.1 Connections

Paris	0753	0945	1207	1229
Latour-de-Carol-Enveitg	1752	1952	2131	2152
Change at:	Toulouse	Toulouse	Montpellier, Perpignan, Villefranche	Toulouse

Latour-de-Carol-Enveitg	0521	0721	0903	1321
Paris	1633	1934	2033	2233
Change at:	Toulouse	Toulouse for 1907 by changing again at Brive-la-Galliard	Bus to Ax-les-Thermes Toulouse;	Toulouse

There are almost no long distance coaches providing domestic services in France, although a more liberal approach is very slowly coming into place.

As noted in section 1 (Trends), Paris-Toulouse is a well-served air route. Toulouse airport is linked to Matabiau station (in the city centre) by a bus running every 20 minutes on a journey of 20-40 minutes, depending on the time of day.

SLEEPERS UNCOUPLED

CASE STUDY 4 - VEOLIA IN SWEDEN

AN OPEN ACCESS EXAMPLE

20 February 2012





SLEEPERS UNCOUPLED

CASE STUDY 4 - VEOLIA IN SWEDEN

AN OPEN ACCESS EXAMPLE

20February 2012

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CONTENTS

1	Background.....	1
	Trends	1
2	Infrastructure and Access Arrangements	2
3	Train and traction details	3
4	Rolling stock quality, facilities and servicing	4
	Catering	4
	Servicing.....	5
5	Timetabling, Pricing and Ticketing.....	6
6	Daytime and Modal Alternatives	7
	Malmo-Stockholm	7
	Stockholm/Sundsvall-Storlien.....	7

FIGURES

	Figure 4.1 Carriage Layout	4
	Figure 4.2 Couchettes in Day and Night Mode	4

(All images and illustrations from Veolia Sweden website)

1 Background

Sweden was an early pioneer of the separation of trains and track, setting up infrastructure authority Banverket in 1988. State operations were broken up in 2001, including a hiving off of station and maintenance facilities to third parties. A residual body, Statens Järnvägar (Swedish State Railways) retains various activities, including certain rolling stock for leasing.

Subsequent developments have included the tendering of socially-necessary services and the introduction of open access operations, while in 2010, Banverket was subsumed into the pan-modal Trafikverket, usually translated as the Swedish Transport Administration, covering roads, rail, sea and air traffic.

Overnight services are known to have been tendered at least twice, with Veolia winning in 2003, then losing them back to state-owned operator SJ in 2008. Sweden has gradually opened up different sectors of the passenger market, and Veolia now provides both inter city day and night services. In some cases, these are now competing with trains subsidised by the public sector.

A Veolia press release states that in 2011, there were approximately 300,000 passengers

using Veolia Transport's long-distance trains (both day and night), which is an increase of over 60% from a year earlier. Customer satisfaction, as reported by Veolia, stands at 90%.

In autumn 2011, SJ announced its intention to withdraw from the seasonal Malmö-Berlin service. An SJ press release attributes this in part to the fact that “the fees for infrastructure and electricity is much higher in Germany than in Sweden and adds significant costs on this line”. Veolia will take over the Swedish end of this operation in March 2012. It is understood that the sleeping carriages on this service may consist of only couchette's ie no sleepers.

Trends

A government report shows that the number of passengers using overnight services in Sweden has fallen from 678,000 pa in 2001 to 526,000 pa in 2009. A month-by-month breakdown of figures for 2009 shows a minimum of 30,000 passengers each month; a spike of over 50,000 in each of July and August; and over 40,000 in April.

Reasons for using the service are given as:

➤ Visiting family / friend 40%

➤ Entertainment / Leisure	15%
➤ Travel to work	14%
➤ School / training	9%
➤ Workplace	7%
➤ Tourist destination	5%
➤ Shopping / purchasing / service	2%
➤ To / from military service	3%
➤ Healthcare	1%
➤ Culture	1%
➤ Any other business	4%

In January 2012, Veolia commenced a further weekend operation to the ski region of Vemdalen, around 500km northwest of Stockholm. This is an overnight train from Malmö and Gothenburg, operating under the “Snötåget” (“Snowtrain”) name, travelling on the Inlandbanan route, which normally only has tourist trains in summer. Press reports are not wholly clear, but this may be an operation chartered by the tourist authorities in Vemdalen, as it does not appear in the timetable.

Veolia's presence in the Malmö area has recently been strengthened, as they took over the contract for the Oresund link trains to Copenhagen in December 2011.

2 Infrastructure and Access Arrangements

Trafikverket publishes an annual Network Statement setting out access arrangements, complying with EU Directives. An English language version is at:

➤ <http://www.trafikverket.se/Om-Trafikverket/Andra-sprak/English-Engelska/Railway-and-Road/Network-Statement1/Network-Statement-2012/>

The basis for marginal cost charging is given as:

“Marginal-cost-based charges

According to the Railway Act, all railway undertakings that use the infrastructure must pay a charge which corresponds to the cost incurred as a direct consequence of the movement of rail vehicles. As far as the railway is concerned, under Swedish transport policy the traffic is subject to charges that correspond to the short-term socio-economic marginal cost.

The short-term marginal cost is the added cost arising from a further unit's production of a product or service, if the input of one or more production factors remains unchanged. In this context, this means the increase in the total socioeconomic cost that is caused by an additional train when the capacity and

configuration of the infrastructure remain unchanged.

The socio-economic costs are taken to include such costs as are incurred by others other than the railway undertaking and the traffic organiser. Among others, these costs include the costs of maintaining the infrastructure and keeping it open for traffic, and such costs as are incurred by society at large, for example in the form of emissions to the air from diesel-powered traffic, noise from traffic and the increased risk of accidents arising from additional traffic.

The marginal-cost-based charges also include the extra charges that may be levied for the use of congested infrastructure.”

Marginal charges for passenger services are at three different levels, for high, medium and low traffic routes. The 2011 charges were SEK1.70/0.40/0.20 per train kilometre, but in addition there is a charge of SEK0.009 per gross tonne kilometre. The division of routes into these three categories are shown on a map on page 4 of this document:

➤ http://www.trafikverket.se/PageFiles/48577/annex_6_1_train_path_and_passage_charges.pdf

As noted in the statement, there is an emissions charge for diesel traction, while new diesel services are not permitted on some routes to comply with Swedish environmental laws.

Stations and depots are operated by a now-separate property company, Jernhusen. Banverket retains ownership of platforms, but other than at the most minor halts, not the facilities on them. The services offered can be found at <http://www.jernhusen.se/> although most of the site is in Swedish only.

3 Train and traction details

Trains are electrically hauled throughout, by locomotives chartered from Hector Rail, an open access operator. A five year agreement was signed in May 2011, continuing a relationship dating back to 2007.

At one stage, Veolia had leased Rc6 3600kW Bo-Bo electric locomotives, built for SJ in 1982-83, from the state residual body SSRT (nominally Swedish State Railway Trains, but officially standing for nothing). These seem to have been for the now-lost contracted services. Of the 14 locos available, Veolia leased 11. We believe this is no longer the case, as Veolia trains are now usually hauled only by Hector Rail's own electric locomotives.

Similarly, 20 couchettes originally built for SJ in 1985-86 and refurbished in 2005-06 (type BC4) carriages were leased from SSRT for contracted services. For its open market operations, Veolia has acquired nine older BC2 type couchettes built between 1971-85, and refurbished in 2009.

SSRT also has 5 first class sleepers (type WL4) with en-suite WCs built in 1990-92 and also refurbished in 2005-06; and 20 second-class WL6 sleepers, built in 1993-94 and refurbished in 2007-08. We believe that some

of these will be leased by Veolia for the operation of the Berlin service. SSRT also has other coaches, including some with catering facilities.

The Malmo-Stockholm-Storlien service uses only couchettes and seated carriages. The contracted Stockholm to the far north service uses sleepers, couchettes and seated carriages.

We have not been able to establish whether the train has a fixed formation, but it would seem to consist of anything between four and eight coaches, half of which are couchettes, plus a catering car.

For comparison purposes, in winter the SJ contracted train to the far north, Narvik and Lulea, consists of:

- **Narvik portion:** sleeper, couchette, second open, Bistro car
- **Lulea portion:** second open, couchette, sleeper, sleeper, couchette

It is understood to be longer in summer.

4 Rolling stock quality, facilities and servicing

As noted above, the BC2 couchettes used by Veolia have been refurbished, and now include (as do day carriages) power points and free wifi. These are offered only on the newest SJ stock.

Veolia do not offer first class couchettes, only second class with six berths. There is a toilet at each end of the carriage, but the former separate washrooms have been converted to ski racks.

Figure 4.1 Carriage Layout



Platsnumret för gångplats och understa bädden är samma.
Platsnumret för fönsterplats och översta bädden är samma.

©
A&F&M
5/2 2009

Couchette berths are supplied with a sleeping bag, blanket, pillow with pillow case and towel. Compartments are lockable.

Figure 4.2 Couchettes in Day and Night Mode



Further pictures and plans (including SJ carriages) can be found at:

<http://www.jarnvag.net/index.php/vagnguide/personvagnar-i-trafik/bc2>

while a virtual tour of an SJ couchette is available at

http://www.actionfiction.se/clients/sj/BC2_BC4_6PERSON/

Catering

Catering is available from a restaurant car. There would appear to be only one in the fleet, rebuilt after purchase from Norwegian Railways in 2006. The offering includes hot food, sandwiches, pastries, hot and cold drinks, beer, wine and spirits. These are served on real crockery; Veolia states this saves the environment from the waste created by disposable products. Breakfast on board is cheaper if ordered in advance (SEK49 v SEK60).

Menu (in Swedish) <http://www.veolia-transport.se/uploadConnex/Sweden/Malmö%20Syd-Stockholm/Meny%20Kiosk%20P1%2020110718.pdf>

A luggage car is available for bulky items; fees are charged for its use. This is a former postal car, originally built in 1946-57 – there is a picture of it at;



<http://www.jarnvag.net/index.php/vagnguide/personvagnar-i-trafik/d46> .

Veolia has made a YouTube video of the service:



<http://www.youtube.com/watch?v=4HziJnzokZs&feature=youtu.be>. This shows most customers to be at the younger end of the market.

The Swedish website www.nattag.se (Night Trains) suggests that the sleeping cars used on the Berlin Night Express have en-suite showers and WCs, as does SJ sleeping car stock. As noted above, we believe these to be SSRT-owned WL4/WL5 sleepers. It also states that the Veolia overnight trains offer a DVD disc-and-player rental service; if so, it is not clearly advertised on Veolia's website.

Servicing

Veolia currently operate tendered local services at the northern end of the route, but have lost these to Norrtåg from summer 2012. This may have implications for how servicing of the trains can take place when it recommences next winter.

One source suggests that servicing is carried out by Sodexo (there is a picture of staff carrying pillows on to a train during a station stop). This may mean that the outsourcing of this operation does not require special facilities away from the home depot, and can take advantage of arrangements that may be in place e.g. to service hotels.

Pictures of this amongst others are in this link:

 <http://www.jarnvagsframjandet.se/artiklar/080813-operatorbyte.html>

Another source suggests catering and cleaning is handled by ISS, a Danish-based international facilities management company.

5 Timetabling, Pricing and Ticketing

Veolia first ran weekend ski trains in January 2007, as soon as the market had been open up. The current version, still aimed at the winter ski market, runs twice a week during the winter season (December-April). This is northbound on Wednesdays and Saturdays, and southbound on Thursdays and Sundays. The SJ state-supported service over the same route runs on the same days, but there is also a more frequent service to Gothenburg (see timetable for days and dates of operation).

These are all shown in a free national timetable book (300 pages of A5) that is published for all train services by Samtrafik. This is a not-for-profit co-ordination company owned by 33 different service providers. All operations are treated equally.

All timetables can also be found on the website <http://tidtabell.resplus.se> in PDF format. Both Veolia and SJ night trains to Storlien (the border station on the line to Trondheim in Norway) are shown here:

http://tidtabell.resplus.se/tidtabell/20_tag20.pdf

while the complete service to Storlien can be found here:

http://tidtabell.resplus.se/tidtabell/42_tag42.pdf

As with much of northern Sweden, lines are single track with passing loops. The Stockholm-Malmö service is at:

http://tidtabell.resplus.se/tidtabell/80_tag80.pdf

A map of the Swedish rail network is on page 5 of swedenbytrain_dec11.pdf

Samtrafik also sells tickets for all modes, enabling through journeys on one ticket. This includes the operation of automated ticket machines, which will usually offer all modes for the journey selected (e.g. Uppsala-Stockholm by SJ InterCity, Veolia, or Swebus coach).

Further details are provided at;

<http://resplus.se/Resplus/Flersprak/English/Om-Resplus/>

We understand that the Veolia booking system uses the Resplus system, though accessed via their own website or via www.bokatag.se. As a result, it does not deal exclusively with Veolia trains, unless boxes are ticked to do so. (Similarly, the SJ website

offers an option of SJ-only). It will only accept Nordic credit cards.

A six berth couchette can be booked for exclusive use at a rate roughly equivalent to four times the fare for one person. Compartments may be mixed or segregated, and booking engines offer a choice of lower, middle or upper berth.

Veolia fares appear to be about 60-70% of SJ fare levels. Veolia's website page promoting this service is at http://www.veolia-transport.se/tmpl/XStartPage_33751.aspx?epslanguage=EN.

(NB the linked English language timetable contains several errors).

6 Daytime and Modal Alternatives

Malmö-Stockholm

SJ offer overnight services on this corridor on Sundays to Fridays. These offer sleeping cars, couchettes and second class day carriages. Timings are Malmö-Stockholm 2238-0630; Stockholm-Malmö 2223-0617.

On Mondays to Fridays, SJ provide a two-hourly service between the cities, taking just over 4.5 hours. There are extra trains on the opposite hour at certain times, and also at the weekends. Five trains are extended from/to Copenhagen.

First class high speed and double-deck trains offer wifi, free to first class passengers, but has to be paid for by second class passengers.

Veolia trains take around 5.25 hours for the same journey. There are two weekday trains and an extra on Fridays. All trains offer free wifi and power points.

Swebus Express coaches offer one daytime and one nighttime service, taking about 8.25 hours. These are extended from/to Copenhagen. A further service links Malmö to Stockholm by a less direct route, taking 10.5 hours. Additional services operate over parts of the route.

Swebus coaches offer free wifi and laptop charging points.

There are typically 12 flights on weekdays between Malmö-Stockholm, with a flight time of 75 minutes. The number is halved at weekends.

SJ offers some combined ticketing with SAS airlines. See;

➤ http://www.flyrail.se/?siteLanguage=en_GB
and

➤ <http://www.flyrail.se/editorial/ticket>

The full rail timetable can be found here:

➤ http://tidtabell.resplus.se/tidtabell/80_tag80.pdf

An explanation of notes in English is at:

➤ <http://resplus.se/Global/Avd%20Produktion/Information%20om%20tidtabeller/Teckenf%c3%b6rklaring.pdf>

Stockholm/Sundsvall-Storlien

SJ also offer night services on this corridor. The train includes sleeping cars, couchettes, second class day carriages and a restaurant car. This operates more or less daily, though

there are different departure times on some days in some seasons.

➤ Gothenburg-Stockholm-Storlien (1900-2320-0815 or 1652-2105-0849)

➤ Storlien-Stockholm-Gothenburg (1950-0630-1122 or 2042-0601-1047)

➤ Malmö-Stockholm-Storlien (1800-0025 or 0055-0854 or 0954)

➤ Storlien-Stockholm-Malmö (1708-0120-0808)

There is a coach service between Stockholm-Sundsvall provided by Y-Buss, with a journey time of about five hours. Four daytime journeys are complemented by a late night departure (northbound) and an overnight departure (southbound).

There are about five flights a day between Stockholm and Ostersund, with a flight time of one hour.

The full rail timetable can be found here:

➤ http://tidtabell.resplus.se/tidtabell/42_tag42.pdf

Timetable notes in English can be found here:

➤ <http://resplus.se/Global/Avd%20Produktion/Information%20om%20tidtabeller/Teckenf%c3%b6rklaring.pdf>

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CASE STUDY 5 SEASONAL SERVICES - CITY NIGHT LINE

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CONTENTS

1	Background.....	1
2	Binz – Zurich: extension from Berlin .	2
	Timetable.....	2
	Train formation	2
3	Amsterdam and Hamburg-Zurich: extended to Brig.....	3
	Timetables	3
	Train formation	4
4	Paris - Munich extended to Innsbruck	5
	Timetable.....	5
	Train formation	5

TABLES

Table 2.1	Timetable	2
Table 2.2	Train Formation.....	2
Table 3.1	Amsterdam Portion	3
Table 3.2	Hamburg Portion	4
Table 3.3	Combined Train.....	4
Table 3.4	Train Formation.....	4
Table 4.1	Timetable	5
Table 4.2	Train Formation.....	5

1 Background

Seasonal overnight services tend to divide into two main markets, aimed at winter skiers and summer coastal holidaymakers. However, as most train operators seek to maximise revenue from their assets, the number of purely seasonal services is reducing. Even the network of Autozug overnight motorail trains now serves the same destinations all year.

In some cases, open access operators have been able to acquire older rolling stock and fulfil this role at lesser cost, sometimes as a charter train operation, such as “Go-Snow” trains from Belgium to the Alps on a handful of days each year, or the new Veolia “Snowtrain” operation from Gothenburg to Vemdalen.

CityNightLine has managed to blend the operation of all-year-round trains with selective seasonal extensions of existing services, rather than separate services. These are able to operate at marginal cost, merely eating into the time that rolling stock would normally be stationary.

In this report we show details of three trains in the CNL network, which have weekend extensions at certain times of the year.

2 Binz – Zurich: extension from Berlin

Binz, a resort on the Baltic coast, is a terminus station on a short branch line off the Stalsrund-Sassnitz route, around 300km north of Berlin. It receives intercity trains roughly every two hours, one from the Hamburg direction and the other from the Berlin direction. Local trains operate hourly to the branch junction, with alternate trains extended to Stalsrund.

This service operates on Saturdays during July and August, terminating at Berlin on other days. Ordinary journey time from Berlin is in the range of 4-4.5 hours, with three departures every two hours (two by connection), so the through service represents a time saving of 30-60 minutes (plus more while waiting for connections).

As noted, Binz is a terminus for some inter city trains, so servicing of this train can take advantage of existing arrangements.

Timetable

Outbound journey - 1258/1250 Sirius. Inbound journey - 1259/1251

Table 2.1 Timetable

Red section = seasonal extension

18:23:00	Ostseebad Binz	11:17:00
18:44:00	Bergen auf Rügen	10:43:00
19:24:00	Greifswald	10:02:00
19:37:00	Züssow	09:49:00
21:47:00	Berlin (Lichtenberg)	07:49:00
22:07:00	Berlin (Gesundbrunnen)	07:27:00
22:15:00	Berlin (Hbf)	07:19:00
22:21:00	Berlin (Südkreuz)	07:12:00
22:56:00	Lutherstadt Wittenberg	06:35:00
23:14:00	Bitterfeld	06:18:00
23:35:00	Halle (Saale) Hbf	05:58:00
00:07:00	Naumburg (Saale) Hbf	05:25:00
00:34:00	Weimar	04:59:00
01:21:00	Erfurt (Hbf)	04:07:00
03:59:00	Frankfurt (Main) (Süd)	00:54:00
04:43:00	Mannheim (Hbf)	23:59:00
04:58:00	Heidelberg (Hbf)	23:33:00
05:40:00	Karlsruhe (Hbf)	23:04:00
06:20:00	Offenburg	22:30:00
06:53:00	Freiburg (Brsg) Hbf	21:58:00
07:46:00	Basel (Bad Bf)	21:21:00
07:55:00	Basel (SBB)	21:12:00
08:58:00	Baden	19:58:00
09:17:00	Zurich (HB)	19:42:00

Train formation

Between Zurich and Basel SBB, the train is hauled by an SBB electric locomotive, and then on by a DB electric locomotive. The train reverses at Berlin-Lichtenberg.

Table 2.2 Train Formation

Carriage No.	Description	Notes
272	Recliner 2	
273	Recliner 2	
275	Couchette 2 + disabled	
276	2 + Bike	
277	Couchette 2	
278	DD sleeper 1/2	
279	DD sleeper 1/2	
280	Restaurant	
8	Day coach 2	Erfurt-Binz
9	Day coach 2	Erfurt-Binz

Between Zurich and Erfurt, the service runs as part of “Canopus.”

3 Amsterdam and Hamburg-Zurich: extended to Brig

This train extends into the heart of the mountains, with Brig being the railhead for resorts around the Matterhorn and giving easy connections to much of southern Switzerland.

Journey times from Zurich to Brig are a little over 2 hours (hourly) or almost 2.5 hours by connection (also hourly). As Zurich Hauptbahnhof is a terminal station, the train has to reverse here, which extends the layover. Indeed, the Swiss regular interval timetable does not leave many paths available for additional trains, and we estimate it remains at Zurich for 40 minutes towards Brig, and for an hour on return. Indeed, an earlier arrival of 1111 is possible by changing in Zurich.

As well as SBB infrastructure, this train use the BLS line between Bern/Thun and Brig. BLS infrastructure has been separated to form a stand alone company, (BLS Netz AG) though timetabling is undertaken jointly with SBB. A Network-Statement is issued, available in English at:

<http://www.bls.ch/e/infrastruktur/trassen-statement2012.pdf>

The principles of charging are established in Swiss law, and in general conform to those of SBB, as described in Case Study 2 of the Elipsos service.

Timetables

The timetables are set out in the following sequence of tables 3.1 to 3.3 showing each portion of the service (Red section = seasonal extension).

Amsterdam – Zurich / Brig

Outbound journey - 40419 Pegasus. Inbound journey - 40478

Hamburg – Zurich / Brig

Outbound journey - 479 Komet. Inbound journey - 478

This train combines at Mannheim.

Table 3.1 Amsterdam Portion

20:31:00	Amsterdam(CS)	08:56:00
20:59:00	Utrecht	08:28:00
21:37:00	Arnhem	07:45:00
22:17:00	Emmerich	07:13:00
22:57:00	Duisburg(Hbf)	06:25:00
23:13:00	Düsseldorf(Hbf)	06:09:00
23:46:00	Cologne(Hbf)	05:43:00
00:07:00	Bonn(Hbf)	05:20:00
00:41:00	Koblenz(Hbf)	04:46:00
01:56:00	Frankfurt(Main)(Flughafen)	03:39:00
02:33:00	Mannheim (unadvertised)	02:56

Table 3.2 Hamburg Portion

19:03:00	Hamburg(Altona)	08:50:00
19:11:00	Hamburg(Dammtor)	08:42:00
19:18:00	Hamburg(Hbf)	08:37:00
19:33:00	Hamburg(Harburg)	08:25:00
22:16:00	Hanover(Hbf)	06:30:00
23:32:00	Göttingen	05:39:00
03:10	Mannheim (unadvertised)	02:55:00

Table 3.3 Combined Train

04:04:00	Mannheim (unadvertised)	01:28
04:37:00	Karlsruhe(Hbf)	00:18:00
05:19:00	Offenburg	23:31:00
05:55:00	Freiburg(Brsg)(Hbf)	22:58:00
06:44:00	Basel(Bad Bf)	22:19:00
06:54:00	Basel(SBB)	22:07:00
07:59:00	Baden	21:00:00
08:34:00	Zurich(HB)	20:42:00
10:36:00	Thun	18:22:00
10:47:00	Spiez	18:09:00
10:59:00	Frutigen	17:53:00
11:16:00	Kandersteg	17:32:00
11:30:00	Goppenstein	17:17:00
11:56:00	Brig	16:53:00

Train formation

The train reverses at Zurich

Table 3.4 Train Formation

Carriage No.	Description	Notes
173	Reclining-seated 2	Amsterdam portion
174	Couchette 2	Amsterdam portion
175	Couchette 2 + disabled	Amsterdam portion
176	Bicycle 2	Amsterdam portion
177	Sleeper 1/2	Amsterdam portion
178	Sleeper 1/2	Amsterdam portion
288	DD Sleeper 1/2	
287	DD Sleeper 1/2	
286	Bicycle 2	
285	Couchette 2 + disabled	
283	Reclining-seated 2	
290	Restaurant	At other end of train in reverse direction

Rolling stock is from SBB, hauled by DB locomotives to Basel; SBB locomotives between Basel-Zurich and Zurich-Brig.

The Amsterdam portion is hauled by NS loco on the Dutch section (as part of another train).

4 Paris - Munich extended to Innsbruck

This train is also extended on Saturdays in the winter season from December to April, for skiing traffic in Austria.

This service is extended from Munich across the Bavarian Alps into Austria, to terminate at Innsbruck.

Curiously, through coaches are only advertised from Paris, whereas this train also conveys a larger Amsterdam portion. Other train formations suggest that nine coaches is the maximum on this steeply graded route, but as far as can be ascertained, this train is not combined with any other on the Munich-Innsbruck section.

DB Autozug also runs trains to Innsbruck, so servicing facilities are well-established.

Munich-Innsbruck is served by through Eurocity trains every 2 hours, taking two hours. The CityNightLine train would appear to run on a similar timing on the opposite hour to scheduled services. The journey can also be made by local services every hour, changing en route and taking almost three hours.

Timetable

Outbound journey 40418 Cassiopeia Inbound journey 40451.

Red section = seasonal extension.

Table 4.1 Timetable

09:24:00	Paris (Est)	20:05:00
06:15:00	Metz	23:17:00
04:56:00	Saarbrücken (Hbf)	00:58:00
01:35:00	Stuttgart (Hbf)	04:17:00
01:02:00	Plochingen	04:49:00
00:48:00	Göppingen	05:02:00
00:34:00	Geislingen (Steige)	05:17:00
00:10:00	Ulm (Hbf)	05:42:00
23:53:00	Günzburg	05:59:00
23:20:00	Augsburg (Hbf)	06:33:00
22:47:00	Munich (Hbf)	07:10:00
20:59:00	Kufstein	09:30:00
20:48:00	Wörgl (Hbf)	09:41:00
20:21:00	Jenbach	10:01:00
19:54:00	Innsbruck (Hbf)	10:36:00

Train formation

The following table only shows the portion continuing south of Munich. This train reverses at Stuttgart and Munich.

DB locomotives and rolling stock are used, (SNCF locomotive on the French section).

- Additional sleeping coaches are provided between Munich-Amsterdam (detached at Mannheim);
- Day coaches between Munich-Stuttgart; and
- Sleeper coaches between Hannover-Paris (originating from Hamburg and Berlin)

Table 4.2 Train Formation

Carriage No.	Description	Notes
116	Sleeper 1/2	
117	Couchette 2 + wheelchair	
118	Couchette 2	
119	Seats 2 + bicycle	

Contents Amendments Record

This document has been issued and amended as follows:

Status/Revision	Revision description	Issue Number	Approved By	Date
Draft		1	APB	07/02/2012
Final		2	APB	20/02/2012