IARO report 2.00

Workshop, Milan 12/14 April 2000.

Stress-free journeys -

$\Rightarrow$ how to cope with baggage

$\Rightarrow$ how to cope with interchange

The role of rail in air cargo

IARO Report 2.00: Workshop Milan 12/14 April 2000.

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*Our mission is to spread world class best practice and good practical ideas
among airport rail links world-wide.*

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Introduction

This report summarises the output of the second workshop held by the International Air Rail Organisation (IARO), centred on Milan and Baveno in April 2000.

Delegates were welcomed to a buffet lunch at the amazing new airport at Malpensa. SEA Milan Airports gave us a presentation on the background to the airport, including the contentious issue of allocation of flights between Malpensa and Linate. We were then shown round the airport, seeing in particular the air-rail-road logistics centre being built, before going down to the new airport station.

Here, courtesy of Malpensa Express, we sampled the double deck TAF trains to central Milan. We were guided round the Cadorna terminus - totally transformed from its state only two years ago. At that time it was a busy but down-market suburban terminus: now it is a high-quality international intermodal interchange.

After that SEA treated us all to a sight-seeing trip around Milan and a most memorable evening meal.

Then to business. Next day, two parallel sessions dealt with different aspects of (or obstacles on) the airport journey - interchange, and dealing with baggage. Experts led us with presentations on the issues. These were debated by delegates - people with a wide range of different experiences from very different transport operations around the world. Results were summarised, digested and reviewed at plenary sessions.

Interspersing these events were presentations on the Italian scene - the on-going enhancements to Rome's airport rail links, air cargo at Malpensa, and the future for Malpensa Express.

Finally, on day 3 there was a separate session on the growing business of air cargo by rail. We heard the results of a major EU study: we moved on to the hard practicalities of container sizes and loading gauges, and then heard from a leading operator about what his organisation is doing today.

Italian hospitality, Italian scenery and Italian food will be long remembered. This report is a reminder that we worked hard too. Lessons were learnt, ideas were discussed, and some business was done. To our hosts and our organisers as well as to all our delegates, grateful thanks.

Andrew Sharp

Director General

List of abbreviations and acronyms

AA   American Airlines

ADP   Aéroports de Paris

AFTEI   Air Freight Transport and European Intermodality

BA   British Airways

DB   Deutsche Bahn - German Railways

EMU   Electric multiple unit

e-ticketing   Electronic ticketing - where no physical ticket is issued

EU   European Union

FAG   Flughafen Frankfurt-Main AG - Frankfurt Airport Company

FNM   Ferrovie Nord Milano - North Milan Railway.

GPS   Global Positioning System

Hbf   Hauptbahnhof - main station.

IARO   International Air Rail Organisation

ISO   International Standards Organisation

IT   Information technology

KLM   Koninklijke Luchtvaartmaatschappij - Royal Dutch Airlines

km   kilometre

km/h   kilometres/hour

LH   Lufhansa

LIT   Italian lire

mm   millimetre

S-Bahn   Suburban railway

SBB   Swiss Federal Railways

SEA   Società Esercizi Aeroportuali spa - operators of Milan's airports.

SFr   Swiss Francs

SLA   Service Level Agreement

SNCF   Société Nationale des Chemins de Fers - French Railways

UK	United Kingdom of Great Britain and Northern Ireland
ULD	Unit Load Device - air cargo container.
US	United States of America

Passenger intermodality at Malpensa Airport

Dr. Lidia Lago Suardi, from the International Affairs and Relations Department of SEA Milan Airports, welcomed delegates to Italy, Milan and the Workshop.

The catchment area of Malpensa airport was some 8 million people - the third largest economic area in Europe. 1.5 million of these lived in the city of Milan. This meant that a good network of communications links to the airport was vital.

Malpensa, 48.5 km to the north west of the city, had been chosen as a site for climatic reasons - the south side of the city was badly affected by fog. It was an old military airfield with a long history. The old terminal - Malpensa North, Terminal 2 - was still in use.

Terminal 1 had been opened in October 1998 with two satellites (one for Shengen traffic and one for other destinations): a third was still to be built. A cargo area with a modern logistics centre was also under construction.

The two Milan airports together handled 23 million passengers in 1999 (the first full year of Malpensa). 70% are travelling on business. Historically only about 6% of Milan's traffic was transfer passengers: now this component is over 30%.

The train is completely integrated with the airport. The station was built with potential for through running, so it will be possible to extend the railway to the north and west.

There is much demand for better rail connections, in particular via Saronno (between Malpensa and Milan) to Novara in the west and Bergamo in the east.

A line connecting Novara, Saronno and Bergamo would form an east-west bypass for Milan: both rail and motorway connections are planned.

Novara is an important rail hub, for Genova, the Simplon line, Torino, Lyon, Venezia and Trieste. The future Lyon - Torino high speed line (a component of the EU's Trans European Network) will continue to Milan via Novara.

The rail route to Bergamo exists, but needs upgrading including electrification: some parts are little used. The airport at Bergamo - Orio al Serio - is the main airport in Italy for express freight: a rail connection to Malpensa would be useful and one to Milan is under consideration. The EU is involved in these studies.

A rail connection to Gallarate, some 7 km from the airport, serving Terminal 2 is another priority. Gallarate is on the Simplon route to western Switzerland.

Malpensa Express runs every half hour and takes 40 minutes: there are plans to improve both of these. Major problems include a village divided by the railway (where a tunnel is necessary to remove severance and reduce noise), and a 6 km single track section south of Busto Arsizio (to be doubled). Ultimately there will be three or four trains an hour taking 30 minutes for the 48.5 km.

Points which arose from the question and answer session included the following.

- In-town check-in at the Cadorna terminus is only available for Alitalia passengers with hand baggage. They now have to pay for their tickets - the arrangement whereby Alitalia gave their passengers free Malpensa Express tickets has ceased (although they, and passengers of KLM and NorthWest Airlines, can buy discounted tickets - LIT 9,000 rather than LIT 15,000).

- 200 - 300 passengers use check-in at Cadorna each day.

- The station at Malpensa was built with a direct connection to the airport baggage hall, so in future it will be possible to have check-in for hold baggage too. However, airlines appeared to want passengers to check-in at the airport since this reduced the probability that either passengers or bags could miss their flight.

- Originally it had been intended that Linate airport would only serve domestic flights. However an EU ruling that the whole of the European Union was "domestic" made this unworkable. The current arrangements are that Linate can be used without limit for routes where passenger numbers are in excess of 2.8 million a year. For other routes, only a few flights will be allowed to use Linate. While Malpensa can handle Milan's total demand, about 2500 people are affected by noise: different runway use patterns are being tried, but some lead to delay. There is no ideal solution.

- The Gallarate link will provide connections to Milano Centrale station as well as to Switzerland.

- Forecasts for Cargo City had been made by Bocconi University.

- Current usage of Malpensa Express is around 5000 a day: they hope for 7000 by the end of the year and a 20% market share for public transport.

- The original arrangement for free travel for Alitalia passengers has now ended: there are no Alitalia facilities on the trains. Alitalia subsidise the discounted rail fares they give to their passengers.

- At Cadorna, a covered way is being built for taxi users: station facilities are being increased.

Rome's airport railway

Luisa Velardi, Director Intermodal Integration, Ferrovie dello' Stato Italia

The rail link to Roma's main airport (Fiumicino - Leonardo da Vinci) had opened in 1990.

This had necessitated the re-routing of the Genova - Roma train services: the old route, which ran close to the airport, had been abandoned temporarily.

The station at Fiumicino was 70 metres from the international terminal and about 200 from the domestic terminal. The pedestrian link to the station was to be improved.

The regional line to the airport served 6500 people a day.

Until very recently three services had used the line - the airport express, the local service to the airport, and a local service bypassing the airport and running direct to the town of Fiumicino (Fiumicino Citta). Two months ago the third of these had been closed and had been replaced by a bus service to the airport. This had paved the way for service improvements on the airport trains.

The Leonardo Express had started two months ago, with refurbished loco-hauled air-conditioned rolling stock. All of the accommodation was first class, with good luggage facilities. Trains took half an hour and ran every half hour (at 7 and 37 minutes past each hour) between the airport and Roma Termini station.

The local service had 4 trains an hour (12, 27, 42 and 57 minutes past each hour). Fares were half those charged on the Leonardo Express.

Where is air cargo going?

Gianpaolo Pirani, Manager Cargo Development, SEA Milan Airports.

Recent changes in the market had been the move from considering air cargo to considering logistics, and from concentration to alliances. Integrators and post offices were going the same way - from national monopolies to international groupings.

The role of hubs (like Malpensa) was changing from interchange to logistics. They had to give added value, and increasingly had to be geared to electronic commerce.

The Malpensa cargo rail link was connected to the FNM main line.

The multi-modal (air-rail-road) logistics centre, which delegates had viewed the previous day, would be completed shortly.

Malpensa Express - the rail link between the heart of Milan and Malpensa Airport.

Gianni Scarfone, Commercial Director, and dott. Cinzia Farisé, Marketing Manager, of Ferrovie Nord Milano Esercizio spa

The Ferrovie Nord Milano group comprised railways (Malpensa Express and a network of commuter railways), buses, ticket distribution, helicopter services and a freight intermodality centre.

The frequency of Malpensa Express would increase from 2002 - to every 15 minutes with a 30 minute journey time. The acquisition of new trains is under consideration. The present double deck ones were a run-on order from a build of high capacity commuter trains for FNM and FS, and were not ideal for an airport service.

Fares (in LIT) were 15,000 one way, 200,000 for a month or 2 million for a year.

97% of trains arrived within 10 minutes, 99.5% within 30 minutes of schedule.

The forecast modal split had been 17% train, 51% car, 13% taxi, 12% shuttle bus and 7% charter bus.

The actual results for May to December had been 900,000 passengers by rail (equivalent to 1.5 million of the 19.5 million passengers through the airport in a full year - a 7.6% market share).

On average in 1999 they had carried 4200 passengers a day: 16% had period tickets and 84% daily tickets. At the end of March 2000 they were averaging 5000 passengers a day. Modal share was now about 12%: they were aiming for another 2% - 3%.

By 2005 they hoped to be carrying 6 million of the 31.6 million passengers projected to be passing through the airport each year.

Benchmarking air rail companies

Karl Thomas Reinertsen, Senior Consultant - Consulting for Ernst & Young AS in Oslo, led a discussion of benchmarking. His firm had considerable expertise in this area, especially with regard to airport rail links. They had initially been approached to do some work by Airport Express Train, but this had subsequently been broadened to include other rail links. The most recent work had involved Airport Express Train, Heathrow Express and Arlanda Express, and it was these results which were the main subject of the presentation.

Much work had been done: some in considerable detail. This had involved some areas where one or more of the companies involved had concerns about commercial confidentiality. Therefore in some places Karl was only able to refer to Partner 1, Partner 2 and Partner 3 rather than to identify the companies specifically.

Ernst & Young's involvement had grown:

- they were commercial advisers to Airport Express Train between 1997 and 1999

- there had been a first round of benchmarking involving Airport Express Train, Arlanda Express, Heathrow Express, Airport Express Line Hong Kong and Gatwick Express

- the second round had only involved the first three of these.

His first analysis focused on investment, financing and ownership structures. Of the six railways investigated (Airport Express Train, Arlanda Express, Heathrow Express, Airport Express Line, Express Rail Link Kuala Lumpur and Airtrain Citylink Brisbane), four owned their infrastructure and all operated it. Three were state owned and three had their investment partly state subsidised (although the two groups were not identical). One was in competition with other trains operated by its owner. Market share ranged from 36% (Airport Express Train) to 11% (forecast for Brisbane).

The objectives of benchmarking were

- to ensure efficiency in a new industry with limited historical data,

- to compare the performance of different functions, and

- to highlight areas with potential for improvement.

Areas investigated included the overall company picture, management and administration, sales and marketing, operations, train maintenance, track, and IT. The basis of the comparisons was unit costs and productivity, corrected by exchange rate factors.

Outputs included competitive analysis, best in class analysis, and industry analysis.

He showed a chart of basic operational data - statistics like the number of trains, number of seats, available seat kilometres, revenue passenger kilometres - and the unit costs or performance indicators which had been derived from these.

Costs included statistics like track maintenance costs/km: key performance indicators included such things as passengers/full time employee in the Sales and Marketing Department. Around 20 basic performance indicators were derived for each of the three railways.

To give an indication of the type of information and use made of it, he described in some detail one of the areas compared - sales by channel (ticket office, ticket machine, on board, travel agent, other agent). These were of direct interest to the Sales and Marketing Departments, because each channel had a different cost of sales. Overall sales and marketing costs differed significantly between the three - although the cost for each and even the magnitude of the differences were figures considered to be commercially sensitive.

It was possible to draw some general conclusions

- Arlanda Express was by far the most cost-efficient operator

- Heathrow Express had the highest revenue/passenger

- Airport Express Train had the highest market share.

Report of workshop 1.

Stress free journeys - how to cope with baggage.

INTRODUCTION

The workshop consisted of presentations from three speakers followed by discussion about the points raised. Approximately 25 delegates participated in this workshop. There was further discussion later in a plenary session with all 45 delegates. This report summarises the presentations and both sets of discussions.

Baggage systems from a customer point of view - the rail perspective

Roy Campbell, Head of Marketing, Gatwick Express

The presentation started with a video of a journey from London Victoria station to Gatwick Airport, from the bag's viewpoint.

An overview of remote check in included the following issues:

- Benefits to passengers - being able to get rid of bags early and having the aircraft seat allocated

- Benefits to airports - less congestion at the airport check in

- Benefits to airlines - early check in can resolve any difficulties with the passenger's ticket and enable yield management to be improved

  BUT

- Infrastructure and security issues create challenges to be overcome

- There may be a lack of clarity about who should promote the service - the airline, the rail operator, or the airport?

From the passenger's perspective, there is no doubt that baggage can influence the mode used, with taxi often being the easiest for those with baggage. Making it easy to carry baggage on rail links includes trying to avoid changes of level. Finally, passengers are concerned about their bags reaching the right destination.

Airport and in town stations are often complex interchanges; and there is always a question of whose resources are used to create the baggage systems. In addition approvals from security and safety authorities usually need to be obtained.

The rail operator needs to understand how the check in process works, and to ensure that the promotion of the service is consistent with the airline delivery. The airline wants to ensure that a service consistent with its airport operations is provided, and also wants to give extra convenience for its customers.

Two case studies of in town check in were discussed - Paddington for Heathrow Express, and Victoria for Gatwick Express.

Paddington has new purpose built infrastructure with 27 desks occupied by 19 airlines covering most of the alliances. Security procedures are carried out as if the desks were at the airport and bags are conveyed to the train by an underground conveyor, each bag and container being coded and tracked through the system. The train operator's contractor then sorts and loads the bags onto the train. There is a Service Level Agreement (SLA) between the airlines and the train operator that requires the bags to be delivered to the airport in a set time. At the airport, the bags are unloaded from the train by the train operator's contractor and handed over to the airlines, who then transport them to the terminals.

12% of Heathrow Express passengers use Paddington check in, and Heathrow Express delivers 99.7% of bags within the 60 minutes specified in the SLA. Since it started operations in June 1999, over 100,000 passengers have used the facility.

Among the learning points from the operation were the following:

- The operation would be more slick if the containers were taken direct to the baggage sort areas rather than their contents being unloaded into vans at the airport station.

- It would have been more efficient to have had one operator to deliver bags from the airport station to the baggage areas, rather than two.

- It has been difficult to cope with out-of-gauge baggage.

The Victoria check in operation for Gatwick Express has been operating in one form or another since the 1960s. British Airways have 18 desks at an upper level and bags are taken on a conveyor to platform level where they are loaded onto a truck which is then taken to the train side where the bags are loose-loaded onto the train by BA staff. American Airlines have 2 desks at platform level and bags are loaded into containers which are then loaded onto the train by a contractor. At the airport station BA bags are individually loaded onto trucks and the AA containers are offloaded and each are then driven to the baggage sort areas.

Problems arise at the airport station because some trains do not use the dedicated platform and it is then not possible to take baggage to the baggage sort areas. The airport station relies on manual handling and does not have modern systems.

Baggage trolleys and their security in use on railway platforms and their retrieval in railway stations

Wolfgang Kratzenberg, Managing Director, Expresso Deutschland

Expresso Deutschland is a world-wide company in the area of small goods handling. The product line includes modular aluminium hand trucks, modular lift trolleys, hand sensor controlled electrically driven trucks, mobile vacuum cranes and luggage trolley systems.

Surveys show that trolleys are very important to passengers at airports and railway stations - especially if they cannot find one. Planners and architects sometimes forget to design in trolley systems, and the supply and distribution is then an afterthought. Expresso have been looking into solutions to the whole question of trolley supply, storage and distribution.

There are various types of trolleys.

Railway companies insist that those used on railway stations have the brakes always applied unless they are held in the released position by passengers. Tests are required on rail stations with passing trains to demonstrate that a trolley will not fall or be blown onto the track.

Trolleys for use on escalators are available but are larger and less manoeuvrable. Large tyres are required to prevent them from getting caught in small gaps such as at the end of escalators where most accidents occur.

Trolleys used in airports tend to be specified with the brake off unless applied by a user. Some airports have their own requirements - a baggage shelf or a duty-free hook.

Trolleys in storage take up very large amounts of valuable space. Expresso have developed a storage and distribution system which creates vertical storage at points throughout a building: this also distributes trolleys from drop off points to pick up points. These can use non-stop 'paternoster' lifts and automatic discharge systems. A system is being designed for the terminal and rail station at Zurich Airport.

In the discussion that followed this presentation the issue of payment for trolleys was raised. At Malpensa Airport and at many airports and rail stations, a deposit is required which is refunded when the trolley is returned. This encourages the return of trolleys and helps with the management of circulation. However, it causes inconvenience to passengers who may not have the right coins and also may cause a passenger to leave bags unattended while a trolley is fetched or returned.

The issue of braking was also discussed. Rail stations require the brake to be on unless held off by a user. This affects the manoeuvrability of trolleys in bulk, which is necessary at some airports. Unbraked trolleys are permitted at some stations, where platforms are wide and slope inwards and the risk of falling them onto the track is low.

Baggage delivery from an airline perspective

Sue Atkinson, Customer Services Manager, British Airways Gatwick London Terminal

Key points from the airline perspective were the fear that passengers have that they will arrive without their baggage and the cost to the airline or repatriating any lost bags (which is between £100 and £200 per bag).

Having improved so many other areas of their service (like lounges, on board service and fares), baggage handling remains one of the airlines' greatest challenges. Passengers will often choose to reclaim and re-check their bags at a transfer airport rather than trust the airline to manage the interchange. Operating remote check in at a rail station viably and with customer confidence is a major challenge.

Additional factors involved in such an operation are train punctuality and reliability, and the rail infrastructure operation and maintenance.

In order to rise to this challenge, airlines, rail operators and airports have to work closely together.

The operation at Victoria evolved from a city centre check in which used dedicated buses to the airports. Checked baggage is loaded and offloaded manually, and there is double handling. At Gatwick Airport, the journey from the station to the terminals passes through security gates: bags may take 30 minutes to get from station to aircraft.

Minimum check in time at Victoria is 2 hours for long haul flights and 1.5 hours for short haul. The service is popular with passengers and there is a high level of customer satisfaction and repeat business.

For British Airways, the advantages of the Victoria check in are

- that it may be more cost effective to handle high yield passengers in town rather than at the airport

- some passengers using Victoria in particular have large amounts of excess baggage and the income from this helps to keep the operation viable.

BA's marketing of the Victoria check in targets particular groups and flights which can be better dealt with there.

Discussion and Plenary session

The common theme of the discussion session was the value of the various operations associated with baggage handling on airport rail links.

- The train operator bears the cost of carrying checked baggage in a special compartment and possibly some of the loading and unloading costs. The benefit received is the additional passengers attracted to the rail service by the availability of check in.

- The airport may bear the cost of providing some of the systems at the in town terminal but will benefit by reducing congestion at the airport.

- The airline bears most of the cost of providing the check in service, which may be more expensive than doing it at the airport, but benefits by having a competitive customer service advantage and by reducing congestion and last minute problems at the airport.

The value of baggage trolleys to the passenger, to the airport and to the rail operator is also an important issue. With both, questions of how costs should be shared and whether the passenger should pay are dealt with differently around the world.

Other issues from the discussion were:

- Volumes of baggage discouraged public transport use. Is there a "baggage penalty", similar to the interchange penalty in generalised cost models - especially if people cannot take baggage trolleys on escalators or trains?

- Why should people have to carry their own bags through Customs? Surely the bags can be examined automatically and their owners stopped if necessary?

- Jonathan Chatfield (Stansted Express) thought there was great benefit in passengers being able to use the same trolley for the whole journey between baggage reclaim and station platform.

- There were a number of negative comments about having to pay a charge or even a deposit for trolleys. Despite multi-currency deposits being possible with some systems, people did not like them. This reduced usage, decreased customer service and increased inconvenience.

- Malpensa Express had not been allowed to put trolley barriers on their platforms.

- One long term solution was collection and delivery from home - removing the need for passengers to carry their bags at all.

Andreas Willich commented that developments in the Swiss Fly-Rail product now enable baggage collection and delivery at 125 stations throughout the country. The possibility of making the service free, funded by a small increase in airport taxes, is being considered.

The question of what standards of service should apply to in town check in, and whether these should be the same as at airports, was also addressed.

SBB station staff had been trained by Swissair. Zürich airport had offered to provide staff to handle baggage at Swiss stations, but Swissair had been happy with the standard provided by SBB.

He also mentioned that trolleys were allowed on trains to Zermatt (a resort where cars were not permitted). People parked their cars at a park and ride station, and transferred their luggage to a trolley which they took on the train to Zermatt station and on to their hotel.

Finally, it was agreed that the issue of baggage handling on airport rail links, and in particular baggage check in at in town terminals, should be addressed by an IARO Task Group. This will be asked to study the issues and report back to a future IARO workshop.

Report of workshop 2

Stress free journeys - how to cope with interchange.

INTRODUCTION

The workshop consisted of presentations from three speakers followed by discussion of the key points. Some 25 delegates participated in this workshop. There was further discussion later in a plenary session with all 45 delegates present. This report summarises those presentations and discussions.

Airports as transport hubs - integrating the interchange.

Alastair Duff, Consultant, Heathrow Airport Ltd.

Airports can become multimodal interchanges of benefit to their neighbours as well as to airport users. To effect the transformation, congestion, capacity, environmental effects and investment all need to be handled in a balanced way.

Future global hubs - key world centres - will be those airports which are efficient road and rail interchanges too. Interchanges are where networks meet, integrating all scales of travel and all modes of travel. They are focal points in the environment needing quality, partnership and co-operation.

At all points on a journey, integration, intermodality and accessibility were key factors. Interchange at the airport needed as much attention as interchange at the downtown station.

Alastair instanced Heathrow, where 750,000 passengers arrived by coach each year and changed to other coaches. They derived value from Heathrow without actually using it as an airport.

Key factors for the transport user were reliability, comfort, frequency, information, speed, and efficient ticketing.

Transport policy mattered to everyone: buses and coaches matter as part of the network. Bus priorities were very effective in achieving some of the key factors listed above.

Partnerships - making it work - were difficult. We needed to find ways to bridge the barriers.

In response to a question on metros, Alastair said that he thought that, for example, the distance and number of stops meant that Heathrow was too far from London to be efficiently served by the London Underground. However, this depended on the metro. A longer wheel-base could give more luggage space, for example. Passengers needed space.

Commenting on a question about buses, he said that Amsterdam Airport Schiphol had designed a number of local bus routes specifically for airport staff and air passengers - the routes served the residential areas where the staff and passengers live.

Air rail integration - the Swiss way

Andreas Willich, Division Personenverkehr, Swiss Federal Railways

The speaker had responsibilities for bringing air and rail closer together in Switzerland.

For a number of years it had been possible to check-in air baggage at 125 Swiss railway stations - all of the staffed stations on Swiss Federal Railways (SBB). It was also possible to do the same in the other direction - from any airport to a Swiss rail station (as long as the baggage did not contain dutiable items). The system did not cope with out-of-gauge luggage. It was called Fly-Rail-Baggage.

In addition, at 23 main stations it was also possible to get a boarding card - and this number was to increase to 40 soon.

The airport operators were interested in air-rail co-operation - it gave them more slots, it had environmental benefits, and it improved their competitive position. So this was a growth market.

He gave some details of the history of the airport station at Zürich.

> 1980 - a 4-track station sub-surface had opened at Zürich Airport.
>
> 1982 - hourly InterCity trains each way
>
> 1990 - S-Bahn concept introduced at the airport (there are now 2 routes)
>
> 1997 - half-hourly InterCity trains each way.

The station is now served by 210 trains a day to Zürich's central station (Hauptbahnhof). During the day there are 9 trains an hour: they are not at regular intervals but the largest gap is 14 minutes.

Improvements are planned to overcome some of the present weaknesses, which include long stopovers at Zürich Hbf for Luzern - Airport and Basel - Airport trains, infrequent (every two hours) Basel - Airport trains, and a poor service between Aargau and Zürich Airport.

In the 1999/2000 timetable there will be a half-hourly service on a new S-Bahn line (S16). New double deck InterCity trains, carrying 1400 seated passengers (ultimately with a lounge area on the top deck) will be used for the Luzern - Zürich Airport service.

This will be further improved in 2001/2002, with double deck trains running between Genève and St. Gallen via Bern and Zürich Airport, and new tilting InterCity trains on the Lausanne - Bern - Zürich Airport - St. Gallen service.

Zürich airport sees 30,000 passengers a day on average. A May 1998 survey showed that 58% use rail, 1% bus, 10% drive, 29% are car passengers, and 2% come by taxi. Reasons cited for using train are convenience (46%), parking charges (20%), speed (17%) and train fare included in ticket (17%) - normally when buying an air ticket from a travel agency in Switzerland, passengers are sold a rail ticket as part of the deal.

In October 1999, a service called Flugzug Basel was introduced at the initiative of Swissair. This was a fast regular train service between Basel and Zürich airport (hourly in the peak hours: alternate hours during the day). Journey time was 70 minutes. Trains had Swissair flight numbers and travel on them gave 250 Qualiflyer miles. Check-in was 25 minutes before departure (30 minutes, for economy class passengers) - a contrast to the 5 hours with Fly-Rail-Baggage.

A new underground station was planned for Zürich airport.

Genève airport was served by 4 trains an hour, with direct services to all major cities in Switzerland.

By 2005, it was hoped to have a station on the Basel - Mulhouse line to serve the Basel - Mulhouse - Freiburg EuroAirport: it would be connected to the airport by an automated people mover.

By 2015, they want to develop an integrated network for EuroAirport from stations in France, Germany and Switzerland. This would use a new station under the terminal.

They are building a 7 km line between Mendrisio and Arcisate to improve connections from Switzerland to Malpensa via Gallarate, and will ultimately develop a new high speed line from Lugano to Milano via Malpensa giving an even better service.

All parties want to reduce the use of short-haul air services by moving short-distance passengers to rail.

Planned service improvements included removal of bottlenecks, half hourly services between all major cities in Switzerland, universal use of modern air conditioned rolling stock and better early-morning and late-night connections.

Planned improvements to station check-in included 17 more stations and a shortening of the minimum check-in time. A check-in for baggage at Basel station of five hours before flight departure, for instance, was far too long. They would like to be able to close check-in 20 minutes before the departure of the last reasonable train to the airport connecting with the flight.

They would like to be able to offer Fly-Rail-Baggage free to everyone with a flight coupon (instead of charging 20 SFr separately for it, as now - although some airlines offer it free to their preferred passengers). The cost would be met by a small increase in airport tax: this would need a change in the law, but was something everyone seemed to want.

By 2001, they are planning to introduce a home baggage collection and delivery service all over Switzerland.

A nation-wide contactless smart card is to be introduced, valid for travel on all public transport modes and integrated with airline e-ticketing.

Their vision is to have free public transport to airports - possibly just for first and business class air passengers.

Airlines are very positive about all this - partly because of slot congestion and partly because short flights are uneconomic.

In the question and answer session, the following points were made.

> Station check-in can be used by any airline wanting to use it. The only physical requirement is for compatible IT systems. At the moment it cannot be used by US airlines - its security is not of a standard acceptable to US authorities.

> Both Swissair and Crossair were willing to pull out of short-haul flights in favour of rail. As long as the minimum connection times worked and the interchange was of a high quality, they were satisfied - basically because of the poor economics of short-haul flights.

> There was some discussion of the economics of the check-in service for baggage. The house to house service within Switzerland (costing users 10 SFr) was probably losing money. The airport to station service (20 SFr) was probably covering direct costs. They were working on improvements to handling systems and finances, and a trial of the improved system will start in 2001.

> Swissport pays SBB a small amount for each bag checked in at stations in recognition of the saving in handling at airports. Swissport also provided the IT and baggage tag machines. Bags are physically sealed at stations and screened at airports.

> Where Swissair or the Swiss Tourist Office took money for the Fly-Rail-Baggage service, they passed it all on to SBB - no commission was charged.

> There were agreements with tour operators whereby they bought rail tickets in bulk in advance and automatically gave them to their customers. Commission was volume-related.

Better interchange - extending the concept nationwide

Simon Coventry, Managing Director, Transport Interchange Consultants Ltd.

Simon welcomed this session and the initiative IARO had taken in setting it up. Discussion of interchange between air and rail raised the sights of the rail industry and stimulated them to achieve the standards reached by the aviation industry.

Air rail links had a very positive influence on station development. For example, Paddington, Heathrow Express's London terminal, was unusual among London stations in being partly climate controlled. Its retail, catering and waiting arrangements were approaching those of an airport in quality.

Airport railways were also catalysts for the total redevelopment of the area round the termini - where, with the passing of the years since the station was built, the environment had tended to deteriorate; and with changes in technology, land use had changed significantly.

The aviation industry, through air rail links, was helping the rail industry to understand the philosophy and requirements of modern interchanges.

High standards were necessary on the transport network and particularly at interchanges. It was possible to devise a framework and a set of comparators against which standards and priorities could be set. The creation of a passenger transport network including a multiplicity of modes, and the definition of service levels on each mode and at each node, was a way forward.

Standards for nodes - hubs - were needed for waiting times, ticketing, information, feeder services, access and other facilities. The interchange was a gateway to the network: physical standards were important. Changes of level should be minimised and luggage movement facilitated. He instanced the idea of a helical ramp passing through ticketing, information and retail areas between street and platform level.

The central feature of an interchange needs to be the happy passenger - warm, secure and well-served - and not the transport mode. Historically, stations have been designed round trains (which are therefore prominent and visible in the design): at many airports, passengers never see the exterior of a plane. Train-dominated interchanges led to cold and noisy environments. Platform screen doors were one factor which changed this, and helped give an airport image.

Too often there were two worlds - airport and railway - but the same passenger was in each, on one journey. Airports strove to achieve balance between satisfying customers and generating revenue: at too many rail or bus interchanges, there was little evidence of either - although there were some excellent examples where this was not the case.

He suggested some general principles or standards.

For example,

> both waiting and travel transactions should be possible in a sheltered environmentally acceptable space
>
> intermodal transfers - movement between station and access mode - should be possible under cover, with walking distances at an accepted minimum.

Information should be available not just in the terminal but in the adjacent bus stations and bus stops, in car parks at the point where parking tickets are bought, on the main road passing the station, and in the nearby shopping centre. Developments in IT help make this feasible.

These desirable features needed full involvement of all of the stakeholders.

Even at the smallest node, basic service standards should apply - comprehensive ticketing facilities with a maximum queue time specified, clean toilets, current information, comfortable waiting areas from which it was possible to see the approach of the train or bus approach, and retail and catering facilities.

He considered that, in aviation, a hub was where operators made money from services meeting: in the railway context, a hub was merely an interchange. How should interchanges be managed in the interests of all users - did it, for example, need an independent operator charging all modes for use and coordinating them?

Successful hubs would generate income which would finance further enhancements, increasing their attractiveness and success.

Discussion and plenary session

The discussion focused on developments in IT and how these would impact on improved interchange.

Web sites were commonly used to provide information. Good examples included www.airlinks.co.uk, with information on how to reach London's airports by bus and coach; and www.uic.asso.fr, giving links to train operators sites world-wide.

Standard enquiry screen layouts would ease language problems. All journey enquiries included start and end points and preferred dates and times: if these were in a predictable order, it would make international usage easier. Intelligent defaults (as on the Paris Metro's excellent site, www.ratp.fr, where the system makes a sensible guess if the input is insufficiently detailed) were also valuable.

It was suggested that IARO might promote good web-sites and review what made them particularly good, to stimulate emulation.

Web-sites which permitted ticket purchase (www.heathrowexpress.co.uk, www.viarail.ca) were commended.

Sites which provided real-time information (using GPS technology) were coming slowly, and were very valuable in assuring passengers about the reliability of the next stage of their journeys. These needed to be accessible by people on the move - either through terminals available to passengers on their journey, or through mobile phone or pager technology.

Report of session 3

The role of rail in air cargo

INTRODUCTION

The workshop consisted of a brief introduction by Andrew Sharp, then presentations from three speakers followed by discussion about the points raised. Approximately 10 delegates participated in the workshop. This report summarises the presentations and the discussion.

Andrew said that IARO had set up a number of task groups to research and report on common problem areas. These task groups were informal groupings of interested people who got together (either physically or by email) and researched key issues, problem areas and possible solutions.

The Air Cargo task group, which he had chaired, comprised Cyril Bleadale (Railnews), Jane Clarke (Adtranz), Trevor Clowes (English, Welsh & Scottish Railways), Gordon Griffiths (Manchester Airport), Geoff Maynard (Vector Management), Brigitte Millour (Aéroports de Paris), Brian Penman (British Airways), and Hans van Oel (Amsterdam Airport Schiphol).

It had started with a draft report: in the light of the group's discussions and in particular a presentation from Jan de Rijk Logistics (who were unfortunately not able to be present at the Workshop), this would be re-drafted, finalised and circulated.

He made the point that there were important differences between large (container-sized) and small consignments, but there were some common themes.

- Even more than with passengers, rail is not always the solution; and

- just as with passengers, air traffic often needs to be combined with surface traffic in order to reach viability.

AFTEI (Air Freight Transport and European Intermodality)

Brigitte Millour, Projects Manager Corporate Strategy, Aéroports de Paris.

Brigitte reported on this EU sponsored project, which had brought together a group involved in IT in transport. The final report had not yet been published, in part because the co-ordinator had retired.

ADP had been responsible for the main task, the case studies. In this they had worked with parcels carriers, airports and French Railways (SNCF).

A number of key themes had emerged from the work.

- It is always easier to carry on with existing methods rather than go through the organisational complications of using something different. Inertia is a great barrier.

- Cost and quality had to be competitive with other modes. Overall journey times also had to be competitive, which probably meant a rail terminal close to the air freight hub.

- Rapid loading and unloading was vital.

- High speed freight services needed to be developed - possibly by adapting existing high speed passenger trains, possibly by developing containers which could be used in high speed passenger trains, or possibly by coupling freight vehicles to high speed passenger trains.

- High speed slots had to be made available for overnight freight trains.

- It was important to differentiate between general air cargo and express air freight - they had different characteristics (in particular, very different time sensitivities).

- Optimal use of each transport mode. Inter-continental cargo travelling long-haul in freighters and then transferring to passenger planes for the final sector used the latter at marginal cost. However, restrictions on equipment (hold space limited) and the time sensitivity of short-haul flights were major constraints.

- Regulatory constraints may affect modal choice. Long-haul air cargo through Frankfurt Airport to Italy and Hungary in particular was taken by road from Frankfurt to Mannheim, then transferred to rail for the rest of the journey. This was because the weekend lorry bans in Germany ruled out a road operation 7 days a week. Because air cargo needed to operate seven days a week, rail had to be used. Such constraints seem to be on the increase.

- Increased potential for express cargo. The conclusion of studies in Amsterdam Schiphol was that trains operating at high speed could travel further in a day (and therefore expand the airport catchment area more) than trucks could. However, this needed a commercial speed and consistent reliability.

- Freight trains had to be as reliable as passenger trains. This might need either more or dedicated infrastructure. This is the way DB are going; and the Betuwe Line in the Netherlands was built solely for cargo.

- Dedicated trains for air cargo were unlikely to be justifiable - volumes were probably insufficient.

- Integration of air and non-air cargo meant larger volumes with more potential for profitable operation.

- Rail capacity needed to be sold and managed in the same way as aircraft capacity - by yield management.

- A service needed to be in place before airlines would use it - but interest in the potential of rail was growing.

- Where such a service existed, it had the potential to expand people's horizons - but hard work and co-operation was needed to ensure that everything came together at the same time.

- Intermodal transfers were always difficult and costly: they had to be justified by some off-setting saving or business advantage.

She described a study by a working party of a high speed (160 km/h) overnight cargo service between Köln, Frankfurt and München. This had seemed practicable, but it had proved impossible to find an operator. This was possibly because of the need to mix air and conventional cargo and the complex logistics involved in that.

The hub and spoke concept might prove useful in future work.

There appeared to be significant potential for high speed (200 km/h) services on a number of routes - in particular the London - Amsterdam - Frankfurt - Paris quadrilateral and north-south routes to Spain and Italy.

Container sizes and loading gauge issues

Geoff Maynard, General Manager, Rail and Intermodal. Vector Management Ltd.

Geoff's paper, "The opportunities for conveying air cargo containers by rail in the UK", had been circulated in advance. It made the point that 75% of European air cargo never leaves the ground - it is moved by road in air freight containers (about a third) or on pallets (about two-thirds).

His paper (which, as the title states, concentrates on the restricted loading gauges in the UK) discussed the problems of moving these containers by rail instead.

There was a key contrast between conventional rail containers (built to ISO specifications - stackable, strong, big, heavy) and air containers (occasionally stackable but generally none of these). Standard ISO rail containers were either 20 feet or 40 feet long, 8 feet wide and of varying heights. Weight could be reduced by having curtain sided containers - but these needed a strong roof and a means of securing the cargo.

Another key contrast was between loading methods. The aviation industry tended to use roller bed technology: railways tended instead to use small wheeled containers (typified by the Post Office hub at Willesden, in north London).

Air containers (ULDs), of which there were about 80 different varieties, were classified by the base size. Some had been built specifically for specific situations, maximising the use of the interior space of a specific aircraft.

Containers carried by all-cargo freighter aircraft could be significantly higher than those for use in passenger aircraft holds (108 inches, compared with 64 inches). They were likely to remain out of gauge for UK railways. While there was less of a problem in continental Europe, where maximum heights were typically 30 mm greater, height still remained the main constraint on carriage of freighter containers.

It was possible to accommodate 8 foot by 8½ foot containers on rail in the UK on most routes. Low-floor wagons were available: these extended the range of possible routes for 8½ foot containers. A further important constraint in the UK was high platforms: this was a major problem, restricting container and vehicle widths at low level. Very few routes were available for 9 foot and 9½ foot containers on conventional wagons, and even when loaded on low floor wagons there were route restrictions.

9½ foot containers could be carried on conventional wagons in most of continental Europe.

Pallets were very important. Cargo was generally secured to them by webbing, and the webbing secured to the aircraft side. They have standard base sizes which were generally the same as those of containers. Both generally had the same handling arrangements: both needed to be secured, because of loading gauge constraints. It was important to be able to handle both.

Carrying air cargo containers in 8 foot high rail containers meant having a roller bed, which would give a usable height of around 84 inches (or 90 inches in an 8½ foot high container, 96 inches in a 9 foot container). This would be adequate for most of the containers carried in passenger aircraft. Width was more of a problem - 88 inch wide ULDs could just be fitted in, but those which were 96 inches wide would cause problems. This width was available, but only for 7 feet above platform height (3 feet above rail level).

It might be best when considering carrying pallets or ULDs by rail to develop purpose built vehicles which could handle both, rather than load them into ISO containers. This would also be better aerodynamically.

His conclusion was that most types of ULD (air container and pallet) could be fitted into an 8½ foot high rail container fitted with a roller-bed floor. However the rail container would need to be well engineered to fit - particularly in its height. An airline restraint system would need to be fitted internally.

It had to be remembered that much air cargo was time sensitive.

The aspiration for speed was important. If paths (slots) were wanted on high speed lines, high speed cargo trains were essential.

The location of the transfer point was important - he instanced the one at East Midlands Airport, which was airside, reducing the potential for mixing air and conventional traffic in the same load. Rail access was important, to minimise expensive and time consuming double-handling.

In the UK, it was possible to get Government grants for capital expenditure (Freight Facilities Grants) and for some operating costs (Track Access Grant, paying for access charges).

Express parcels and mail

Trevor Clowes, Business Development, English Welsh & Scottish Railway.

EW&S is the largest of three rail freight operators in the UK, with heavy haul, parcels and mail services in its portfolio.

Trevor discussed issues concerning express parcels and mail.

Carriage of mail by rail had a long history, and was still developing. Royal Mail had invested £150m in the Railnet distribution network for letter mail. It uses dedicated fast reliable mail trains, with contents containerised.

The London centre is at Willesden Junction: adapted passenger stations or dedicated new mail stations are used in other places.

Standard Royal Mail wheeled containers are used for carrying letter mail by train. This reduces handling.

Royal Mail has 65 dedicated trains each day. Of these, 16 are Travelling Post Offices, carrying containers but with facilities for sorting mail on board.

Some of the rolling stock is new (16 4-car dual-voltage class 325 EMUs): all other vehicles have been modernised.

Vehicles have shutter doors, to maximise platform space: these have security locks.

They have a high standard of interior lighting, non-slip floors and container retention straps.

Royal Mail Parcels - Parcelforce - run a daily piggyback service between Willesden and Glasgow. The operation is slick and highly efficient - the last vehicle comes through the terminal gate 10 minutes before the departure of the train. They are looking to higher speeds.

Trevor said that a key need was a better loading gauge to improve capacity and potential.

International traffic was developing fast - both by the Channel Tunnel and by Short Sea routes (principally Immingham).

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The full text of some of the presentations is available, as are copies of the slides used by some of the speakers. Contact IARO for details.

This was the second in the series of IARO workshops. Copies of the report of the first, in Berlin in 1999, are available price £250 (free to IARO members).

These workshops are very focused, dealing in detail with a restricted number of key issues. They complement the regular Air Rail Conferences, which have been held as follows.

1994 - Paris

1996 - London (and Heathrow Express)

1997 - Oslo (and Airport Express Train)

1998 - Hong Kong (and Airport Express Line)

     - Frankfurt (the AIRail station and the Cargo Sprinter)

1999 - Copenhagen (and the Øresund Link)

<center>⌦⌫⌦⌫</center>

<center>Planned</center>

2000 - Paris (and plans for CDG Express)

     - Washington (and Baltimore-Washington International Airport)

2001 - Madrid (and its airport rail links)

     - Brisbane (and Airtrain Citylink)

2002 - Kuala Lumpur (and Express Rail Link)

Details are available from IARO.