



EUROPEAN CONFERENCE OF MINISTERS OF TRANSPORT

# INTEGRATION OF EUROPEAN INLAND TRANSPORT MARKETS



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**EUROPEAN CONFERENCE OF MINISTERS OF TRANSPORT**

# **Integration of European Inland Transport Markets**



## EUROPEAN CONFERENCE OF MINISTERS OF TRANSPORT (ECMT)

The European Conference of Ministers of Transport (ECMT) is an inter-governmental organisation established by a Protocol signed in Brussels on 17 October 1953. It is a forum in which Ministers responsible for transport, and more specifically the inland transport sector, can co-operate on policy. Within this forum, Ministers can openly discuss current problems and agree upon joint approaches aimed at improving the utilisation and at ensuring the rational development of European transport systems of international importance.

At present, the ECMT's role primarily consists of:

- helping to create an integrated transport system throughout the enlarged Europe that is economically and technically efficient, meets the highest possible safety and environmental standards and takes full account of the social dimension;
- helping also to build a bridge between the European Union and the rest of the continent at a political level.

The Council of the Conference comprises the Ministers of Transport of 39 full Member countries: Albania, Austria, Azerbaijan, Belarus, Belgium, Bosnia-Herzegovina, Bulgaria, Croatia, the Czech Republic, Denmark, Estonia, Finland, France, FYR Macedonia, Georgia, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Moldova, Netherlands, Norway, Poland, Portugal, Romania, the Russian Federation, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine and the United Kingdom. There are five Associate member countries (Australia, Canada, Japan, New Zealand and the United States) and three Observer countries (Armenia, Liechtenstein and Morocco).

A Committee of Deputies, composed of senior civil servants representing Ministers, prepares proposals for consideration by the Council of Ministers. The Committee is assisted by working groups, each of which has a specific mandate.

The issues currently being studied – on which policy decisions by Ministers will be required – include the development and implementation of a pan-European transport policy; the integration of Central and Eastern European Countries into the European transport market; specific issues relating to transport by rail, road and waterway; combined transport; transport and the environment; the social costs of transport; trends in international transport and infrastructure needs; transport for people with mobility handicaps; road safety; traffic management; road traffic information and new communications technologies.

Statistical analyses of trends in traffic and investment are published regularly by the ECMT and provide a clear indication of the situation, on a trimestrial or annual basis, in the transport sector in different European countries.

As part of its research activities, the ECMT holds regular Symposia, Seminars and Round Tables on transport economics issues. Their conclusions are considered by the competent organs of the Conference under the authority of the Committee of Deputies and serve as a basis for formulating proposals for policy decisions to be submitted to Ministers.

The ECMT's Documentation Service has extensive information available concerning the transport sector. This information is accessible on the ECMT Internet site.

For administrative purposes the ECMT's Secretariat is attached to the Organisation for Economic Co-operation and Development (OECD).

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*Further information about the ECMT is available on Internet at the following address:*  
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## FOREWORD

Over the last decade ECMT membership has more than doubled to its present 39 full members. As a political organisation for transport authorities, ECMT has a key role in the integration and development of the European transport system. The organisation contributes to these objectives in various ways, through information exchange, policy dialogue and the formulation of political agreements on policies and measures. The annual Ministerial Council provides a valuable opportunity to give a political impetus to the process of integration and to resolve practical difficulties.

While the broad policy approaches are converging in terms of adherence to market principles and gradual harmonisation of laws, there are significant differences between countries and there are also obstacles and difficulties to closer integration. There are many topics that are relevant to the integration process in the transport sector, including infrastructure standards and financing, legal harmonisation, development of business and logistics practices, and overcoming obstacles (such as border crossings for example).

This collection of papers represents recent ECMT work on some of these topics. Some are the output of Working Groups and others are contributions from individual experts. The chapters stand alone but there is a coherent message on the need to work on several fronts to improve the integration of markets and to open opportunities for trade and social contacts. The papers, as well as the conclusions, recommendations and formal Resolutions, were presented in Warsaw to the ECMT Ministerial session in 1999. They are the basis for an ongoing discussion and contribute to the integration of transport markets and the gradual achievement of transport policy convergence in Europe.



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*Chapter I*

**MAIN ISSUES AND TRENDS**



## 1. INTRODUCTION AND BACKGROUND

The integration of European inland transport markets is a topical issue that has generated a great deal of activity in recent years, both at national level and in the different international organisations – governmental and professional. As recalled in the joint communication of ECMT Transport Ministers presented at the 3<sup>rd</sup> Pan-European Transport Conference in Helsinki, the overall objective is to establish a pan-European transport system that is coherent, efficient, safe, and compatible with the postulate of sustainable development. The integration of transport markets is, in essence, a fundamental condition for the development of trade relations in Europe and, more generally, of economic activity. According to the terms of the *Resolution on Access to European Transport Markets* adopted in Vienna in 1995, the establishment of transport links between East and West, offering fair and equitable access to transport markets, is essential for the integration of transition countries into Europe.

The purpose of this chapter is not to review in detail all the activities undertaken since the Vienna Resolution, but instead to signal some particular issues and provide Ministers with an opportunity to exchange views on where they see the difficulties and challenges for the future.

In the transport sphere, the context for integration encompasses the national and international legal framework governing transport, specific transport regulations, the state of infrastructure, equipment and installations, the business framework within which companies operate, as well as the extent to which rules are followed.

Within ECMT, work related to market integration is carried out in the main modal working groups as well as in the group dealing with integration issues. The political framework is provided by the resolutions and recommendations adopted by Ministers and, in particular, the Resolution adopted in Vienna in May 1995 (No. 95/1). Following the adoption of the Resolution, a number of activities were undertaken to implement it. In addition, a major PHARE Study to assess barriers to integration and ways to overcome them for EU and PHARE countries was recently completed.

Since 1995, several additional countries have joined ECMT, including Russia, and therefore market integration questions are taking on a wider geographical aspect. Moreover, the Helsinki conference and regional meetings show that the interest in market integration questions extends further southwards and eastwards. This is confirmed by the papers from the Antalya Seminar (see Chapter III).

To situate these questions in their general context, this chapter first summarises some macroeconomic trends, then looks at the most recent transport and investment trends. Obstacles to efficient transport are discussed and some modal issues raised. Finally, some directions for further work are suggested.

## 2. MACROECONOMIC FRAMEWORK

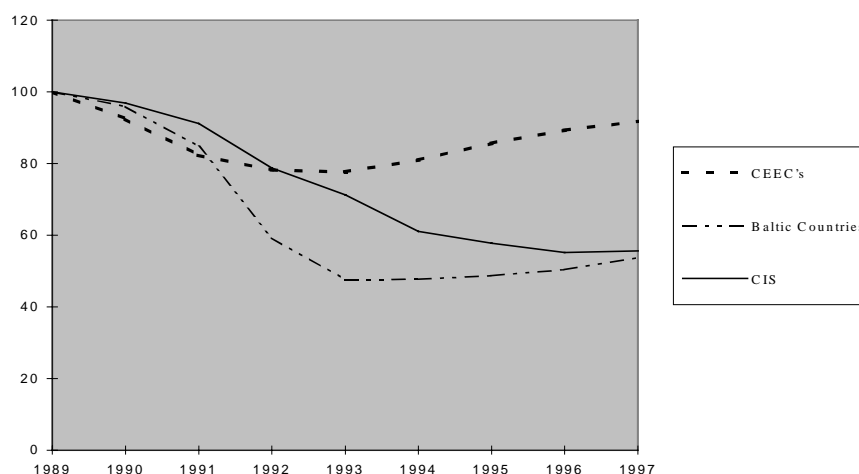
Development of the economic situation in transition countries was prepared by the ECMT secretariat based on analysis contained in the following publications: OECD Economic Outlook nos. 62 and 63, December 1997-June 1998; Economic Survey of Europe, UN-ECE, nos. 1 and 2, 1998; Transition Report 1997 and Transition Report update (April 1998), EBRD.

### 2.1 A general decline in GDP

The transformation of the economic and political systems in transition countries saw their GDP falling on average by over 20% and by as much as 50% in the Baltic countries. In the early years of the transition, investment declined by almost 40% and large balance of payment deficits developed mainly due to import growth.

From 1993, the first signs of an economic upturn were seen in Poland, Hungary, the Czech Republic and Slovenia. This growth accelerated and extended to many other countries, despite a slight slowdown in 1996 due to sluggish economic performance in Western Europe. The economic recovery seems to have continued during 1997 and 1998, despite the Russian financial crisis. The profound adjustments undertaken during the transition seems to have insulated the transition economies from the turbulence of the Russian crisis, with the exception of the Baltic countries and members of the CIS.

Figure 1. **Change in GDP in countries in transition (1989 = 100)**



Source: ECMT, 1999.

Though the situation has greatly improved in the last four years, the GDP of CEE countries is still as much as 10% lower than in 1989 (almost 45% in the Baltics and in the CIS) see Figure 1. Industrial production is still almost 25% lower than in 1989 (60% in the Baltics and 50% in the CIS).

## **2.2 Trends vary by country**

Apart from the overall decline in GDP and industrial production, one of the features has been uneven growth patterns – with extremely rapid growth in some countries and major setbacks in others. Within countries, there has also been wide variation over time. These facts are explained by the substantial differences in the pace and extent of economic reforms in the different countries.

The main characteristics of this varied picture are the following:

- a growing divergence, accentuated again in 1998, between the countries of South-eastern Europe confronted with serious economic and financial difficulties, and those of Central and Eastern European Countries (CEECs) and Baltic Countries on the other which are seeing a period of rapid growth;
- a recent but spectacular takeoff in the Baltic countries, which however remain exposed to the crisis in Russia;
- a long economic decline in the countries of CIS which halted only in 1997 with the remarkable turnaround in several of these countries but a renewed collapse again in 1998.

## **2.3 Industrial growth led by exports**

One of the key motors for the economic recovery in the majority of the CEECs has undoubtedly been external trade. Imports and exports have grown faster than world trade. Exports have contributed positively to economic growth due to a combination of factors including favourable economic conditions in North America and Europe, a slowing of wage pressures, favourable exchange rate trends, a growth in productivity and productive capacities in some export oriented sectors. On the domestic demand side, industrial investment has been the principal stimulant to economic growth, with a gradually growing role for private consumption in the most advanced economies.

Contrary to expectations, it is the industrial sector which has been the principal spur to the economic turnaround in transition countries as well as the major generator of new jobs in the private sector. Far from developing post-industrial service-based economies, the majority of the CEECs having eliminated their old industrial capacity seem to be embarking on a process of re-industrialization with a very strong concentration towards exports.

## **2.4 Persistent weaknesses**

The principal problems relative to the economic situation for the countries in transition concern:

- the risk of a slight weakening of EU imports which could severely effect CEE countries because of their strong dependence on that market;
- the precarious economic situation in Russia which could lead to sharp exchange rate adjustments and compromise the prospects for inflation and external debt;
- continuing weaknesses in the banking sector;
- the slow pace of reform in several countries already confronted with large budget deficits and serious fiscal problems.

### 3. TRANSPORT TRENDS IN TRANSITION COUNTRIES

The information contained in this section is drawn from the following publications: *Trends in the Transport Sector 1970-1997*, ECMT 1999; *Statistical Trends in Transport*, ECMT 1999; *Statistics on Transport of Goods by Road in the Central European Countries*, Eurostat-Phare, February 1999.

#### 3.1 A marked decline in goods traffic

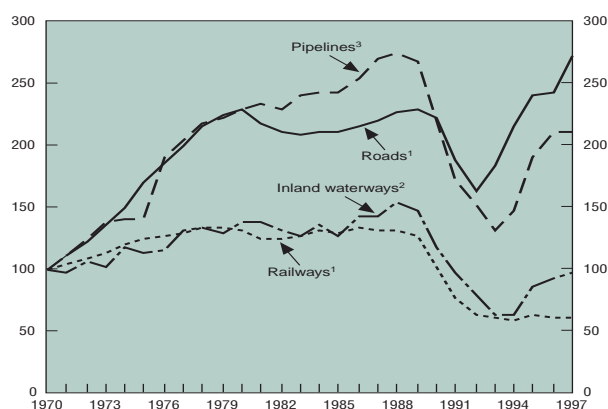
The impact of the changed political and economic situation has been dramatic for transport. Between 1988 and 1992, goods moved (measured in tonne-kms) declined by 46% in the CEECs and the Baltic States.

From 1993 onwards, with the emergence of signs of growth in certain countries, goods transport started to grow again. So, in 1997, and despite the crisis in several south-eastern countries, freight traffic grew by nearly 5%. Despite the pick-up in activity, it should be pointed out that freight traffic levels in 1997 in the CEECs and the Baltic area are over 33% less than their historically highest level of 1988.

Recent goods transport trends in the CIS countries and CEECs are not the same. The former show undoubted signs of difficulty in reforming the economy and are affected by delays in putting in place stabilisation policies and introducing a market economy framework. The major economic crisis has resulted in a continuing decline in production with profound consequences for goods transport. The available statistics show decline of over 62% for both road and rail traffic between 1990 and 1997, even if an improvement in the economic situation in 1997 (with a growth in GDP for the first time since 1989) limited the traffic reduction to 1%.

Figure 2.

**FREIGHT TRANSPORT TRENDS  
IN EASTERN EUROPE AND THE BALTIC STATES**  
(tonne-kilometres)  
1970 = 100

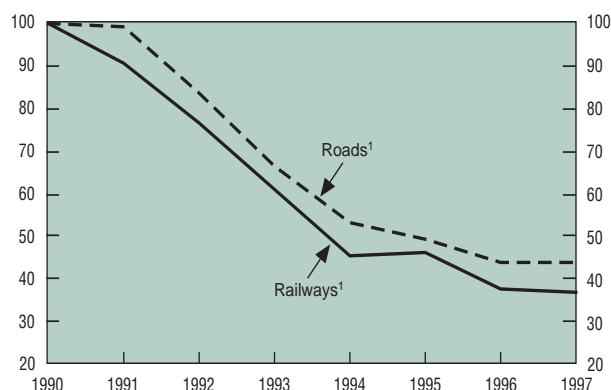


1. 14 countries: AL, BG, BIH, CZ, EST, H, HR, LT, LV, MK, PL, RO, SK, SLO.
2. 10 countries: BG, CZ, EST, H, HR, LT, LV, PL, RO, SK.
3. 8 countries: BG, CZ, H, HR, LT, LV, PL, RO.

Source: ECMT, 1999.

Figure 3.

**FREIGHT TRANSPORT TRENDS IN CIS COUNTRIES**  
(tonne-kilometres)  
1990 = 100



1. 4 countries: AZ, BY, RUS, UA.

Source: ECMT, 1999.

### 3.2 A change in modal split

In CEECs and the Baltic States, the different modes were not affected in the same way by the decline between 1989 and 1992. Nor did they gain to the same extent when economic growth resumed. From 1993, road freight transport managed to wipe out the decline in activity, which in any case was less than for the other modes. Railways and waterways on the other hand, declined systematically from 1989 until 1995 and 1994 respectively before the decline was arrested.

Railways in CEECs and the Baltic States suffered a decline of almost 54% in their freight activity between 1988 and 1997 due mainly to the collapse in container traffic (down 87% in TEU's between 1989 and 1995). Road transport, also affected by the decline in production in the early 1990's was the main beneficiary of the economic upturn. In 1997 traffic in tonne-kms increased by 12%.

After the spectacular turnaround in 1995 in waterway traffic on the Danube and because of the end of the blockade on the Yugoslav section, the result for 1996 and 1997 confirmed the improvement of inland navigation, which had virtually collapsed between 1989 and 1994, losing almost 60% of its traffic.

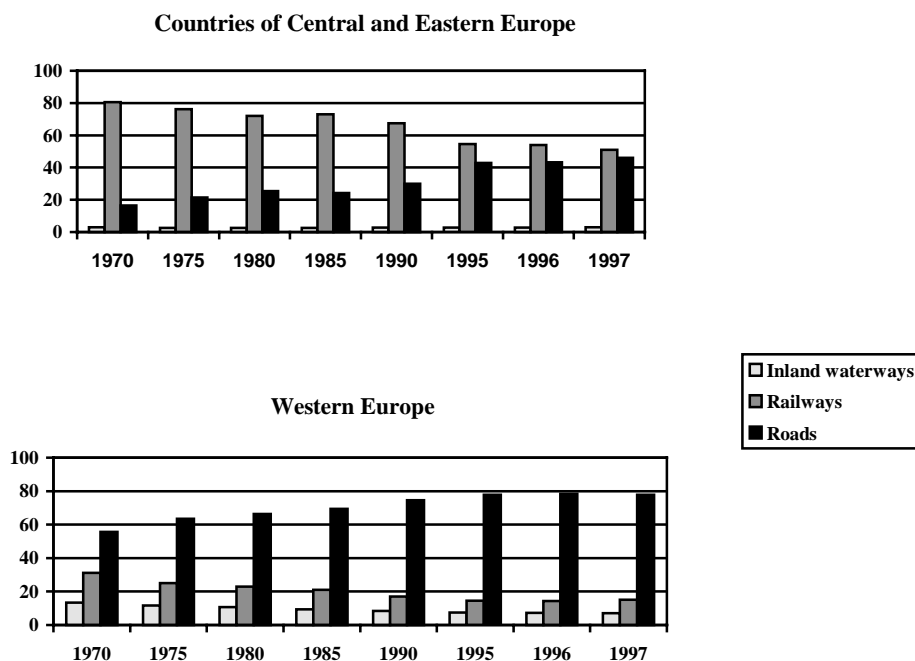
These changes in traffic have resulted in a significant change in modal split in CEECs and Baltic States as is shown in the charts below.

The chart emphasises the difference in modal split between Eastern and Western Europe. Rail traffic in Western Europe accounts for only 15% of the freight market with the road mode now reaching almost 78%.

In contrast to the CEECs, developments in the CIS for both road and rail show that both have had significant declines in activity, though road transport declined slightly less. In 1997, road transport showed a slight increase for the first time while rail traffic continued to decline. Overall in this area, modal split is characterized by a domination of railways for surface transport. Rail share has slipped

slightly from 90% in 1990 to 88.3% in 1997. This data may indicate the extent to which economic reform and the introduction of market mechanisms have been delayed in some of these countries, since modal split remains heavily influenced by the pre-transition system of organization where railways were the priority mode for goods transport.

Figure 4. **Freight transport – Changes in modal split**



Source: ECMT, 1999.

To conclude, railway companies in transition countries have been heavily hit by economic difficulties and by the structural changes in industry, which have led to less movement of heavy goods (minerals and coal). They have also borne the consequences of the changes in the structure of trade previously dominated by high volume transport with the former Soviet Union. More adapted to the new economic structure, freed from the constraints of central planning and given new dynamism by the emergence of private companies, road transport has better resisted the spectacular falls in volumes seen by its competitors and will most likely see its advantages reinforced as the economies begin to pick up.

### 3.3 A collapse in public passenger transport

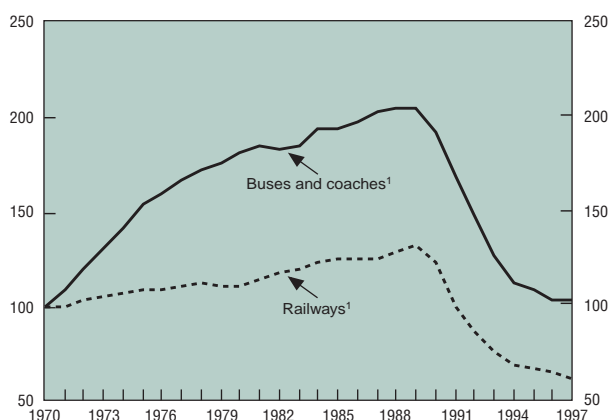
Even if available statistics do not allow precise indications of trends in private car use, there is no doubt that traffic has grown substantially in recent years. Some estimates put the increase in car kilometres at 50% in CEECs between 1993 and 1997. Data on the vehicle fleet confirm that the rate of car ownership is growing rapidly and exceeds 200 and even 300 per 1000 people in several CEECs and in some Baltic States. In contrast, this rate is hardly at 100 vehicles per 1000 inhabitants in the more advanced CIS countries and is much less in the others. This development has a high cost in terms



of accidents: since 1988 the number of people killed in road accidents in the CEECs and the Baltic countries has increased by almost a third.

Available statistics clearly point to a dramatic decline in passenger transport by rail, coach, and bus. Since 1989, traffic has fallen by more than 50% in CEECs and CIS. This tendency is explained in the first instance by reduced household income, which puts a brake on mobility in general, as well as by sharp increases in public transport following reductions in subsidies to public transport companies. Clearly, too, competition from the private car has had an important effect.

Figure 5.  
**PASSENGER TRANSPORT TRENDS**  
**IN EASTERN EUROPE AND THE BALTIC STATES**  
 (passenger-kilometres)  
 1970 = 100



1. 14 countries: AL, BG, BIH, CZ, EST, H, HR, LT, LV, MK, PL, RO, SK, SLO.

Source: ECMT, 1999.

#### 4. INVESTMENT TRENDS AND INFRASTRUCTURE NEEDS

This section reviews some of the conclusions contained in the document entitled “Report on Trends in Investment in Transport Infrastructure Over the Period 1985-1995” [CEMT/CM(98)6], presented to the 1998 ECMT Council of Ministers in Copenhagen.

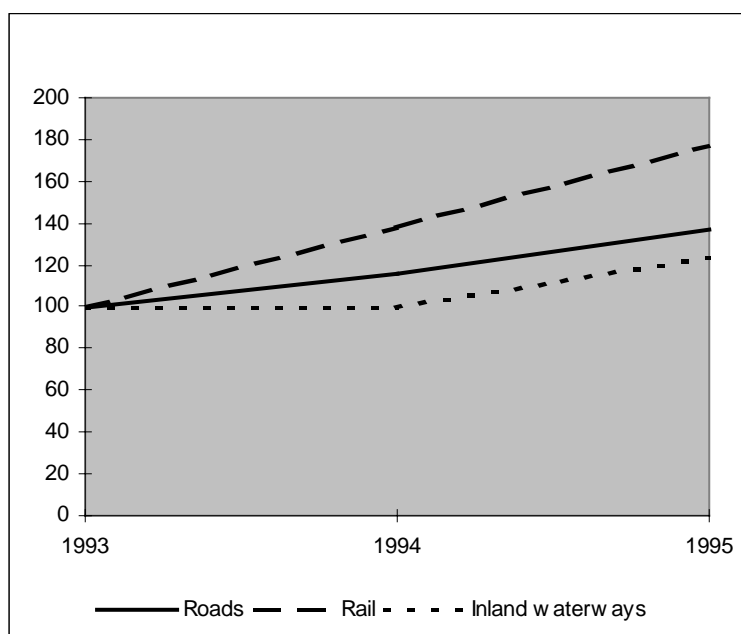
Data on infrastructure investment in Central and Eastern Europe are not sufficiently developed to allow long term analysis of the situation. Nevertheless, comparative data are available for the period 1993-1995. (No data are yet available for CIS.)

#### 4.1 Investment is increasing but is still not enough

Between 1993 and 1995 investment in inland transport in CEECs increased 48%. In this respect, the following points should be noted

- The share of GDP given to transport investment (around 1% in 1995) is comparable to that in Western countries. However, it is doubtful if this is sufficient to bring infrastructure up to required levels since existing infrastructure has severe deficiencies. This figure, moreover, is at the minimum end of the scale (1-2%) recommended by Ministers in Berlin in 1997.
- Even though it is increasing, the share of total investment given to transport infrastructure in CEECs (at 4.2%) remains less than the corresponding figure in the West (5.9%). This shows the difficulty in obtaining priority for transport investment in national budgets.
- After the traffic collapse in the early 1990's, there is now significant traffic growth, especially for roads.
- Investments by mode show that rail increased by 77%, road by 36.5% and waterways by 23%.
- There are very significant differences between countries and some countries have made very strenuous efforts to improve their infrastructure, reaching investment levels that are higher than the targets set out by Ministers.

Figure 6. **Investment in transport infrastructure in new ECMT Member countries**



Source: ECMT, 1999.

#### 4.2 Maintenance expenditures significantly down

Maintenance on roads fell 14% and on rail by 2%. This is especially problematic for roads, as traffic of goods vehicles increased 30% in the period. The tendency here must be a cause for concern for decision-makers.

### **4.3 Prospects uncertain**

The Crete and Helsinki corridors set out the framework for future international networks. The cost of completing these corridors is out of reach in CEECs for the medium term. The new ISPA fund for EU accession countries will provide very valuable improvements to the infrastructure over the next decade. But it is still clear that needs far exceed the sums available. Difficult choices of priority have to be made. Efforts to mobilize private funds are required and a higher share of national resources will have to be sought for transport investment.

## **5. OBSTACLES TO MORE EFFICIENT TRANSPORT**

The reports cited above (ECMT 1995, PHARE 1998) listed legal, financial, practical, commercial and other obstacles to integration facing operators from CEECs and Western Europe. These obstacles vary between modes and countries. Several arise at national level, e.g. difficulties in setting up or running a business, and problems in obtaining loans or due to very high interest rates. Others may arise at international level due to inexperience in developing international contacts and through lack of knowledge of international rules and regulations. Others, cited frequently for the railways, include difficulties in adapting to customer demands, weak information exchange processes and unstandardised documentation. These kinds of commercial and practical barriers are gradually disappearing for a number of reasons. One is that the general economic situation is improving in CEE countries and the national financial and policy framework is becoming more solidly founded. Another is that companies from CEE are gradually adopting commercial, practical and business approaches that are similar to those in other ECMT countries, including through mergers or partnerships with established Western firms. A third is that training and reorienting of the business education system are also contributing to the development of entrepreneurial talent and business skills.

At international level where governments are implicated, various difficulties have been cited: the shortage of permits for road transport, difficulties in obtaining visas for drivers, border crossing difficulties and traffic bans. Several of these have been or are being tackled, either in ECMT or in other international organisations. The specific issue of border crossings is dealt with in Chapter IV. A recommendation has been made for visa, the quota has been increased, and a Resolution on Crime has been adopted.

In summary, while there are many remaining obstacles of a practical, commercial or administrative kind, they are gradually being reduced.

## **6. MODAL ISSUES**

The main problems raised here are being dealt with in more detail in the ECMT working groups and it is the intention here to give only some broad indications of the main issues.

### **6.1 Road**

Road transport is a complex and often controversial topic. On one side, the inexorable growth in road transport poses severe environmental and infrastructure problems for some countries; at the same time, for many, road transport is the most efficient means to serve markets.

Obtaining international agreement on road transport issues is and will remain difficult due to these considerations. The approach, as far as ECMT is concerned, has been summed up in various resolutions where a balanced approach to opening markets through increasing the multilateral quota is combined with progress on environmental, safety, and increasingly social and fiscal harmonisation.

Progress towards more open markets could be aided by further increasing the multilateral quota based on the highest safety and environmental levels. Furthermore, the evidence shows that the ECMT multilateral liberalisation of the transport market and the elimination of competitive distortions that might undermine that liberalisation are closely related issues. In that sense, future increases in the ECMT quota will, in one way or another, be directly linked to closer harmonisation of the conditions of competition between hauliers from different Member countries.

In this context, particular attention must be given to social conditions in international road transport. Social harmonisation does not consist only of common definitions applied in each Member country but also the introduction and implementation of quality licensing standards at national level, allowing an harmonisation of the conditions of access to the profession. In this respect, one should sooner or later discuss the issue of road cabotage, even if it is politically sensitive.

Without questioning the grounds for bilateral agreements, one should admit that a multilateral approach would favour the opening of markets. Therefore, multilateral agreements on specific subjects are preferable to multiple bilateral agreements.

Lastly, multiplicity of taxes and charges remains a problem. As a first step towards more fiscal harmonisation countries should comply with the principle of non-discrimination between road haulage operators who are nationals of an ECMT Member country.

### **6.2 Rail**

Integration of freight transport is currently the top priority in the work of the ECMT Group on Railways, which is preparing a report on regulatory reform in rail freight markets for discussion by Ministers in 2000. Over many years the ECMT Council has supported the efforts of the European Union to foster the development of more integrated rail markets, notably by extending provisions of EU directives 91/440/EEC, 95/18/EC and 95/19/EC to all ECMT Member countries in Resolutions 93/6 and 95/3. In 1998 the European Commission presented proposals for Directives on access to railway infrastructure and charges for the use of infrastructure and it will present proposals on interoperability and other issues related to integration in the course of 1999. In conjunction with its

regulatory reform work, ECMT is examining these proposals with a view to possibly using Resolutions to apply relevant parts of Directives eventually adopted to all Member countries.

Providing rights of access to railway infrastructure is a key part of the European Union's approach to the integration of rail markets. The main purpose is to introduce competition into the operation of rail services in order to provide pressure to improve services and reduce costs. Administered access rights is seen as the most effective route to introducing such competitive pressures within the Union. The extent to which this route can be developed in other Member countries will be examined in the report on regulatory reform.

The most fundamental aspect of ECMT and EU agreements on railway reform is the promotion of commercial management freedom for rail companies. Freedom to make operational and investment decisions on a commercial basis is essential to fostering efficiency. Management independence must therefore be guaranteed to the greatest possible extent including in the field of international operations. Trans-national operating companies will become an increasingly important feature of the rail market. The development of such international commercial restructuring should be welcomed, subject to adequate anti-trust regulation.

Infrastructure management has been separated from operations for accounting purposes and the separation is to be taken further in the European Union if current proposals are adopted. Community instruments have not so far sought to introduce competition in the management of rail infrastructure and in a majority of ECMT Member countries infrastructure is managed by a government agency. Co-operation between infrastructure managers is essential for the provision of international services and should be encouraged to develop to the fullest extent possible. This should be on a commercial basis, but as governments in most Member countries influence the management of infrastructure to a significantly greater degree than operations, co-operation may take different forms than in the case of operators.

### **6.3 Waterway Transport**

In the past, the Rhine and Danube rivers and their tributaries formed the core of the international waterway system but natural barriers prevented the networks from communicating with one another. However, the opening of the Rhine-Main-Danube canal in 1992 and the enlargement of ECMT to include territories as far as the Caspian Sea provides a new perspective and an opportunity to transform the conditions of use of inland waterways across Europe. In this new context, it might be useful to study the operational framework for performing inland navigation and in particular the different regimes in Europe for the Rhine, the Danube and the Russian waterway system. At a recent Round Table (No. 108) on this topic, there was a strong appeal to take this up in an ECMT context.

### **6.4 Combined and Multimodal Transport**

As ECMT work on combined transport shows, there is a number of barriers to the development of combined transport in CEE countries, including the lack of financial resources to invest in specialised equipment and terminals. Other factors are also important including the structure of charges in road transport, and the attitudes and practices of railway companies.

Combined transport is particularly sensitive to cost and price variations, as the co-operating modes are also competitors. Combined transport is also affected by the numerous interventions in the delivery chain, which reduce the quality of service. Most of the recommendations drawn up in

previous ECMT reports and resolutions on the promotion of combined transport are still relevant and must be applied with greater rigour, in particular those contained in Resolution No. 94/6 adopted in Annecy in May 1994 and also in Resolution 97/6 adopted in Berlin in April 1997, and in report CEMT/CM(98)15/Final in Copenhagen in May 1998. The development of combined transport needs the political support and commitment expressed in the ECMT resolutions mentioned, but also, the practical and financial implications have to be adequately addressed. A broader approach in ECMT, encompassing short-sea shipping, inter-modal ports and waterways, as well as combined transport using railways could contribute to deepening the understanding and practical impact of existing policy recommendations.

## **7. DIRECTIONS FOR FURTHER WORK**

Integration is a broad topic and work on it long-term in nature. Several items of ongoing work are relevant. These include work on legal harmonisation, the removal of barriers to efficient operation, improved infrastructure, and regulatory reform. Concrete efforts have been made to implement several of the specific recommendations in the Resolution of 1995. Some of the other recommendations are of a more general character and it is difficult to assess progress precisely.

ECMT will continue contributing to international work in all the areas listed. In addition, efforts to integrate markets can be supported by:

- Data collection and market monitoring  
Published economic and transport trends (as cited in section 2) provide indicators on different aspects of integration. More up to date market monitoring can provide earlier indicators for policy makers. ECMT has just begun to provide some short-term indicators and the further development of these could be useful. Initial results are available on the Internet site under <http://www.oecd.org/cem/stat/conjonct/index.htm>
- Policy reviews  
As indicated, the ECMT and PHARE studies identified many barriers and problems facing the sector. Though there are many common difficulties, they vary between countries and these regional reports did not identify which countries had which particular problems. Therefore, to be of concrete help in the future, such studies need to be more specific. The most useful way to do this is to carry out reviews at individual country level.
- Share experiences of new EU members  
Providing reports on the experiences of the countries involved in previous enlargements of the EU with information on the adaptation, and practical integration of their transport markets and systems into those of the EU, could be very useful for the countries preparing for the next round of enlargement.

## **8. CONCLUSIONS**

In the longer term, the objective must be to achieve an integrated European wide market for goods and services. Transport will be essential to this process but an efficient, sustainable system will take time to develop. In the short term, specific work within ECMT to reduce obstacles to international transport should continue at the same time as continued efforts to improve market access in a balanced, harmonised way.





*Chapter II*

**PAN-EUROPEAN PROCESS OF LEGAL  
HARMONISATION AND ADJUSTMENT OF  
TRANSPORT SYSTEMS**



## 1. INTRODUCTION

Individual freedoms (political, economic, and cultural) are being extended and developed across Europe and at the same time economic activity becomes global. These developments cause great demand for transport services and necessitate a European transport system that facilitates the movement of persons and goods. This system should no longer be a combination of different national systems and must be functionally homogeneous. In order to guarantee safety, efficiency of movement, consumer protection, as well as effective structures and suitable working conditions, the best models and solutions should be promoted. This should apply for physical elements of the transport system, for the rules and regulations governing the transport enterprises and public control bodies, as well as for relations between the public authorities and the enterprises.

International transport in Europe is subject to numerous norms included in conventions, as well as international and intergovernmental agreements and sectoral and regional arrangements. A particularly important role is played by conventions developed within the UN/ECE structures, (e.g. on main infrastructure networks in road, rail, combined, inland waterways) and those on maritime transport and on protection of maritime environment, as well as the Regulations concerning technical standards for different means of transport. In Europe, a legal system of a specific character has also been created, that is the system of European Union law. EU Member countries have a comprehensive system of legal regulations for the areas where national law did not provide sufficient integration instruments.

The development of the system of legal regulations at the European level contributes to intensifying the integration process of transport systems. The transportation techniques being employed today have less of a specific national character, and are to a greater extent based on unified norms and standards. The rules concerning the functioning of transport enterprises, working conditions for drivers and crews, administrative and control procedures are all increasingly being made similar or even unified. Also the need for transport policy convergence, as well as co-ordination and alignment of transport infrastructure development in a broader context is widely accepted, with the inclusion into the process of different national entities and organisations as well as international institutions.

There remain, however, certain problems to be solved, including how to more effectively influence the evolution of transport economic structures to lead to an increase of the role of public transport and a reduction in the ecological burden of the rapidly growing road and air transport sectors. There are also issues which depend on the results of the operators' activity on the transport markets but which are difficult to regulate. Still, they influence the economic condition of the enterprises, the competitiveness of transport and also the working conditions of the employees in the sector.

One of the objectives of the European Conference of Ministers of Transport, having a pan-European character and bringing together almost all European countries, is to *“institute a procedure whereby effective steps can be taken to co-ordinate and rationalise European inland*

*transport of international importance*”<sup>1</sup>. For over 40 years, and with particular intensity and broad geographical scope since the early 90’s, ECMT has been aiming at bringing the transport systems and legal regulations of its member countries closer together. One example is in the activity of the ECMT Working Group on Integration of New Member States where information is exchanged on the legislative transport policy changes of countries participating in the Group, including European Union Member countries. The need to harmonise laws and regulations is also included in many Resolutions and Recommendations adopted by the ECMT Council of Ministers.

## **2. INVOLVEMENT OF EUROPEAN STATES IN THE INTEGRATION PROCESS IN THE TRANSPORT SECTOR**

Historical, political and economic circumstances of the last 50 years in Europe meant that the integration processes took different forms and were undertaken in different fora. In the UN Economic Commission for Europe a range of international legal instruments and standards was discussed and adopted, which allowed some approximation of transport systems in Europe, even before the political changes of the 90’s occurred. Another form of integration, involving - among others - creation of supranational legal regulations (and administrating the common budget), is that within the European Union. After 40 years of existence the Union in today's form has become the basic driving force of the European integration process, due to its economic power, the existence of a tested model of a common market and a good balance between supranational and traditional national structures. Among the ECMT Member countries, 4 groups with different levels of transport development and interest towards harmonisation or approximation of national transport legislation with the EU *acquis communautaire* can be distinguished:

1. European Union - 15 Member countries.
2. European Free Trade Association (EFTA) (Switzerland, Norway, Iceland) - of which Norway and Iceland are covered by the Agreement with the EU on European Economic Area (EEA).
3. Central and Eastern European countries associated with the EU, already negotiating their membership in the Union - 5 Member countries (Czech Republic, Estonia, Poland, Slovenia and Hungary - so called CEEC-I) and the other Central and Eastern European countries associated with the EU - 5 Member countries (Bulgaria, Latvia, Lithuania, Romania, Slovak Republic - the so called CEEC-II); an Association Agreement has also been concluded between the EU and Turkey.
4. Other European countries (including the Caucasian region) - 10 countries (Albania, Azerbaijan, Belarus, Bosnia-Herzegovina, Croatia, F.Y.R.O.M, Georgia, Moldova, Russian Federation, Ukraine); some, like Russia or Ukraine, have also concluded Agreements on Co-operation and Partnership with the EU.

The 15 EU Member Countries by definition are obliged to harmonise their legal systems in the transport field. The EFTA states in the framework of the EEA also agreed to implement a substantial

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1. *Protocol of the European Conference of Ministers of Transport.*

part of the EU legal system, and as far as transport is concerned only some problems connected with applying the EU *acquis* remained to be solved in areas such as transit or control of traffic.

Since the early 90's Central and Eastern European countries ("Group 3") have been increasingly interested in integrating transport and in approximating legal regulations with the European ones. The EU met those interests by providing technical support inter alia through the PHARE programme for the "Group 3" countries and TACIS programme for some of the "Group 4" countries.

The procedures and decision-making structures in individual interested countries from Central and Eastern Europe to prepare transport for the subsequent phases of spatial enlargement of the EU are adapted to the different socio-economic situations in these countries.

ECMT countries belonging to "Group 4" also attach great importance to co-operation with the European Union, particularly in matters concerning implementation and observance of transparent rules in mutual relations, policy convergence, infrastructure investment co-ordination, etc. In the Agreements on Partnership and Co-operation, which have been concluded between the EU and some of these countries, some provisions on co-operation, and gradual liberalisation of transport market access and adjustment of transport systems and procedures are included. In 1998, in the framework of the EU programme – RETRAEST, an assessment of possibilities for co-operation with Russia was undertaken, particularly in the field of employing satellite technology in vehicle traffic management and unifying the technical standards and safety rules in transport. Transport policy documents of some of the "Group 4" countries explicitly envisage harmonisation of the national transport system with the international ones.

In the European countries not associated with the EU, with the role also of a transport bridge between the expanding European Union and the Far and Middle East, the transport corridors running through their territories constitute an important integration element (the eastern part of Corridors 2, 3 and 5, middle part of Corridor 7, western part of Corridor 8, eastern and northern part of Corridor 9 and Corridor 10). The different regional initiatives being undertaken in this region also play an important role in the process. All this contributes to the creation of favourable conditions in this part of Europe for pan-European transport integration in the future.

It should finally be noted that all European countries subscribed to the Declaration adopted at the Third Pan-European Transport Conference, which was held in Helsinki 23-25 June 1997. This Declaration sets forth the framework for a pan-European transport policy, compatible with the broad principals of the common transport policy, the key elements of which are divided into three main parts: objectives, principles and means. The final section of this Declaration gives mandate, notably to the European Union, ECMT and the UN-ECE to monitor and review the effective implementation of the various provisions contained in this document. As of Autumn 1998, the ECMT Secretariat launched a survey designed to review the situation in countries not implicated in the "pre-accession" process, specifically ECMT Member countries belonging to "Group 4".

Considering the work already undertaken by the Commission with regard to infrastructure, this survey is focusing on means for action pertaining to the regulatory framework of the transport sector, while highlighting in particular the tangible results obtained to date, the work and procedures in progress, and the real prospects for the future in the medium term, as well as noting the main difficulties encountered.

### 3. PROGRESS IN THE ECMT COUNTRIES IN HARMONISING AND APPROXIMATING THEIR NATIONAL LEGISLATION WITH EU LAW

Transport is, potentially, an economic sector that should facilitate the European integration. The CEE countries have already - for a long time - attached great importance to the development of international transport as an important sector needed to develop international trade. In order to be able to perform international transport, these countries had to comply with the international transport law norms to the fullest extent possible (norms provided for in multilateral and bilateral Agreements and Understandings as well as UN/ECE Agreements and Conventions).

The knowledge as regards the actual state of approximation and practical implementation of European Community law in the transport sectors of non-accession countries is fragmentary. Answers to an ECMT questionnaire on the subject, sent to ECMT Member countries associated with the EU, allow some rough estimation to be made.

In rough estimates obtained from the ECMT questionnaire, 5 of the 10 countries say that the actual state of approximation of national transport law with the European Community transport legislation exceeds 50% in the CEEC-I and CEEC-II countries. The other 5 say that the proportion is between 30% and 50%.

There is a higher degree of law harmonisation in the field of international transport; the greatest inadequacies are for the legal regulations constituting the basic instruments of liberalising market access and fair competition rules in the transport sector.

The review of the adjustment towards EU standards indicates that the most difficult legislative problems are those connected with new legal regulations involving substantial additional investment expenditures or increases in operating costs, as well as major changes in the structure and level of employment, or changes of working conditions in the transport sector. For instance a rapid alignment of national standards with the newest EU Directives on weights and dimensions of vehicles as concerns the allowable axle load of 115 kN is not possible in view of the very high investment expenditures necessary for reinforcement of the surfaces of main public roads to make them suitable to carry such axle loads. Implementation in the CEECs of EU Regulation 3820/85 concerning among other issues the work-time and resting time for drivers of heavy vehicles may cause similar problems in professional circles. The implementation of more stringent technical and safety norms for the means of transport – in view of protection of the labour market – may have an economic impact on transport operators, also due to the fact that the fleet, not complying with the new norms, would have to be withdrawn.

Difficulties to harmonise national legislation with the *acquis communautaire* in the CEECs are experienced due to the large number of EU transport acts coming into force (up to 1998 - 309 acts of which 194 are Directives). This number includes numerous detailed provisions concerning technical elements and features of road vehicles. Even the translation of the many legal acts into the national languages is in itself a very demanding task.

In the ECMT non-accession countries (Group 4), obligations for harmonisation and approximation of their national legislation follow from their contractual agreements with the EU. However, progress in this respect will depend first of all on the political will of those countries for such harmonisation and approximation activities. What seems to be more important at the moment for those countries is transport policy convergence and work on common standards only in selected fields of the sector.

#### **4. ECMT'S ROLE IN PROVIDING POLITICAL SUPPORT FOR TRANSPORT LAW HARMONISATION AND APPROXIMATION PROCESS IN EUROPE**

Advancing the process of transport law approximation for the widest possible group of European countries is of importance for the ECMT Member countries. EU *acquis communautaire* – as the regulatory basis for the transport system in a very large part of Europe, and as an instrument that increases the efficiency, safety and effectiveness of transport, constitutes a good framework for the integration of the transport sector.

In addition to the traditional work of providing a political framework for achieving policy convergence, the ECMT is and could still be a very useful forum for disseminating information on the legislative changes in its Member countries and the EU, as well as the experience of the ECMT countries that recently became members of the European Union or concluded Association Agreements in order to prepare themselves for the EU membership. The ECMT Working Group on Integration of New Member Countries reviews the main lines of transport policies of the new ECMT Member countries.

Existing contractual arrangements with the EU provide for exchange of information and consultations thereby ensuring better co-ordination of legislative plans, taking into account the newest EU regulations while drafting national legislation. The ECMT can provide an additional forum for the non-EU countries to get acquainted with the main direction of changes in the existing *acquis communautaire*. In this way, the other countries could introduce provisions, which would be well co-ordinated with the regulations created especially by their neighbours.

The ECMT Transport Ministers, expressing political support for transport law harmonisation and transport system approximation in Europe, can use the ECMT forum for an exchange of views on these issues. It should be particularly useful to present the directions of legislative change taking place in the European Union, which would give an opportunity to the other countries to plan in the long term their transport policies and also to draft in advance the changes to their national legislation. The impact of EU legislative changes on countries which are neither EU members nor EU applicants could also be discussed. All this could contribute to a more effective co-ordination of legislative activities in Europe, resulting in efficient integration of the transport system at a European level.

## **RECOMMENDATIONS ON THE PAN-EUROPEAN PROCESS OF LEGAL HARMONISATION AND ADJUSTMENT OF TRANSPORT SYSTEMS**

The ECMT Council of Ministers of Transport, meeting in Warsaw on 19 and 20 May 1999:

### **RECOGNISING**

- the changing context for European transport resulting from the expansion of ECMT's membership and the prospect of further enlargement of the EU;

### **NOTING**

- the ECMT's valuable role in contributing to policy convergence and in particular its role in providing political support for harmonisation and approximation of transport legislation in Europe;

### **EXPRESSING**

- political support for the process of harmonisation of transport legislation and adjustment of transport systems in Europe;

### **SUPPORTING**

- the efforts of the ECMT new Member countries in approximation of their transport legislation with the international standards and in particular with those of UN/ECE and EU;

### **RECOMMENDS:**

- continued close co-operation between ECMT, EU and UN/ECE to exchange information on proposed changes in transport legislation;
- that ECMT Member countries, in introducing new legislation, take into account its consistency with existing EU and UN/ECE legal instruments and ECMT Resolutions;
- that ECMT regularly reviews progress on legal harmonisation and adjustment of transport systems in ECMT new Member countries;

### **INSTRUCTS**

- the Committee of Deputies to monitor the implementation of the provisions of this Recommendation.



*Chapter III*

**EMERGING TRADE AND TRANSPORT LINKS  
BETWEEN EUROPE AND ASIA**



## BACKGROUND

The three papers in this chapter are intended to contribute to obtaining a better understanding of the consequences for transport in the Black Sea region of the growth and development of new or radically altered trade patterns in and between Europe and Asia. They are among the papers presented to an ECMT Seminar in Antalya, Turkey (October 1998). Other papers can be found on ECMT's web site.

### A. REGIONAL FLOWS: NEW ORIENTATIONS IN A CONTEXT OF GLOBALISATION AND THE OPENING OF EUROPE

*Mr. Christian Reynaud, INRETS, France*

Globalisation, the growth of trade on the world scale, is now a well-known feature of the end of this century. It has implications for transport flows, but transport cannot escape the physical constraints imposed by geography, or the institutional divisions which affect in particular the construction of infrastructures and the organisation of the sector.

Within a “world economy<sup>1</sup>” there are regional groupings at work, creating special links between countries and often representing a first step towards greater openness: there are examples in North America, Central Asia, South East Asia, Latin America, West Africa and of course Europe. The most structured of these regional organisations is the European Union, whose ambitions are not limited to free trade, but is creating a new type of institution with development and cohesion objectives: it is an original structure which finds itself faced today with the twins problems of broadening (from 15 to 25 members in the space of a few years) and deepening (application of the Treaties of Maastricht and Amsterdam). A transport infrastructure policy embracing TENs (Trans-European Networks), priority corridors (10 priority corridors), and now PETRAs (the Priority Transport Areas of the Helsinki Conference) reflect its policy objectives in the European space and its extensions.

However the study of the outlook for transport cannot be limited to these global phenomena of internationalisation, even if a clear distinction is made between “globalisation” and “European integration”. Without recalling by contrast all the studies which oppose “global and local” and which concern local transport and the social relations between individuals in a town, the importance of trade at an intermediate level between neighbouring countries should not be under-estimated. It is on this

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1. A situation which is by no means new in itself when we consider the history of trade, but its manifestations and logics have taken on different forms

point that this communication concentrates in discussing regional flows. The performance of world transport, with door-to-door transport of containers over distances of thousands of kilometres for just \$1 000 must not make us forget the transport needs of trade between countries, over shorter distances, within regional spaces which are not necessarily measured on a continental scale. Regional working groups have already been set up to identify their own needs. They concern the Baltic region, the Central European region covering the countries of the Visegrad group, the Adriatic and Balkan region, the Black Sea region, the Western Mediterranean region and the Middle East.

The aim of this document is to highlight these regional logics embedded in a context of international opening up. The case of the Eastern Mediterranean will be discussed in some depth, because this area has always been a special case, being the interface of three continents and always having great difficulty in constructing appropriate institutional frameworks for co-operation.

## **1. THE CONTEXT OF SHARPLY INCREASED GLOBALISATION AND EUROPEAN OPENNESS**

The sharp increases in the globalisation of economies and in European openness do not have the same origins or the same consequences. They have been grouped together here solely because they go beyond the regional framework, bearing in mind that in the case of European opening, dialogues are established with a view to customs union policies, bilateral co-operation, and possible integration.

### **1.1 The growth of international flows and the broad transport trends**

There are several broad background trends:

- a) *The growth of long-distance international flows at a rate often higher than that of domestic flows.*

In freight transport this concerns:

- industrial products carried long distances by land transport or shipped in containers transiting the big ports whose hinterlands are covering ever larger multinational areas;
- specific raw material traffics (different bulk inputs), energy products (and in particular oil): the patterns of these flows are changing too, sometimes overnight as in the case of the disappearance of COMECON, and today the geography of oil production appears more open than ever, with consequences for land and sea transport (construction of pipelines and new terminals);
- lastly, particular traffics such as food products, heavy goods and higher value-added products, using all modes including air transport, with special packaging.

In the case of passenger transport, it certainly concerns business travel, but above all leisure travel. Falling air fares has made it possible for people to reach distant destinations which are also changing as new opportunities open up. Migrations generate regular flows of international travellers.

b) *The liberalisation of transport which has been rapid over the past ten years in the European Union, with the elimination of obligatory tariffs and quotas.*

Liberalisation is also proceeding apace in many other countries within which international transport is often a dynamic sector of the transport market.

However, this liberalisation cannot continue and broaden without the parallel development of a harmonisation policy: harmonisation of technical standards to ensure the continuity of transport chains with the Central European and Mediterranean countries, and harmonisation of working conditions to ensure social progress within a fiercely competitive transport sector.

The accent is now placed on the facilitation of frontier crossings, all the more so because the number of economic partners is increasing and the size of many countries is reduced as a result of the collapse of the communist bloc and the birth of new countries in Central Europe and the Balkans.

c) *Far-reaching reorganisation of transport and of distribution circuits.*

Here there are several phenomena at work, all with consequences for transport flows:

- Changes in industrial logistics in parallel with the specialisation of production units, creating ever more stringent service quality requirements (reliability and rapidity, often at an unchanged price);
- Changes in the distribution patterns and the multiplication of international logistics centres which often result in longer transport distances. However, in certain countries of Central Europe, Central Asia and the Mediterranean, the introduction of greater economic rationality in the management of flows was long neglected in a context of obligatory distribution of production. Several studies have drawn attention to the apparent “over-consumption” of transport in many countries: the number of tonne-kilometres per unit of value added reaching levels several times the European Union average;
- changes in transport organisation with the appearance of intercontinental hubs for the sea and air transport and the development of logistics centres.

The main port hubs are located in Northern Europe, but there are more recently established ones in the Mediterranean, close to Gibraltar in the west and the Suez Canal in the east, and also in the centre (Malta and Southern Italy).

In air transport the main hubs remain in the European Union, but regional specialisations are appearing in the Mediterranean and in Central Europe.

The development of logistics centres, terminals for bulking and breaking bulk, is proceeding more slowly on the periphery of the European Union, but the development of international transport and the thrust in favour of intermodal transport is encouraging it. The need to organise distribution transport in urban areas will go in the same direction in the years to come.

## **1.2 Common trends but different contexts**

Within the European space and in the countries which surround it there are different levels of development, with:

- European Union countries, which have reached a high level of development, though there remain substantial disparities between the North and the South, between the new German Länder and the old. Joining the European Union has always been marked by a phase of intensified trade with the other member countries, as shown by the examples of Spain, Portugal, Greece and also the United Kingdom; the share of trade with the European Union rose from 30 to 40% to often more than 60%.
- Central European countries, which have started to enjoy significant growth rates in recent years; their growth outlook lies in the range of 3 to 6%, with consequences for transport. The reorientation of their foreign trade patterns was particularly marked in the early 90s and their renewed growth was accompanied by at least equally rapid opening up to the outside world.
- Countries more distant from the Centre of Europe:
  - The Baltic States, which are also enjoying good growth rates and are preparing to take an integration path similar to that of the Central and Eastern European countries;
  - The countries of the former Soviet Union, where we have to single out Ukraine and Belarus, neighbours of the Central and Eastern European countries, whose economies seem to be stabilising but where great uncertainties remain;
  - The countries of the Balkans, where the political context often remains uncertain, but which are nevertheless entering a process of internationalisation of trade;
  - The Central Asian countries, whose relations with Europe should not be underestimated; their economic restructuring is still in the early stages, but their potentials and their historic links make it necessary to include them in any analysis which extends from Central Europe and the Eastern Mediterranean
  - the Mediterranean countries, with often very high demographic growth and sharply contrasting levels of economic development, several countries having very low levels of per capita income.

The purpose of this brief survey is simply to show that while the internationalisation of trade is a well-known phenomenon, the baseline levels, the needs and the prospects are not at all the same.

Similarly, the industrial structures vary enormously, mainly for two reasons:

- In certain countries the transition from a control economy to a market economy has not yet been completed;
- In other countries the degree of integration of branches of industry and the industrial structures vary greatly due to the very different levels of development.

This results in patterns of trade which are themselves very different, with more or less competing or complementary economies, depending on the sector.

Transport and logistic organisation reflect these disparities, and these general trends described above will still have specific manifestations in individual countries for many years to come. The challenge of the present period is thus to be able to take account of these disparities and to integrate them into long-term planning in order to achieve more harmonious development.

### 1.3 Infrastructure development: networks, corridors, PETRAs

Infrastructure development is often a piecemeal process resulting from the needs arising from the growth of international or transit traffic. In the growth phase of trade with the Middle East in the 70s and 80s, Turkey, in agreement with the neighbouring countries, organised a real plan for upgrading the road transport infrastructures. Attention should be drawn to the study of the TEM corridor embarked on a long time ago by the UN-ECE.

Within the communist bloc the rail network had been designed as a function of the specialisations assigned to each of the member countries and the carriage of raw materials over very long distances, which resulted in making these countries increasingly interdependent. Infrastructure development is now also part of the European Union logic of opening up.

This European Union policy does not stem from a simple logic of globalisation and liberalisation however. The introduction of arrangements aimed at achieving greater cohesion over a larger area will have direct consequences for transport: the new member countries will receive aid from structural funds and cohesion funds, and a substantial share of this aid will certainly be spent on infrastructures. For the other countries such operations form part of bilateral and multilateral co-operation policies, for example under MEDA programmes.

At present the components of this policy appear at several levels, which should be briefly recalled:

- Trans-European networks, henceforth more appropriately qualified as “intermodal” trans-European networks, including the nodal points constituted by ports and airports and the intermodal land transport logistics centres. In connection with these schemes there is a debate going on concerning proposals for infrastructure pricing: the use of infrastructures and their construction are no longer considered as being independent in a context in which the roles of the infrastructure manager and that of the operator are becoming clearer;
- The priority corridors, presented at the Crete Conference, confirmed and complemented at the Helsinki Conference, with in particular corridor X through former Yugoslavia;
- The priority transport areas (PETRAs) whose content remains to be defined;

These areas link land and sea transport ever more closely. In the Mediterranean area several transport zones are proposed:

- The Adriatic corridor which corresponds to fairly well identified sea transport functions parallel to the land routes. The aim here was not really to identify an economic subset of Adriatic countries.
- The Southern Mediterranean, covering the Maghreb, Egypt and the Middle East. It is difficult to identify this area with that of the Arab world. Another division appeared in the Commission’s communication to the Parliament on European policy in the Mediterranean which distinguishes between the Western Mediterranean and the Eastern Mediterranean. Work is being planned and meetings between ministers are held regularly in the Western Mediterranean;
- The Black Sea area is taking shape as an entity, with in particular the creation of an economic co-operation body (Black Sea Economic Co-operation) for the countries surrounding the Black Sea, in which Greece also participates
- The Barents Sea is a zone which has to confront the particular problems of the coastal countries here.

Lastly, it should be noted that in the maps produced in Helsinki there is a “TRACECA” corridor which extends eastwards beyond the Black Sea: this reflects the aim of developing relations between Europe and the Central Asian countries.

These regional transport approaches correspond more or less to economic realities and sometimes to the institutional realities of co-operation.

At this stage however we should also recall the importance of Europe’s foreign trade with all of these zones.

Within the European Union, intra-European trade general accounts for some two-thirds of member countries’ foreign trade: this percentage has grown strongly over the past thirty years. Then the United Kingdom, Greece, Ireland, Spain and Portugal joined, the European share of their trade grew very quickly and has already reached level of the founder countries.

The Central European countries are now reaching comparable percentages: the orientation of their foreign trade suddenly switched to the West with the collapse of the COMECON.

As far as the Mediterranean countries are concerned, their trade with Europe is extremely important to them: over 60% of total foreign trade for the Maghreb countries and often over 50% for the Eastern Mediterranean countries. Even if trade with these countries on the other hand represents only a very small percentage of European trade, these figures certainly justify planning transport systems that gradually extend to them from the European networks.

But such a vision must not be exclusive.

The intensification of flows on a more regional scale should thus be able to express itself in an appropriate transport context without for all that compromising insertion in larger spaces: this insertion certainly applies within the European area, but it can also be in the framework of other areas in a more multipolar view, possibly including relay zones for the continents of Asia and Africa.

## **2. THE REBIRTH AND RECOGNITION OF REGIONAL FLOWS**

The rebirth of regional flows is also a consequence of the opening of frontiers and the reshaping of geopolitical and geoeconomic space.

It can result in the development of transfrontier trade as seen in the European Union in the INTERREG programmes, which justify the introduction of transport. These substantial transfrontier flows also exist on the periphery of the European Union between Germany and Poland, Germany and the Czech and Slovak Republics, between Austria and Hungary, between Finland and the Baltic States, etc.

While this is so, the collapse of the communist bloc was also accompanied by the creation of new frontiers within the former Czechoslovakia, former Yugoslavia and even the former Soviet Union, initially causing a decline in flows between neighbouring regions, and sometimes even a sudden



complete cessation where the territorial reshaping has resulted in political tension or even conflict. The resulting situation is the appearance of a greater number of countries and hence the need for increased international co-operation to safeguard the logic of economic complementarity and in many cases to keep open the possibilities for transit.

The following analysis is concerned not so much with regions situated within countries but rather with relations between neighbouring countries.

## **2.1 The Baltic and the influence of the CIS**

The recent entry of Scandinavian countries into the European Union and the opening of Europe to the countries round the Baltic have restored the identity of this region. Work very early began on a Via Baltica, included in the group of priority corridors.

The infrastructure projects between Denmark and Sweden complete a complex which appears consistent from the transport standpoint, combining land transport and short-sea shipping. The region's commercial traditions and its experience in short-sea shipping create an entity, to the North the role of Finland which cannot neglect its links with the neighbouring Russian republics, and to the South a Polish economic dynamism providing a link with Germany and Europe. The Baltic States have rapidly become part of this trend in the Baltic region.

However, this identity cannot ignore the neighbouring Russian republics whose access to the sea is limited, even if the future of these relations remains difficult to foresee. Russian East-West transit is dominant through the Lithuanian network. On Russian territory, Saint-Petersburg is a major outlet for the Russian economy. The negotiations leading to the establishment of the "Via Baltica" have recalled these realities, and different scenarios for the evolution of relations with the CIS will certainly be necessary for the study of the integration of the countries of this region within the European Union.

## **2.2 The Visegrad countries and Central Europe: a potential for trade to be developed between neighbouring countries**

As in the case of the Baltic States, the countries of Central Europe -- the Czech Republic and Slovakia, Poland, Hungary, Slovenia -- are likely to integrate rapidly with the European Union. They are situated close to the main European centres of activity, much less distant than the peripheral regions of the countries of the South of the European Union, such as Spain, Italy, Portugal and Greece.

However, trade between them is very limited, the reason for this being the sudden disappearance of COMECON, which made trade virtually impossible because it had to be paid for in convertible currencies. Hence a somewhat artificial situation which should sort itself out. Recent studies seem to show a potential for an increase in trade in the order of at least 30%. It should be noted that these countries already have a foreign trade structure very open to the European Union, which does not mean that this openness is likely to be reduced but rather that a rebalancing in favour of the neighbouring countries is very probable.

As regards transport policy, the co-ordination of infrastructures plans, promotion of intermodal transport and harmonisation of tariff policies are essential. These countries have substantial transit flows and their own foreign trade generally transits neighbouring countries anxious to limit the negative environmental impacts of transport.

### 2.3 The Western Mediterranean and the Middle East: revitalising regional trade

The flows in the Western Mediterranean are dominated by North-South trade, with substantial flows between Spain and Morocco, Italy and Tunisia, and with France being the privileged partner for the three Maghreb countries. By type of product, the European exports are mainly manufactures, capital goods and certain food products, while South-North trade is mainly in raw materials and intermediates. Recent trends are modifying this specialisation specific to countries with different levels of development however: the share of fresh food products and clothing is increasing in the South-North direction. International trade is often the vector for a more sophisticated logistic organisation, better integrated into the production and distribution processes.

However, trade between the countries of the South themselves is very limited and the initiatives of the Union du Maghreb Arabe (UMA) are not progressing.

The fact remains however that institutional co-operation has been instituted on the initiative of the countries of Southern Europe and the Maghreb in order to develop a vision of the future together (GTMO - Working Group of the Western Mediterranean).

In the framework of the INFRAMED project, which draws up scenarios for the future, two hypotheses are being studied:

- The first assumes the continuation of the present trend towards openness to constitute a free trade area without for all that neglecting the efforts to be made to better link the economies of the South to one another;
- The second assumes an intensification of regional trade in the South, based on transport policy to stimulate it.

In the Middle East too, in the framework of the peace process, the aim has been to re-establish relations between neighbouring countries through developing an appropriate transport policy. The definition of four priority corridors has been adopted by the four countries participating in the peace process in a format which would permit the entry of other partners: the co-operation between Egypt, Israel, Jordan and the Palestinian Authority is intended to be extended to Lebanon and Syria. This move was also intended to integrate short-term actions, ("fast track" projects), oriented towards longer term once the conflicts are over. The process is halted at present but certain components, such as the definition of transport strategies coherent with national plans, the creation of analysis and evaluation tools and, lastly, the definition of priority actions within multimodal corridors, including facilitation operations, could be revived once the political will is there again.

However, the Middle East question does not only concern the countries involved in the peace process, or even all the countries of the Eastern Mediterranean; extension towards the countries of the Persian Gulf and beyond to the Indian Ocean and relations with West Africa depend very much on it. In this region, in periods of political stability population movements can also facilitate the development of interdependence between economies. Such a situation is to be found in the whole Eastern Mediterranean area, where the opening of the eastern bloc and the former Soviet Union has give rise in both the North and the South to new movements of businessmen and workers, without all the tensions having been removed for all that.

## **2.4 The Eastern Mediterranean and the Black Sea: new neighbourly relations in an area of transition between Europe and Asia**

The Eastern Mediterranean has always been an area difficult to qualify. This is probably the reason why institutional frameworks have always had difficulty in getting themselves accepted.

The Eastern Mediterranean is in the first place a region of transit and interface. Land and sea routes have multiplied here between Europe and the Middle East, between Europe and Asia, and in the North-South direction between Russia and the Middle East or between the Black Sea and the Eastern Mediterranean.

But transit flows and the efforts made to establish networks by sea, rail or road through Turkey, are not enough to characterise the region. The important issues also include trade between the countries of the region themselves, in an area that includes the Balkans, the Black Sea countries and the Turkey-Iran axis, opening in turn on the Caucasus and Central Asia.

Thus we should note:

- a) First, the opening of the Balkans and the reestablishment of relations between the countries of former Yugoslavia, Turkey, Greece, Bulgaria, Romania; the corridor X is an expression of this which also fits into the national plans for trade between neighbouring countries;
- b) Second, the development of trade between the Black Sea countries, including Turkey and Greece which are helping to promote it.

In the East-West direction, co-operation around the Black Sea is triggering the creation of a Black Sea-Caspian Sea axis, permitting a link between Europe, Turkey and the newly independent countries of Central Asia.

- c) The opening of the Central Asian countries and the importance of the Caspian Sea.

Years ago already a regional entity between Europe and Asia was created, associating Turkey and Iran, the Economic Co-operation Organisation, which is now open to the countries of Central Asia. But it has always had difficulty in establishing real authority. In the time of the communist bloc its contacts to the North were limited and since the dislocation of the Soviet Union the tensions between Turkey and Iran have reduced its room for manoeuvre. Despite the weakness of its political legitimacy, it has had the merit of highlighting for many years the importance of transport.

Recently Europe has intervened to promote the TRACECA project of “the ancient silk route”: infrastructures, the facilitation of transport, operation and training are all included.

It is true that the oil resources of the Caspian Sea have aroused the interest of the big oil companies and the major powers: the United States, Russia and China on the world level, Turkey and Iran on the regional level. At present there are several possible routes for transporting oil to China, Iran and Pakistan, and above all to the Black Sea and the Mediterranean, by pipeline and by sea:

- Overland on Russian territory to the Black Sea with a possible relay, again by pipeline as far as Greece, thus avoiding any further risk of pollution in the Strait of Bosphorus;
- Overland on Turkish territory, more direct, from Azerbaijan to the Mediterranean.

But the exploitation of the oil resources is not the only thing involved. There is also a strong potential for trade between neighbouring countries that the expected oil revenues could rapidly stimulate. The rapid growth in trade between neighbouring countries already, in less than five years, confirms this. The dynamism of the Turkish migrants in this zone and the success they have had on Russian territory, in particular in the field of construction, are further indications.

The existing rail links, combined with sea transport across the Black Sea and the Caspian Sea, mean that there are now several possible routes, which explains much of the tension between the countries of the Caucasus, and even between Turkey and Iran. There is a road route via Turkey and Georgia while awaiting an improvement in the relations between neighbouring countries and in particular between Armenia and Turkey.

### **3. MULTI-REGIONAL CO-OPERATION IN A EUROPEAN TRANSPORT AREA**

Transport policy has always had the aims of facilitating trade, strengthening cohesion and preserving the environment.

The logic of the opening up of Europe is leading to the inclusion of ever larger areas: the number of ECMT members is increasing, as is the number of candidates for membership of the European Union. These institutions are having to take on new responsibilities and extend their fields of action.

It is still difficult to say what the degree of integration of the different countries concerned will be, or what level of co-ordination will be reached in transport policies, which in addition to the liberalisation of markets have to build infrastructures and set up arbitration mechanisms and choices for the future.

As a result it is not possible to have a single approach to the needs and methods of transport organisation within regional entities that overlap one another and interact to form a multipolar system in which each entity has its specific features, its circumstances, environment and way of life. The study of regional flows makes it possible to better understand these entities and place them in their territorial and cultural context.

Hence the idea of a more flexible, but also more forward-looking approach for which lessons can be drawn from the preceding analyses and experiences.

#### **3.1 Importance of intermodal solutions: new opportunities**

Intermodal solutions associate land and sea transport.

Within the PETRAs the sea routes need to be better defined, mainly in the extension of the land corridors. The ports, airports and inland terminals need to be integrated into infrastructure networks. The reorganisation of break bulk facilities for sea traffics and the development of new forms of logistic organisation are increasing the importance of these intermodal solutions.

### **3.2 Multiplication of routes: the flexibility of the solutions**

The multiplicity is often an existing reality, as has always been the case for the routes between Europe and the Middle East: sea route via Greece and land route via the Strait of Bosphorus. During the war in Yugoslavia, alternative land routes via Romania, Bulgaria and Hungary, and sea routes via Italy and Greece replaced the route which now constitutes corridor X. The opening of Russia permits more direct links between the countries of the Black Sea, Central Europe, and the Baltic, through Ukraine and Belarus. In the Western Mediterranean, sea and land routes can be used at will. Intermodality facilitates the multiplicity of choices.

Access to Central Asia is also the subject of several projects for land routes to the North through Russia, through Azerbaijan or Armenia: the Black Sea and the Caspian can be bypassed or crossed by ship. These two seas are in fact linked via the Volga-Don ship canal in an area where sea and waterway transport offers abundant possibilities, with the seas and the Dniepr, Don and Volga rivers. In a region where tensions remain, the multiplicity of routes gives a fair guarantee of being able to maintain shipments. In a period of political stability this multiplication will stimulate the competitiveness of the operators.

### **3.3 Constructing scenarios: the long-term outlook**

The construction of networks, whether of infrastructures or of trade organisations, can be done only on the basis of long-term prospective studies, needed by international institutions, governments and operators alike.

In the Mediterranean region, the *Plan Bleu* scenarios, produced in the 80s, have provided a useful framework for a long-term policy embarked upon under the aegis of the United Nations with a view to better environmental protection.

For transport networks such scenarios are necessary so that countries can discuss and negotiate on a common basis: the assumptions can be sufficiently open to integrate different policy options. Such an approach has been developed in the framework of the peace process and in the Western Mediterranean. In the European Union the Commission adopts this approach and in fact finds itself obliged to carry out "Strategic Environmental Assessments" (SEAs) required by the European Parliament for the implementation of the trans-European networks.

The methods are being refined. There are three basic components: the definition of strategies or policies, the setting up of tools for observation and analysis, and the identification of a field of application (development of a network or corridor, for example). In this approach a vital aspect is the coherence between national and international plans and, beyond the particular projects or policies studied, compatibility in the socio-economic environment (external environment) assumptions as well as the clarification of the transport policy assumptions (transport policy, liberalisation, harmonisation, pricing and investment scenarios).

### **3.4 The definition of an institutional framework for analysis**

The definition of scenarios has to have a certain degree of legitimacy to be accepted. Often the institutional frameworks are inadequate. Such frameworks do not really exist for the whole of the Mediterranean area, and they certainly need to be rethought in Central Asia. Within the European Union the authorities are organising themselves with this in mind for an area which extends to the

countries in the pre-accession phase. In the Mediterranean region the United Nations has long played this role, but several regional agencies of the United Nations are involved and proper co-ordination is by no means assured. What is more, such institutional frameworks must remain sufficiently close to the regional realities in the sense given to them in the preceding paragraphs: relations between neighbouring countries.

An approach initiated by the European Union, ECMT, and UN-ECE concerning transport and transport infrastructures should also be matched by a more decentralised approach, by regions.

This need is all the greater in that Europe's sphere of influence is expanding and covers parts of other continents. The number of member countries is considerably increasing, in both the European Union and ECMT.

The boundaries of these areas do not necessarily have to be rigidly defined, but they must always correspond to the economic, geographical and human realities if the institutions are to enjoy a minimum of authority.

In this way co-operation between neighbouring countries could be improved; scenarios drawn up on common and compatible bases with those defined on a larger scale constituting a useful reference framework.

In many cases the institutional framework still remains to be found. Be this as it may, research concerned with economic analysis, the impact of transport and evaluation methods can make a useful contribution to such a development, whether this research takes an academic approach or is carried out in close liaison with the transport institutions in charge of such decentralised co-operation.

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## **B. COMPARATIVE STUDY OF SURFACE TRANSPORT ROUTES BETWEEN EUROPE AND ASIA**

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### **1. INTRODUCTION**

#### **1.1 Objectives of the study**

The study presented here has been prepared on behalf of the European Commission. It has been prepared by PLANCO Consulting GmbH, Germany, in collaboration with High-Point Rendel, United Kingdom. The major objectives were as follows:

- *to identify existing and possible major surface transport routes between Europe and the Far East in order to evaluate their relative importance and their roles in the context of exchanges between the European Union and Far Eastern countries;*
- *to compare the advantages and disadvantages of each route regarding, inter alia, economic viability and competitiveness, quality of service, constraints (both natural, such as environmental/seasonal, or human), transport capacity and future development potential;*
- *to ensure that the development of Trans-European transport networks is harmonised with and is efficiently connected to routes (both current and future) which will be developed on the Asian continent;*
- *to assess the consistency and compatibility of the routes (present and future) which will be developed on the Asian continent with the main national transport development policies in Central and Eastern European Countries;*

The study should provide the Commission with the information necessary to shape future European Union transport policy and subsequent actions as regards these links, taking into account work already undertaken in international bodies such as the United Nations Economic and Social Commission for Asia and the Pacific (UN-ESCAP).

## 1.2 Approach

### 1.2.1 *The routes analysed*

#### *Maritime routes*

The following maritime routes have been assessed for the purposes of this study:

- Suez Canal route
- Cape of Good Hope route
- Panama Canal route
- Northern (Arctic) route

Currently, the Suez Canal route absorbs virtually all maritime transport between Europe and the Far East. There are no relevant services rounding the Cape of Good Hope or on the Northern route, and the Panama Canal route is only a theoretical alternative created by combining Europe - US with US - Far East services.

#### *Rail routes*

Several international organisations and governments have studied potential routes for Europe/Far East rail transport. There is no definitive statement of possible routes. The following main options have been analysed:

**Trans-Siberian Railway (TSR):** This route has existed for many years. It runs from Moscow, with links to St Petersburg on the Baltic coast or into western Europe, to Vladivostock on the Pacific east coast of Russia.

**Trans-Asian Railway (Northern) (TAR-N):** All rail routes between the Far East and Europe are covered by the generic term Trans-Asian Railway used initially by UN ESCAP, which has undertaken considerable evaluations of these land routes.

**Trans-Asian Railway (Central) (TAR-C):** A variation on TAR-N avoids the TSR completely, traversing Kazakhstan north of the Aral Sea to enter Western Europe via Ukraine as well as Russia. As this provides the shortest link to eastern European countries such as Hungary a cost comparison is given.

**Trans-Asian Railway together with TRACECA<sup>2</sup> (TAR-TRACECA):** Though not in use for trade between the Far East and Europe TAR-TRACECA is at a reasonably advanced stage of planning. TAR-TRACECA drives south-west through Central Asian countries after leaving TAR-C, which crosses the China/Kazakh border at Druzhba, to cross the Caspian Sea into the Caucasus and then to the Black Sea. At this stage TAR-TRACECA follows one of the TRACECA routes<sup>3</sup> linking Central Asia with Europe.

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2. The term TRACECA (Transport Corridor Europe - Caucasus - Asia) is used here as part of the consultant's Trans Asian Railway route definition, for convenience and simplicity.

3. Note that TRACECA itself does not consist of a single route.

A variation on TAR-C links to the Caucasus via the port of Aktua which is in Kazakhstan. This variation avoids a number of Central Asian border crossings, but requires substantial investment in the rail link to Aktua.

**Trans-Asian Railway (Southern) (TAR-S):** The Trans-Asian Railway (Southern Corridor) (TAR-S) drives south through other Central Asian countries into Iran, and then into Turkey towards Istanbul or a Turkish ports on the Mediterranean and Black Sea. Unlike both TAR-TRACECA and the main above-mentioned corridors, TAR-S is incomplete.

In 1995, UN-ESCAP held an ad hoc expert meeting on the Trans-Asian Railway route requirements which it describes as the “southern” route. The route includes an element in Indonesia, but would effectively start in Singapore, travelling through Malaysia, Thailand, Myanmar, Bangladesh, India, Afghanistan, Pakistan, Iran, and Turkmenistan for Azerbaijan, linking into the Turkish, TRACECA, or northern sections of the TAR. Substantial sections of this route do not exist, notably in Myanmar and Iran, and it seems to have little relevance to links between Europe and Asia on the route between Europe and the Far East.

### *Road routes*

Various road corridors linking Europe with Central Asia have been studied by UN-ESCAP<sup>4</sup>. Corridors covering the whole distance between Europe and the Far East have not yet been presented by UN-ESCAP. But corridor proposals do exist for road corridors providing links from Turkey in the west up to China in the East, from Kazakhstan and Mongolia in the north to India, Malaysia and Singapore in the south.<sup>5</sup>

At the International Symposium on Economic Development of the Regions along the New Euro-Asia Continental Bridge held in Beijing in May 1996 another New Silk Road -the Central Asian Highway - was promulgated. The proposed route runs from Almaty in Kazakhstan through Kyrgystan, Tadjikistan, Uzbekistan, Turkmenistan, and Iran into Turkey to meet the West European roads network at Istanbul. At Almaty it traverses Kyrgystan for China, Pakistan (Karachi), and India (Delhi, Calcutta).

The road corridors are combinations of Asian Highway main routes and linkages as promulgated by UN-ESCAP. Future international agreements may result in the identification of different routings, but this is unlikely to result in any significant change in the conclusions resulting from our cost comparisons:

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4. See Economic and Social Commission for Asia and the Pacific (ESCAP), Draft Report of Study on Land Transport Corridors between Central Asia and Europe, Bangkok, 1997.
  5. See United Nations (ed.), Asian Highway Route Map. This map indicates routes agreed at the Expert Group Meeting on the development of the highway network in Asian Republics held from 31 October to 3 November 1995, and on the development of the Asian Highway network held from 29 November to 3 December 1993 at ESCAP. Some of the routes indicated in the map reflect agreed Asian Highway routes, others show possible routes which still need agreement.

- Northern
- Ukrainian
- TRACECA
- Southern

### 1.2.2 Selected origins / destinations

Transport costs have been assessed for moves between specified O/D points chosen for their location at regional limits or at trade centres. The O/D points selected are:

Table 1. O/D points

Far East	Europe
Tianjin	Gothenburg
Beijing	Essen
Guangzhou	Milan
Hong Kong	Debrecen
Singapore	Helsinki
Bangkok	Athens
(Almaty - on the way)	

### 1.2.3 Criteria for assessing the EU interest in individual routes and their specification for evaluation purposes

We have identified three different sets of criteria as worth separate evaluation. These are commercial, economic, and political. *Commercial* criteria are those used by the market and determine the extent to which a route or corridor is actually used, and therefore determine the commercial success of services on those routes. By and large, services are no longer offered on routes which are not commercially attractive, or if they are, not for long. Although it is necessary for a route to physically exist before it can be commercially viable the converse is not true: just because a route physically exists it does not mean that commercially viable service can operate on it.

*Economic* criteria are those which would help decide the feasibility of investment in a route, which include the extent to which the route exists already, the traffic it might carry, and the willingness of users to contribute fully to the cost of development. The external costs and benefits associated with the building and use of the proposed route including environmental costs imposed should be of interest to governments. Economic criteria do not affect shipper choices except insofar as costs are reflected in prices.

*Political* criteria do not influence the commercial viability of routes, and users or potential users of routes are not affected by political considerations unless administrative force is used, or financial encouragement offered. Thus US carriers are not permitted to use Iran routes even if they want to, and US government cargo routing is administratively directed, while the improvements being made to TRACECA routes should encourage their use.

We have identified the main relevant criteria under each heading, and have qualitatively rated them with scores of 1-5 for each route, with the meaning of each rating identified in the criteria

description below, and with 5 representing best situations and 1 worst. Some ratings may be expected to change over time, so that in the comparative evaluations themselves we have suggested both current and future ratings. We have also developed comparative tables for both the Europe/Far East routing and Europe/Central Asia.

## 2. RESULTS

### 2.1 Transport cost comparison

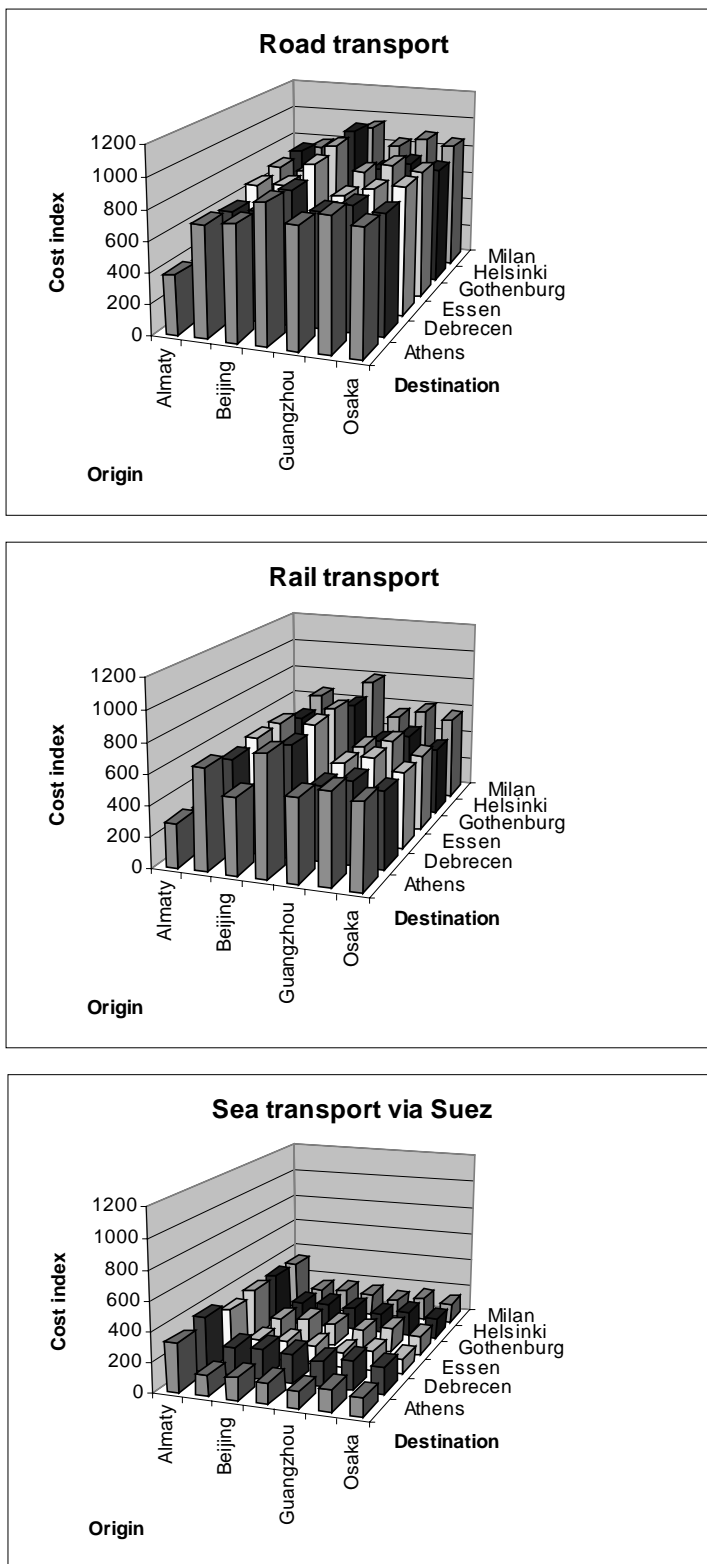
- Generally, maritime transport is the least costly mode, followed by railway routes, while road transport is invariably the most expensive.
- The only exception is Almaty, where the railway route is less expensive than the maritime route, due to long hinterland transport at the Asian end in case of maritime transport (Bandar Abbas to Almaty, 3500 km). But for some European origins the railway advantage against maritime transport is not substantial.
- With the exception of Almaty, the advantage of maritime routes is extremely high. For example, railway cost as a percentage of maritime cost from Essen:

to Bangkok is	520%
to Beijing is	330%
to Jakarta is	626%
to Guangzhou is	527%
to Manila is	439%
to Osaka is	476%

Thus, the cost of railway transport to become competitive would have to be reduced by more than 80%.

The comparison indexes rail, road, and sea costs between selected origins and destinations against 100 for the lowest cost move, which is Essen/Guangzhou:

Figure 7. Summary cost comparison



Source: PLANCO Consulting GmbH, 1999.

- The highest Europe/Far East sea cost via Suez, for Beijing/Debrecen, is slightly less than half the rail cost for the same routing, and less than 30% of the road cost. For sea carriers this origin/destination pair involves a substantial land move at both ends of the route, creating the best possible (but still extremely uncompetitive) commercial conditions for a pure overland move.
- For Europe/Central Asia, rail is the lowest cost mode, even better than the sea routing through Bandar Abbas (which involves a substantial land leg). However, the price differential between modes is not enormous, and does not compare with the differences identified on the Europe/Far East leg.
- The TAR - TRACECA routing is the lowest cost route for several southerly rail routes to Almaty. It is, however, not physically available presumably because potential investors are unconvinced that there would be enough traffic to use it.
- Road transport is a more expensive mode than sea to Almaty, but is nevertheless used, particularly on the TRACECA route and variations of it.
- TAR - S is not the least costly route for any of the trades.

#### Container transport from Milan (Italy) to Far East destinations: Route description

	Milan-Almaty	Milan-Bangkok	Milan-Beijing	Milan-Jakarta	Milan-Guangzhou	Milan-Manila	Milan-Osaka
<b>via Suez Canal</b>							
Transport from hinterland to port	Milan-Genoa 141 km by road	Milan-Genoa 141 km by road	Milan-Genoa 141 km by road	Milan-Genoa 141 km by road	Milan-Genoa 141 km by road	Milan-Genoa 141 km by road	Milan-Genoa 141 km by road
Sea transport from feeder port to main port	Genoa-Malta 583 nm	Genoa-Malta 583 nm	Genoa-Malta 583 nm	Genoa-Malta 583 nm	Genoa-Malta 583 nm	Genoa-Malta 583 nm	Genoa-Malta 583 nm
Sea transport from main port in Europe to main port in Asia	Malta-Bandar Abbas 3 767 nm	Malta-Singapore 6 051 nm	Malta-Hong-Kong 7 475 nm	Malta-Singapore 6 015 nm	Malta-Hong-Kong 7 475 nm	Malta-Hong-Kong 7 475 nm	Malta-Osaka 8 851 nm
Sea transport from main port in Asia to Asian feeder port		Singapore-Bangkok 831 nm	Hong-Kong-Tianjin 1.361 nm	Singapore-Jakarta 525 nm		Hong-Kong-Manila 632 nm	
Transport from port to hinterland in Asia	Bandar Abbas-Almaty 3 500 km	local transport by road	Tjingjin-Beijing 140 km by road	local transport by road	Hong-Kong-Guangzhou 150 km by road	local transport by road	local transport by road

<b>Via Cape of Good Hope</b>							
Transport from hinterland to port	Milan-Genoa 141 km by road	Milan-Genoa 141 km by road	Milan-Genoa 141 km by road	Milan-Genoa 141 km by road	Milan-Genoa 141 km by road	Milan-Genoa 141 km by road	Milan-Genoa 141 km by road
Sea transport from feeder port to main port	Genoa-Algeciras 847 nm	Genoa-Algeciras 847 nm	Genoa-Algeciras 847 nm	Genoa-Algeciras 847 nm	Genoa-Algeciras 847 nm	Genoa-Algeciras 847 nm	Genoa-Algeciras 847 nm
Sea transport from main port in Europe to main port in Asia	Algeciras-Bandar Abbas 9 895 nm	Algeciras-Singapore 10 820 nm	Algeciras-Hong-Kong 12 280 nm	Algeciras-Singapore 10 820 nm	Algeciras-Hong-Kong 12 280 nm	Algeciras-Hong-Kong 12 280 nm	Algeciras-Osaka 13 656 nm
Sea transport from main port in Asia to Asian feeder port		Singapore-Bangkok 831 nm	Hong-Kong-Tiangjin 1.361 nm	Singapore-Jakarta 525 nm		Hong-Kong-Manila 632 nm	
Transport from port to hinterland in Asia	Bandar Abbas-Almaty 3 272 km	local transport by road	Tjangjin-Beijing 140 km by road	local transport by road	Hong-Kong-Guangzhou 150 km by road	local transport by road	local transport by road

**Container transport cost from Milan (Italy) to Far East destinations in US \$/ TEU**

	Milan-Almaty	Milan-Bangkok	Milan-Beijing	Milan-Jakarta	Milan-Guangzhou	Milan-Manila	Milan-Osaka
<b>Via Suez Canal</b>							
Transport from hinterland to port	195	195	195	195	195	195	195
Sea transport from feeder port to main port	508	508	508	508	508	508	508
Sea transport from main port in Europe to main port in Asia	559	666	784	666	784	784	939
Sea transport from main port in Asia to Asian feeder port		508	482	503		516	
Transport from port to hinterland in Asia	3 272	130	194	130	205	130	130
<b>Total</b>	<b>4 534</b>	<b>2 007</b>	<b>2 163</b>	<b>2 002</b>	<b>1 692</b>	<b>2 133</b>	<b>1 772</b>



**Comparison of maritime, railway and road transport cost using for each mode  
the least-cost route (US\$ per TEU)**

From/ to	Almaty	Bangkok	Beijing	Jakarta	Guang-zhou	Manila	Osaka
<b>Sea transport via Suez</b>							
Athens	4 409	1.870	2.026	1.864	1.555	1.997	1.635
Debrecen	5 145	2.619	2.775	2.613	2.304	2.745	2.384
Essen	4 198	1.671	1.827	1.666	1.356	1.798	1.436
Gothenburg	4 620	2.094	2.249	2.088	1.778	2.220	1.859
Helsinki	4 647	2.098	2.254	2.092	1.806	2.225	1.885
Milan	4 534	2.007	2.163	2.002	1.692	2.134	1.772
<b>Rail</b>							
Athens	3 858	8 926	6 799	10 657	7 378	8 131	7 600
(route)	TRAC	TRAC	TSR	TRAC	TRAC	TRAC	TSR
Debrecen	3 466	8 214	6 047	9 944	6 665	7 419	6 849
(route)	TAR-C	TAR-N	TSR	TAR-N	TAR-N	TAR-N	TSR
Essen	4 135	8 693	6 030	10 423	7 144	7 898	6 831
(route)	TAR-C	TAR-N	TSR	TAR-N	TAR-N	TAR-N	TSR
Gothenburg	4 225	8 782	6 119	10 513	7 234	7 987	6 921
(route)	TAR-C	TAR-N	TSR	TAR-N	TAR-N	TAR-N	TSR
Helsinki	3 299	7 891	5 228	9 622	6 343	7 096	6 030
(route)	TAR-C	TAR-N	TSR	TAR-N	TAR-N	TAR-N	TSR
Milan	4 162	8 969	6 803	10 700	7 421	8 174	7 604
(route)	TRAC	TAR-N	TSR	TAR-N	TAR-N	TAR-N	TSR
<b>Road</b>							
Athens	5 217	9 819	10 115	12 149	10 534	11 630	10 958
(route)	TRAC	TRAC	TRAC	TRAC	TRAC	TRAC	TRAC
Debrecen	4 895	9 497	9 793	11 827	10 211	11 038	10 635
(route)	TRAC	TRAC	TRAC	TRAC	TRAC	TRAC	TRAC
Essen	5 817	10 466	10 715	12 796	10 243	11 070	11 557
(route)	Ukraine	TRAC	Ukraine	TRAC	TRAC	TRAC	Ukraine
Gothenburg	5 857	10 959	10 755	13 290	11 174	12 000	11 598
(route)	Ukraine	TRAC	Ukraine	TRAC	Ukraine	Ukraine	Ukraine
Helsinki	4 809	11 286	9 698	13 616	10 125	10 952	10 549
(route)	Ukraine	Ukraine	Ukraine	Ukraine	Ukraine	Ukraine	Ukraine
Milan	5 937	10 539	10 835	12 869	11 254	12 080	11 678
(route)	TRAC	TRAC	TRAC	TRAC	TRAC	TRAC	TRAC
TRAC	TRACECA						

Source: PLANCO Consulting GmbH, 1999.

## 2.2 Users' views

This section is based on 19 interviews with managers working for 13 key participants in overland trade between Europe, the Far East and Central Asia. These market interviews were intended to identify the current status and organisation of these trades, and to gather opinions on their possible future development.

It is notable that three of the largest global container carriers, Sea-Land Services, Maersk, and P&O Nedlloyd, are at the forefront of land transport developments within Asia: interviews were carried out with several managers with differing areas of responsibility in all three companies.

Another major container carrier interviewed was OOCL in Shanghai: this Hong Kong based carrier has led the development of intermodal rail transport links between central China and Hong Kong and is involved in rail developments in the PRC.

Two major European forwarders with interests in Asia, LEP and Kuehne & Nagel, were included in the sample, together with the Japanese forwarder, Jeuro, which is most closely involved with transport on the TSR. Sinotrans, the principal and until recently only Chinese forwarder, and a major sea carrier in its own right, was interviewed primarily to establish whether there was any overland trade at all between China and Europe or transiting China for Europe. Sinotrans confirms that there is not.

Included in this part of the study were the International Road Federation, a representative of TRACECA in Tbilisi, and Walex, an air forwarder specialising in flights to central Asia. The two flights per week are mostly passenger but some cargo is loaded outbound (seldom inbound) from Düsseldorf, a major air cargo hub. An all-cargo Ilyushin whose route and destinations vary with demand, is also in operation. Almaty is the principal destination for both cargo and passengers.

The shipping lines which are trying to develop overland rail options tend to start where the existing system is best and develop from there. They are not really interested in road, but in the potential savings of using very long rail carriage across the Asian land mass. However, other than the TSR they have so far found “no practicable opportunities at all”, and fear that they must wait for the railways to develop and offer the right rates.

Respondents to the study have favourite routes, particularly from southern Europe, and disagree about what these should be, and whether road or rail. Their enthusiasm about their routes should be heard in the context of the facts about the relative importance of Central Asian trade to Europe assessed in another section, and supported by the forwarder who remarked that “each move is a one-off depending on commodity, specific requirements and volume: it often takes two weeks to look into and quote for the more difficult moves, which also has a cost”.

### **2.2.1 Europe / Central Asia**

#### *From northern Europe*

Respondents agreed that rail is the only option, because it is safer, more reliable, has only occasional problems in winter, and not every year, whereas Russian roads are extremely bad in the east, barely passable at the best of times (Spring/Autumn) and even worse in Winter. Consequently transit time by road is the same or longer than by rail, and security is better by rail. This move would take 10-14 days from Riga to Almaty and cost \$4 500 for a 40ft container. (Another estimate of the cost of a 40ft from Riga to Almaty by rail was about \$10 000).

A full wagonload from Sweden for Almaty could cost SKr 45 000, about half the Vladivostock full-wagon price. The goods would be shipped by sea by trailer to Lahti in Finland for transloading into Russian wagons, and then by Finnish/Russian rail.

### *From the United Kingdom and mid-Europe*

Arguing that it was really a rail move, a major UK forwarder suggested that the road move from London to Almaty (assuming 12 a year) would cost £15 000 per load, though it could be reduced to £12 000 in different circumstances, for instance, if a trucker was looking for any sort of backload.

Another haulier would also prefer rail, for the same reasons, and quoted a rate of about £2 500 from London to Almaty, using 20 foot containers via Riga and Russia. If a customer insisted on trucks, an incoming Turkish driver looking for a return load to Turkey prepared to deviate via Almaty would be located at Dover. These drivers just “go straight overland”, taking three or more weeks.

Odessa/Ilychevsk give rail links via the Ukraine, but Poti is said to be effective as a truck route via Baku though transit time may be extended, while there are said to be difficulties around Azerbaijan, where both main rail lines from Poti and Riga into Tbilisi are damaged. However, the forwarder describing this route said that his real interest concerned UK cargo to Georgia, and he would not choose this route to get to anywhere else because it can take 30 days just to get from the United Kingdom to Odessa, with Kazakhstan needing a dangerous additional week by truck.

### *From southern Europe*

Routing options from southern Europe are very diverse and provoked extensive disagreement amongst respondents, who often spoke of their own route as though it was the only one. Road is, however, the dominant mode, with routing the main source of disagreement.

Sea-Land has a 250 TEU feeder line operating fortnightly from Gioia Tauro to Poti, where it is advising the local government on development of the port. With Maersk Sea-Land operates another weekly feeder from Gioia Tauro to Ilychevsk, with alternate bi-weekly calls at Varna and Novorossiysk. It is not responsible for cargoes travelling further than Poti because all its containers are stripped and returned there, although the cargo goes further, after transloading into trucks.

Anything not going inland by rail over Ilychevsk tends to be shipped to Odessa by truck. Most Black Sea services hub at Odessa, with secondary feeders to Ilychevsk, Mariopol and Poti, each of which can be used as setting off point overland to Central Asia and Almaty. It was reported that in northern Italy many trucks were seeking return loads for the Ukraine, and would be willing to be diverted to Almaty. These might use the Poti - Baku - Caspian route, which was classed as "a truck-only route whose weakest link is the ferry from Baku". Although we failed to find any forwarder whose trucks use this TRACECA routing, the Sea Containers boxes which are transloaded into trucks use the trans-Caucasus route. The view that much of the growing volume through Poti goes inland beyond Georgia, suggests that some hauliers must be using it.

A major Italian forwarder said that overland road through Slovenia, and into Russia, north of Black and Caspian Seas was invariably used for central Asia, although there was a potential sea/land, route initially into the Black Sea. Transit time to Almaty was 25 days, and rate, varying with the season, would be 15-20m Lira per truck, a high rate to cover the probability of a empty backhaul. There are said to be no problems at all until October/November but in December and January there is usually two metres of snow blocking the roads in Russia.

### 2.2.2 *Far East / Central Asia*

All non-US fret traffic to Almaty from all over the Far East is routed by sea via Bandar Abbas. Sea freight rates are higher than to north Europe, but the route is still attractive to shippers. The rate from Jakarta is slightly lower than the rate from Japan, reflecting the shorter distance. Onward movement is usually by truck.

There is, however, overland traffic via Druzhba. Trans-border traffic amounted to 18 000 TEU (both ways) in the first 33 weeks of 1997. Most of this fret represents containers of car components transiting China by train destined for assembly plants traffic in Central Asia, particularly Uzbekistan. These containers are back-hauled from Uzbekistan loaded with cotton. It is conceivable that containers travel as far as eastern Europe, only one example, of consumer goods for the Chinese community in Budapest has been quoted, but not confirmed.

Korean cargo is consolidated at the port of Lianyungang, north of Shanghai which has a regular feeder from Pusan and sometimes from Japan and is the only port through which transit traffic is allowed -- it may not move through Shanghai.

This fret traffic is allegedly at risk, and because of this it is said that the firm Daewoo is now moving some of its back-haul containers out through Bandar Abbas and that it is considering the TRACECA route via Poti for Korea. It seems unlikely, however, that any shipper would use one route in and another out because of the equipment imbalances which would affect both railway and shipping line: the claim does however illustrate that the overland route faces real competition from sea.

Feeder traffic is mainly containerised, but there is some conventional and project cargo, and non-transit cargo from Japan to western China, moving in 'one-way' containers. One block train sets off every 10 days, with 30- 50 wagons per train, which is then added to make up longer trains for the long haul west. Train time from the Kazakhstan border from arrival in Lianyungang is 30-40 days, depending on whether a train has just left or not - frequency is ten days.

No other transit traffic enters China from South-East Asia by rail. Any Hong Kong traffic for western China must be moved into Guangdong and presented to the railway as domestic cargo because of the relative strength of the HK dollar, though currency/tariff realignment after 1 August 1997 may eliminate this requirement.

Forwarders' perceptions are that the overland rail option from China is unreliable. Long delays can occur because of the gauge-change at the Chinese border, with even passenger trains delayed a minimum of six hours, so lower priority freight trains could be delayed a great deal longer. The state rail system is "run for its own convenience, like the army. If you only have one or two containers they must first be booked. Then you will have to wait until there are enough containers booked to make up a train. Finally you are told where to send the containers so that they can be consolidated. They can be collected from all over the south-east, from Guangzhou to Shanghai. Then the train can set off."

One special straight-through two week cross-border service from Guangzhou to Uzbekistan for Du Pont was reported to have top level support from the Ministry of Communications: it was given top priority, with armed soldiers accompanying the train because it carried hazardous chemical products.

### 2.3 Summarised evaluation of different corridors

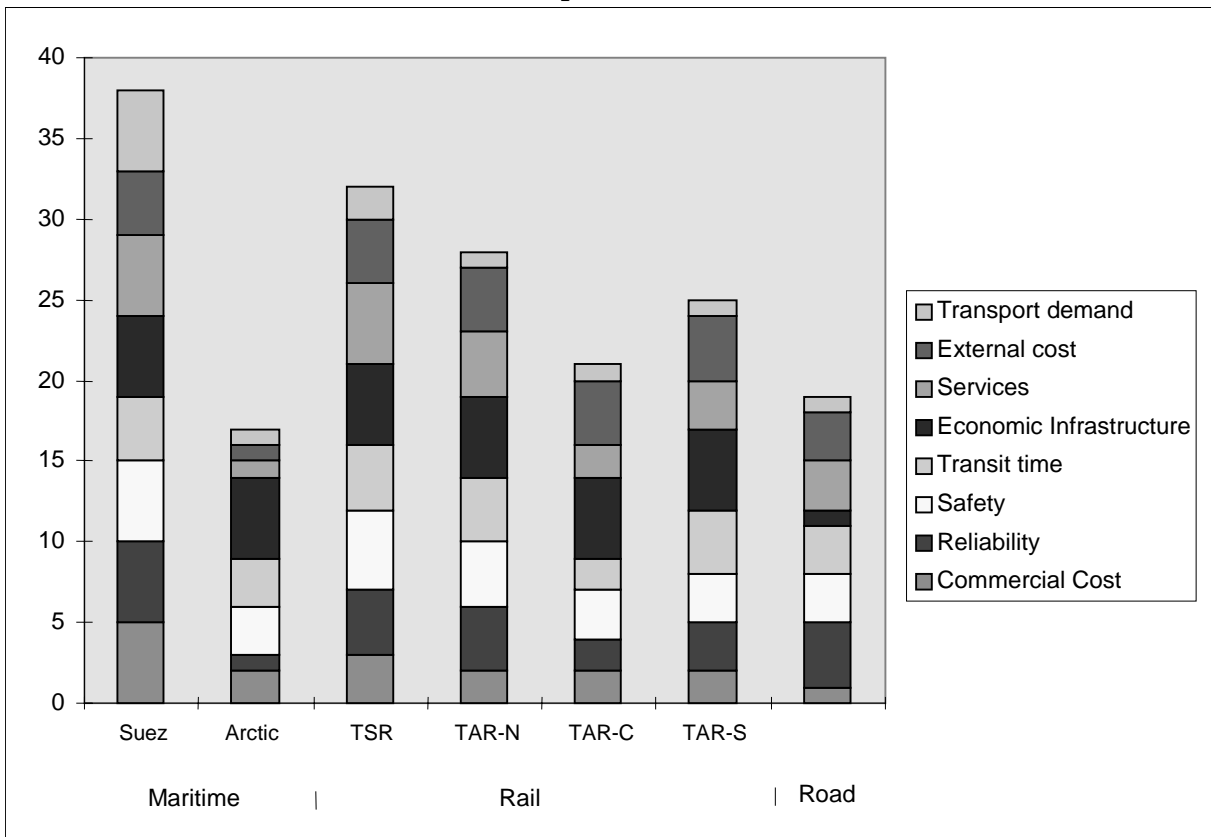
The results of the consultant’s qualitative assessment of the main competing routes is shown below. This purely qualitative assessment is based on consolidation of all the research carried out, but with no weighting given to the individual criteria. Nevertheless, it is believed that the results give a fair impression of the overall strengths and weaknesses of modes and routes.

#### Europe/Far East

A summarised evaluation of different routes and modes for goods transport Europe - Far East, applying the criteria explained above, reveals the following:

- The maritime route via Suez is and will continue to be the optimum mode for Far East/Europe container trade.
- The Arctic maritime route is and will continue to be worst placed.
- Despite substantial potential improvement in TAR-N, TAR-C, and TAR-S, TSR is and will continue to be the best rail option (but still far behind maritime routing).
- Improvements in road still place it only marginally ahead of the Arctic maritime option.

Figure 8. **Summary evaluation of different transport routes and modes (future situation): Europe - Far East**



40 = maximum total attainable (best situation)

Table 2. Evaluation of different transport routes Europe - Far East

<i>Mode</i>	<i>Maritime</i>		<i>Rail</i>				<i>Road</i>
<b>Route Criteria</b>	<b>Suez</b>	<b>Arctic</b>	<b>TSR</b>	<b>TAR-N</b>	<b>TAR-C</b>	<b>TAR-S</b>	
<b>Current</b>	<b>38</b>	<b>15</b>	<b>27</b>	<b>19</b>	<b>13</b>	<b>16</b>	<b>14</b>
<b>Future</b>	<b>38</b>	<b>17</b>	<b>32</b>	<b>28</b>	<b>21</b>	<b>25</b>	<b>19</b>

40 = maximum total attainable (best situation)

*Details: current situation*

<i>Mode</i>	<i>Maritime</i>		<i>Rail</i>				<i>Road</i>
<b>Evaluation Criteria</b>	<b>Suez</b>	<b>Arctic</b>	<b>TSR</b>	<b>TAR-N</b>	<b>TAR-C</b>	<b>TAR-S</b>	
<b>Commercial</b>							
Cost	5	2	3	2	2	2	1
Reliability	5	1	3	2	1	2	2
Safety	5	3	4	3	2	2	1
Transit time	4	3	3	2	1	2	2
<b>Economic</b>							
Infrastructure	5	3	4	3	1	2	1
Services	5	1	4	2	1	1	3
External cost	4	1	4	4	4	4	3
Transport demand	5	1	2	1	1	1	1
<b>Total</b>	<b>38</b>	<b>15</b>	<b>27</b>	<b>19</b>	<b>13</b>	<b>16</b>	<b>14</b>

5 = best situation      1 = worst situation      40 = maximum total attainable

*Details: future situation*

<i>Mode</i>	<i>Maritime</i>		<i>Rail</i>				<i>Road</i>
<b>Route Criteria</b>	<b>Suez</b>	<b>Arctic</b>	<b>TSR</b>	<b>TAR-N</b>	<b>TAR-C</b>	<b>TAR-S</b>	
<b>Commercial</b>							
Cost	5	2	3	2	2	2	1
Reliability	5	1	4	4	2	3	4
Safety	5	3	5	4	3	3	3
Transit time	4	3	4	4	2	4	3
<b>Economic</b>							
Infrastructure	5	5	5	5	5	5	1
Services	5	1	5	4	2	3	3
External cost	4	1	4	4	4	4	3
Transport demand	5	1	2	1	1	1	1
<b>Total</b>	<b>38</b>	<b>17</b>	<b>32</b>	<b>28</b>	<b>21</b>	<b>25</b>	<b>19</b>

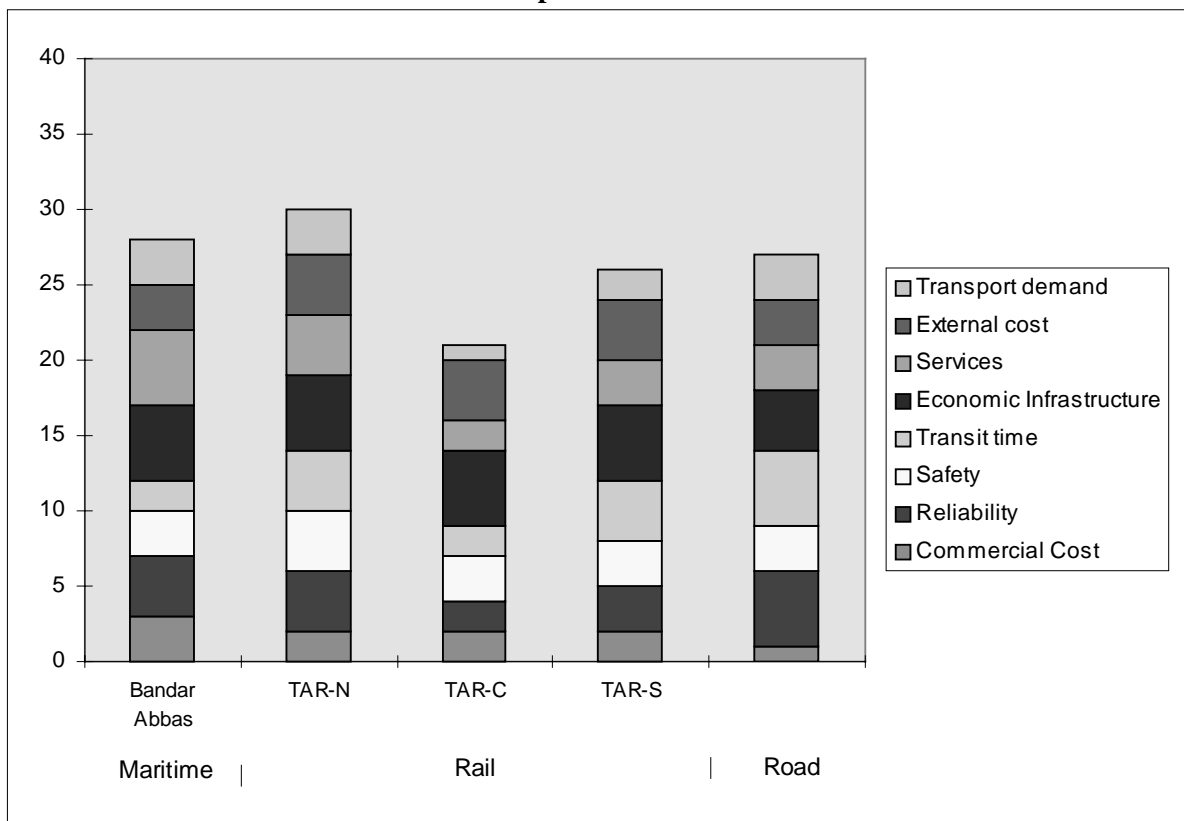
5 = best situation      1 = worst situation      40 = maximum total attainable

**Europe / Central Asia**

For Europe/Central Asia, the comprehensive route/mode evaluation shows that:

- The maritime Bandar Abbas routing, the rail TAR-N routing, and the road routing are positioned quite close to each other, depending on precise origin/destination pairing.
- All offers are, however, inferior to the quality achieved by the Suez maritime routing for Far East traffic.
- TAR-N has the potential to become the strongest mode/routing,
- Despite significant improvements in TAR-S and TAR-C, these rail routings will be unable to achieve equivalence with either TAR-N or the maritime routing via Bandar Abbas.
- Indeed, neither will be as successful as road in these markets - and road in this context of course includes the TRACECA road routings.

**Figure 9. Summary evaluation of different transport routes and modes (future situation): Europe - Central Asia**



40 = maximum total attainable (best situation)

Table 3. Evaluation of different transport routes Europe - Central Asia

<i>Mode</i>	<i>Maritime</i>	<i>Rail</i>			<i>Road</i>
<b>Route Criteria</b>	<b>Bandar Abbas</b>	<b>TAR-N</b>	<b>TAR-C</b>	<b>TAR-S</b>	
<b>Total</b>	<b>26</b>	<b>24</b>	<b>13</b>	<b>17</b>	<b>22</b>
<b>Total</b>	<b>28</b>	<b>30</b>	<b>21</b>	<b>26</b>	<b>27</b>

40 = maximum total attainable (best situation)

*Details: current situation*

<i>Mode</i>	<i>Maritime</i>	<i>Rail</i>			<i>Road</i>
<b>Route Criteria</b>	<b>Bandar Abbas</b>	<b>TAR-N</b>	<b>TAR-C</b>	<b>TAR-S</b>	
<b>Commercial</b>					
Cost	3	2	2	2	1
Reliability	4	3	1	2	4
Safety	3	3	2	2	1
Transit time	2	3	1	2	4
<b>Economic</b>					
Infrastructure	4	3	1	2	3
Services	4	3	1	1	3
External cost	3	4	4	4	3
Transport demand	3	3	1	2	3
<b>Total</b>	<b>26</b>	<b>24</b>	<b>13</b>	<b>17</b>	<b>22</b>

5 = best situation      1 = worst situation      40 = maximum total attainable

*Details: future situation*

<i>Mode</i>	<i>Maritime</i>	<i>Rail</i>			<i>Road</i>
<b>Route Criteria</b>	<b>Bandar Abbas</b>	<b>TAR-N</b>	<b>TAR-C</b>	<b>TAR-S</b>	
<b>Commercial</b>					
Cost	3	2	2	2	1
Reliability	4	4	2	3	5
Safety	3	4	3	3	3
Transit time	2	4	2	4	5
<b>Economic</b>					
Infrastructure	5	5	5	5	4
Services	5	4	2	3	3
External cost	3	4	4	4	3
Transport demand	3	3	1	2	3
<b>Total</b>	<b>28</b>	<b>30</b>	<b>21</b>	<b>26</b>	<b>27</b>

Source : PLANCO Consulting GmbH, 1999.



### **3. RECOMMENDATIONS**

#### **Far East**

1. There is no economic interest for EU public expenditure for the furtherance of any transport objectives related to Europe/Far East trade. There is no problem to be addressed.
2. No extensions of Pan-European Transport Corridors/ Pan-European Transport Network beyond Almaty should be considered for Europe-related transport.

#### **Central Asia/Caucasus**

There may be an economic interest for EU public expenditure for the furtherance of transport objectives related to Europe/Caucasus/Central Asia trade. But this is limited, due to the availability of alternative routes at comparable transport cost levels (including maritime transport via Bandar Abbas), and to still small trade volumes. Therefore, such expenditure should be based on a full prior economic feasibility assessment. Detailed examination of specific routes should be undertaken only after the potential viability of the project, using indicative estimates of likely cost, has been established.

3. Such economic feasibility assessment will without doubt show that the main justification for investments must come from regional transport demands.
4. Because of their oil wealth, countries such as Kazakhstan will become increasingly desirable trading partners, which justifies EU interest in the region and could provide a political and economic rationale for the support of transport developments.
5. EU support justified in this way should be directed in the first place at improving the environment in which transport operates - the legal, customs, bureaucratic, cultural, organisational and border crossing barriers - and consideration should be given to making investment in infrastructure conditional on improvements in this environment as it affects transport operations.



## **C. TRANSPORT BETWEEN EUROPE AND ASIA WITH SPECIAL FOCUS ON RAIL**

*Report prepared with the kind help of the Polish State Railways (PKP)*

### **1. INTRODUCTION**

#### **1.1 Economic situation**

The centre of gravity of the world economy is gradually moving from West to East: from the Atlantic-centered constellation of Europe and the United States of America, to the Asia-Pacific/Indian Ocean Region where the majority of the world population lives. The region will continue to provide some of the main stimulus for growth and development of the world economy for the foreseeable future. Asia will be increasingly important to the economic future of Europe, in the same way as Europe is increasingly important as a prime supplier of industrial equipment and other capital goods for its development. The present crisis of the global financial system, which demonstrates the necessity to orient financial flows back to the real, physical economy, will ultimately lead to an increasing economic weight for Asia, and China in particular, as growth is put on back on more solid foundations.

This situation will have an important influence on the economic future for Europe, including Russia and the NIS as a bridge between Asia and Europe. The transport corridors between Europe and Asia will play a crucial role. The development of rail infrastructure in these corridors is particularly important because of the distances involved.

Eurasian land-bridge rail corridors constitute both a potentially highly efficient and competitive means of access for Europe to the markets of Central, East and South Asia and a powerful instrument to promote integrated economic development for the entire Euro-Asian economic space. The Euro-Asian rail corridors not only provide transport services for existing markets, but should also contribute crucially to expanding markets, especially by providing improved, direct access to the huge interior regions of Asia. The majority of Eurasia's most important cities can be accessed via the main lines and branches of the existing Euro-Asian rail corridor system. And the governments of the region all emphasise the role of rail corridors in promoting growth by stimulating economic activity along their routes.

#### **1.2 The political context**

A large number of international conferences and meetings of heads of government have addressed the development of Euro-Asian transport links in the last few years.

Recent contacts between the governments of Japan and China highlight the new trends in Euro-Asian economic co-operation. During the official visit to Japan of the President of the People's Republic of China in November 1998, China and Japan reached a common view on strengthening their

co-operation towards the twenty first century. Both countries believe that a Euro-Asian land bridge, spanning Central Asia to connect East Asia to Europe, will have a positive influence on the process of building peace and stability for the entire continent. Both countries, recognising the importance of enhancing the transport infrastructure from East Asia to Central Asia, confirmed that they would promote co-operation in this area and issued the “Japan-China Joint Declaration, on Building a Partnership of Friendship and Co-operation for Peace and Development”. China’s internal development and foreign policies attach great importance to the so-called Second Euro-Asian Land Bridge. This is the rail line running from the Eastern Chinese port of Lianyungang via central and north-west China into Kazakhstan and from there via Russia to Europe.

In another example, Poland launched an initiative for a Memorandum of Understanding on the Development of Railway Transport on the Euro-Asian Land Bridge at a meeting of experts in September 1996 with the aim of developing rail transport between Central and Eastern Europe, Belarus, Russia, Kazakhstan and China.

Under various agreements with neighbouring countries, the European Commission has taken a number of initiatives in this field. They involve four groups of countries – the central European countries, the New Independent States, the EEA States and Switzerland, and the countries of the Mediterranean basin – and aim at promoting the interconnection of the Union’s Trans-European Transport Network with these countries’ networks. In 1998 the Commission initiated the TRACECA — Transport Corridor Europe-Caucasus-Asia — project in co-operation with the governments of the region, with financial support from the Union, to promote development of transport on routes from Europe to Asia via the Caucasus.

The UN/ECE is currently extending the AGC, AGTC and AGR networks to member countries in the Caucasus and Central Asia. It is also co-operating with UN/ESCAP (Economic and Social Commission for Asia and the Pacific) in setting up a joint programme for the development of Euro-Asian transport links taking into account the extension of the networks cited and ESCAP’s ALTID project that analyses routes according to traffic data and forecasts.

The following list summarises some of the key conferences on Euro-Asian Rail transport links held in the last few years:

- TRACECA – Joint Working Session on the Co-ordination and Development of the Transport Corridor Europe-Caucasus-Asia, 1993.
- Conference on the restoration of the “Historical Silk Road”. TRACECA International Summit, 7-8 September 1998, Baku.
- Meeting of OSJD Commission II on the elimination of obstacles in train services at border crossings, particularly on borders between SMGS and CIM Regulations, 1996.
- International Symposium on the Economic Development of the New Euro-Asian Continental Bridge Zone, 1996.
- Trans-Eurasian Transport and Trade Policy Summit, 1997.
- Trans Euro-Asian Conference in Almaty, Kazakhstan, 20-23 May 1997.
- Second International Conference Trans-Eurasia 98, Almaty 19-20 May 1998.
- 3rd Pan-European Transport Conference, Helsinki, June 1997.
- International Euro-Asian Conference on Transport, St. Petersburg, 12-13 May 1998.
- International Conference of the Ministers of Transport of TRACECA and BESEC countries, Tbilisi, April 1997
- ECMT Seminar: “New Trade Patterns: New Transport Demands”, 22 October 1998, Antalya.

The UN/ECE is preparing an analysis of the results of these conferences but some broad conclusions emerging from them can already be identified. There appears to be a consensus that any strategy to foster Euro-Asian rail transport should primarily rely on improving the services provided, improving reliability and shippers' confidence in rail. It is unlikely that shorter travel times alone is a sufficient argument to attract traffic away from competing maritime routes. It is more important to reduce uncertainty that currently characterises many rail routes in the region, to guarantee contracted delivery dates. The convergence of national transport legislation and regulations and the extension of international transport agreements, conventions and guarantees are of fundamental importance.

### **1.3 Volume and type of commodities transported**

In 1994, the value of EU trade<sup>1</sup> with the Far East (Japan, Korea, China, Mongolia) exceeded US \$ 180 billion (1994 data) and trade with Central Asia (Russia and former Soviet Union countries) exceeded US \$ 47 billion. Bulk goods — mainly oil, ores, and chemicals — were carried by ship, pipeline and rail. The most important non-bulk goods transported were food, live animals, tobacco, beverages, animal and vegetable oils, machinery and transport equipment and other manufactured goods. The non-bulk goods were carried by both rail and road and are increasingly containerised.

During the five year period 1989 – 1994, trade between Europe and Asia increased as follows:

- bulk trade increased from 158 to 178 million tonnes (+13%)
- non-bulk trade increased from 95 to 118 million tonnes (+24%).

Total trade increased from 235 to 296 million tonnes. Import was much more significant than export and represented 80% of total trade in 1994. Imports increased by 30 million tonnes (17%) over the period and exports increased by 12 million tonnes (24%). The most rapid growth in the trade of bulk goods has been between the EU and Russia, mainly oil and gas.

## **2. EURO-ASIAN RAILROAD DEVELOPMENT**

The growing importance of Asia to Europe's economic future suggests that European rail and other infrastructure investment decisions need increasingly to take account of Euro-Asian perspectives. The importance of the Euro-Asian land bridge will become increasingly obvious as the significance of China to the world economy grows.

The European Union has already agreed to the further development of the Trans-European Transport Network towards ten Pan-European Crete/Helsinki Corridors on the territory of central and eastern European countries. Of particular importance for Europe-Asia routes are the following corridors:

- Corridor no. 2: Berlin-Warsaw-Minsk-Moscow-Nizhny Novgorod.

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1 . Data from OECD 1998 and PLANCO Consulting GmbH.

- Corridor no. 3: Berlin/Dresden–Wroclaw–Katowice–Krakow–Lviv–Kiev.
- Corridor no. 4: Berlin–Prague–Budapest–Constanta/Vidin–Sofia–Thessaloniki/Istanbul.
- Corridor no. 5: Venice–Trieste/Koper–Ljubljana–Budapest–Uzgorod–Lviv–Kiev.
- Corridor no. 9: Helsinki–St. Petersburg–Moscow–Kiev–Chisinau–Bucharest–Dimitrovgrad  
– Alexanroupoli.

These corridors link into the following Europe–Asia routes:

- Trans–Siberian Route: Moscow–Yekateringburg–Novosibirsk–Vladivostok/Ulan Baator–Beijing.
- Trans–Asian North Route: Kiev/Moscow–Chelyabinsk–Druzhba–Alashankou–Liangugang.
- Trans–Asian Central Route: Kiev–Volgograd–Almaty–Aktogay–Druzhba–Alashankou–Liangugang.
- TRACECA: Constanta/Varna–Illichevsk–Poti/Batumi–Baku–Tashkent–Almaty–Aktogay–Druzhba–Alashankou–Liangugang.
- Trans–Asian South Route: Istanbul–Ankara–Tabriz–Teheran–Mashad–Serakhs–Tashkent–Almaty–Aktogay–Druzhba–Alashankou–Liangugang.

There are track gauge changes at the following borders: Poland–Belarus, Slovakia/Hungary–Ukraine, Bulgaria–Ukraine/Georgia, Russia–China, Mongolia–China, Kazakhstan–China, Iran–Turkmenistan.

The Trans–Siberian Railway has the longest history of commercial freight operation between Europe and the Far East. Two other Trans–Asian Routes: North and Central have been in existence since 1992 when the connection between Kazakh and Chinese rail networks was inaugurated at Druzhba station. The TRACECA and Trans–Asian South Route are operational with planned investments for upgrading capacity.

### **Description of the rail lines of the Euro–Asian Land Bridge**

The **Trans–Siberian Railway** runs from Moscow to Vladivostok through Yaroslav, Ekaterinburg and Khabarovsk. There is a ferry from Vladivostok to Niigata on the West Coast of Japan. The Trans–Siberian Railway from Nakhodka (Vladivostok) to Moscow is double track and electrified along its 10 000 km length and has a freight transit capacity of 100 million tonnes a year. In former years the Trans–Siberian Railway demonstrated its capability as a commercially viable transport link from Europe to the Pacific, including Japan. Its importance can be expected to grow again in the future.

In April 1998, in the framework of a UN/ESCAP–OSJD common project, the potential of the Trans–Siberian rail route to develop new services was indicated by a demonstration run of a container train. The 10 500 km distance from the Pacific port of Nakhodka via Moscow to Brest on the Belarus/Poland border was covered in 8 days and 21 hours, implying a transit time saving of about 20 days compared to the sea route between East Asia and Europe.

**Trans–Asian Northern Railway (Second Eurasian Land Bridge).** The so called Second Euro–Asian Land Bridge is the rail line running from the Eastern Chinese port of Lianyungang via central and north west China into Kazakhstan and from there via Russia to Europe. Following the completion of the last missing section between Ürümchi and the Kazakh border in 1990, the 10 900 km route from Lianyungang to Rotterdam was opened for service in 1992.

Since then, major improvements have been made on the 4 150 km section of this line inside China, including double-tracking most of the route (89%) and increasing the length of the electrified section (currently 29%). The Chinese provinces through which this route passes are co-ordinating their investment policies to develop infrastructure, mining, industrial and urban construction projects along the land bridge and there are rail links to all of China's main cities and ports. The Second Land Bridge is some 2 500 km shorter than the Trans-Siberian Railway, and 10 500 km shorter than the 22 000 km sea route. The line is seen as complementary to the Trans-Siberian route rather than a competitive threat in the long term. Once the current economic crisis is overcome, the capacity of both lines can be expected to be fully utilised.

The **Trans-Asia Central Railway** follows a more southern route through Kazakhstan from Druzhba, via Almaty, then through Ukraine and Russia. This link covers the shortest distance from central Europe to Asia. Ukrainian railways operate a total of 22 500 route-km. Practically all sections along transport corridors are double track and electrified. The main border crossings to Poland are at Yagodin and Mostiska, and the main crossing to Hungary and Slovakia at Chop.

The **TRACECA** route travels west from Druzhba into Uzbekistan and Turkmenistan and crosses the Caspian Sea (ferry from Turkmenbashi to Baku) to the Caucasus and on to the Black Sea (ferry crossing) through Azerbaijan and Georgia.

The sections in Uzbekistan and Turkmenistan are largely single track and non-electrified. There is a plan for a 240 km link directly from Turkmenbashi north along the Caspian Sea coast to Bekdash on the Kazakhstan border and further to Tenge, which could shorten the TRACECA route between Almaty and the Caspian Sea.

The Georgian Gardabani/Beyuk Kyasik rail border crossing with Azerbaijan has a link directly to Russia at Leselidze, the link is 559 km long, fully electrified and 49% double track. Rail ferry ports at Poti and Batumi provide rail links with other Black Sea ports including Illichevsk (Odessa), Constanta and Varna. Varna, in Bulgaria, is the only rail-ferry port on the Black Sea equipped with gauge changing facilities allowing suitably equipped wagons to be transferred between European and NIS rail networks without transshipment of goods.

The **Trans-Asian Southern Route** travels south from Druzhba into Iran and Turkey reaching Istanbul and Turkish ports on the Black Sea and Mediterranean. There is a break of gauge between Iran and the NIS countries. Overall, Iran has 5 995 route-kms of railway lines, and railway transport is essential for the development of the country. The Iranian link in the Trans-Asian Southern Route is a single-track diesel only line 2 010 km long from Sarakhs on the border with Turkmenistan to Razi on the Turkish border. Just inside Turkey transshipment is required to cross Lake Van by ferry.

Turkish railways operate the total of 8 607 km of track, and the line of greatest interest to the Trans-Asian Southern Route links Kapiköy on the Iranian border with Istanbul and Kapikule on the border with Bulgaria. There are also rail links from Kapiköy to Samsun on the Black Sea, and Iskenderun and Mersin on the Mediterranean. The Kapiköy/Kapikule line is only 10% double track and 46% electrified.

Completion of a 700 km link between Bafq in central Iran and Bandar Abbas on the Strait of Hormuz in 1995 and the 164 km link between Sarakhs and Mashhad in 1996 made it possible for rail to compete with road for trade between Central Asia and the Gulf. This route goes through Teheran and is rather long. A more direct route between Fariman and Bafq will shorten it substantially.

### 3. TRANSPORT COSTS TO FAR EAST DESTINATIONS

Costs are compared here between modes (maritime shipping, rail or road) on a financial basis, i.e. according to rates paid on the market.

Maritime shipping conference rates for the Europe—Far East route were stable through most of the 1990s at US\$ 3 000 per TEU, until the Asian financial crisis. Non-conference rates were generally 10% lower than this. These rates can be converted to some form of equivalence with available data on road and rail tariffs on a \$ per km basis using the length of the Trans-Siberian Railway as an arbitrary denominator, yielding US \$ 0.25 per TEU-km.

Road freight rates within Europe vary between US \$ 0.9 and 1.3 per 10-t-TEU-km. They are considerably lower (by approximately 50%) for long distance Europe–Asia routes, varying between 0.5 and 0.7 US \$ per 10-t-TEU-km. This price difference can be explained by higher labour costs in Europe, decreasing unit costs on longer distances and differences in fuel taxes.

Rail transport prices in Europe are roughly US \$ 0.5 – 0.6 per TEU-km. For Asian destinations the variations are more prominent (0.3 US \$ per TEU-km in China and 0.9 US \$ per TEU-km in Uzbekistan. Rates are affected by different subsidy levels and differences in the quality of rail infrastructure and topographical conditions.

Transshipment on route adds a heavy burden to costs and the first and last legs of long freight journeys and can have a major impact on costs. Moving goods to or from ports inland, in particular, strongly affects the overall cost of transport by sea. Similar considerations affect rail costs depending on the location of ultimate destinations and origins for goods.

Rail costs can certainly be lowered in the future, because logistical organisation and tariffs have not in the past been optimised for most Europe-Asia long-distance rail transport, with the exception of the Trans-Siberian line. Large-scale transport by sea has existed for centuries and its logistics have been fully optimised. Even so, shipping rates have fallen sharply in the last three years, 30% on the Europe-Asia route. This is not only due to the Asian financial crisis but also due to the dramatic increase in the size of container ships introduced into the market in the recently. When optimised, however, Euro-Asian rail transport can offer major savings in transport time, compared to the sea route. For these reasons, present cost estimates do not reflect the potential competitive advantages of the Euro-Asian rail links in the medium-term.



## **4. COMMERCIAL AND ECONOMIC CRITERIA FOR ASSESSING INTEREST IN INDIVIDUAL ROUTES**

### **4.1 Commercial criteria**

Commercial criteria determine the extent to which a route or corridor is actually used. The principal determinants for route and modal choices are cost and reliability. Other important factors are safety and transit time. Commercial costs do not equate simply to the price of transport services. Apparently lower prices can prove more expensive as a result of lower quality of service which requires more control from the customer, implying higher in-house costs.

Where competition between sea and surface modes exists over long distances, sea is always cheaper because it offers substantial economies of scale over both road and rail and there is no track infrastructure cost to be covered. Port handling charges are, however, significant, so that where frequent transshipment is necessary and is not compensated by the economies of using large ships, transport by sea becomes uneconomic. This situation applies particularly to the TRACECA route, where distances and markets are relatively small and where inland legs of maritime routes are relatively long.

Factors external to transport operations can be more significant than logistical economics. Guards (often armed), stevedores and custom officials exposed to corruption complicate the situation, adding to transit times and uncertainty in meeting delivery deadlines and in the worst cases resulting in stolen or damaged goods. All this adds to costs. These problems are widespread in China and the less advanced central and southern Asian economies. The more border crossings there are, the greater the possibility of delay through these causes. On land routes with many border crossing, such as TRACECA, the situation is serious. Although sea carriers offer tightly controlled door-to-door services they are not immune to such external influences on routes between Europe and the Far East, especially in ports. Road hauliers do use the TRACECA route to Central Asia and overall, the land route is more practical than a mixed land/sea journey.

### **4.2 Investment criteria**

Economic criteria somewhat broader than purely commercial criteria determine decisions on the feasibility of investment in transport corridors. They include the extent to which a route is already developed, the traffic it carries and forecast traffic demand growth, and the willingness of users to contribute to the cost of development. The external costs and benefits associated with the building and use of the proposed route, which include environmental costs, should also be of interest to governments. Economic criteria affect shipper choices only insofar as costs are reflected in prices.

Requirements for investment in additional infrastructure, and, to a lesser extent equipment and maintenance, are the main economic criteria for comparative evaluation of the development of alternative routes. Although it is true that rail services cannot be offered on a route if the infrastructure is absent or inadequate, it does not follow that the existence or creation of infrastructure will automatically generate services or services of competitive quality.

## 5. CONCLUSIONS AND RECOMMENDATIONS

Trans-Asian land routes, and especially the Trans-Siberian Railway, have the potential to compete effectively with shipping for many categories of transcontinental transport. Development of the Euro-Asian land bridge is significant on a world economic scale but more importantly Euro-Asian rail transport development will make an important contribution to regional economic development. Agro-industrial, urban and infrastructure development along Eurasian land bridge corridors will be a central focus for the economic policy of the countries of Central Asia and their neighbours over the coming 30 years.

Development of the Trans-European Transport Network has to be harmonised with and efficiently connected to routes (both present and future) that will be developed on the Asian continent. Work on the subject has been promoted by international bodies including the European Commission, UN/ECE, UIC and OSJD. Work is most advanced on Corridor 2, Berlin – Warsaw – Minsk – Moscow – Nizhny Novgorod. Multilateral co-ordination of projects concerning Trans-Asian Railway Routes is desirable in the framework of the Pan-European Corridors. Co-ordination, through memoranda of understanding and the establishment of joint working parties, is particularly important with respect to harmonisation of contractual documents and technical standards and the time-tabling of investments.

Improvement of legal, insurance and tariff structures and enhanced security are the first priority. In addition, improvements in logistical organisation and the use of automated container handling and GPS and other automatic tracking systems, can enhance the competitiveness of Trans-Asian rail routes. Accelerating research, development and large-scale deployment of new technologies for the modernisation of the European and Euro-Asian rail corridors should be included in the package of co-operative measures instituted.

Development of Eurasian land bridge transport corridors will be fostered by effective action to remove obstacles to border crossings, to limit crime in international transport and harmonise systems of charges and taxation. These issues are addressed in more detail in the accompanying reports and resolutions prepared for the Warsaw Council. ECMT undertakes to disseminate the results of this work, particularly to transport and economic co-operation forums active in the Central Asian region.

*Chapter IV*

**OBSTACLES TO TRADE AND GOODS TRANSPORT**



## **A. THE REMOVAL OF OBSTACLES AT BORDER CROSSINGS FOR INTERNATIONAL ROAD GOODS TRANSPORT**

### **1. INTRODUCTION**

This report is the fifth in a series of follow-up reports to Ministers on the implementation of Resolution No. 50, adopted by Ministers in Oslo in 1984 [CM(84)17(Final)], on the removal of obstacles to international goods transport. The previous reports were submitted to Ministers in 1985 [CM(85)9(Final)], 1986 [CM(86)25], 1990 [CEMT/CM(90)30] and 1994 [CEMT/CM(94)11(Final)]. The main source of information for these reports was a set of responses to a questionnaire which was sent out to Ministries of Transport in the ECMT Member countries. This report, as with the previous four, has been prepared by the UK delegation.

The 1994 report addressed the problems which had arisen as a result of the changes in Central and Eastern Europe. The 1994 report recommended that a further report on progress in removing obstacles to the smooth passage of international goods transport might be made in a few years time.

Since the 1994 report, the membership of ECMT has expanded and with it the number of international borders and thus the scope of the present study. There has been a great deal of investment in border crossing facilities, especially in Central and Eastern Europe, and there have also been a number of multilateral and bilateral initiatives to harmonise the documentation required at border crossings. But the growth in international traffic following the break-up of the former Soviet Union has increased the pressure on border crossing points, creating new capacity problems which have to be overcome. Some official forecasts on the likely increase in traffic volumes on the East – West axis indicate that road transport flows could be up to 5 times greater by the year 2010 (EU Commission Report on the Impact of the Development of CEE on the Community Territory, Luxembourg 1999, p. 121). Border crossing problems are already major hindrances for trade, tourism and traffic, which cause direct and indirect losses to operators and to countries. The proliferation of national restrictions on lorry movements, affecting different times and days, has also contributed to the problem by causing traffic to bunch at border crossing points. Despite much effort that has resulted in an overall reduction in waiting times, there are still a number of border points where average waiting times approach 20 hours. The approach to this report was to evaluate the work done since 1994, take account of the economic and political developments since then, and analyse the remaining obstacles.

This report has three main sources. The principal source is a selection of studies carried out by different organisations provided in response to the Secretariat's letter of 18 November 1997, a number of which are listed in the bibliography. This was complemented by a visit to a number of Polish border crossings. In addition, information was supplied by member countries in response to an invitation by the Secretariat (letter of 4 June 1998). The objective of this paper is to disseminate to a wider audience in the ECMT Member countries the main conclusions of the work which has already been done in this area. In doing so it acknowledges the high quality of work and expertise which was necessary to produce the studies on which it is based, the main findings of which are summarised below.

The visits to border crossings in Poland helped clarify the issues at stake, confirmed a number of the conclusions reached in the reports studied, and demonstrated a number of possible solutions which may reduce the obstacles to freight movements. The Polish border crossing authorities demonstrated a clear commitment to reduce the remaining delays at border crossings, and were unfailingly helpful in presenting information and answering the questions.

## **2. GENERAL ANALYSIS**

### **2.1 Infrastructure**

The PHARE and TACIS programmes in combination with the recipient countries and other international organisations, have invested in infrastructure improvements at many of the border crossings in Central and Eastern Europe (CEE). In many cases the approach roads have been widened, the buildings refurbished, renovated or replaced, and a range of equipment provided. In line with the recommendations of the 1994 report, many border crossings now have the facilities necessary to differentiate user groups, process a number of vehicles at one time, and carry out the required examinations. There remain, however, a number of infrastructure bottlenecks. The most commonly identified bottlenecks are: concentrations of traffic caused by poorly maintained roads; border crossings which cannot yet separate user groups; and a lack of space at some terminals to deal with vehicles which need a fuller examination or security check.

### **2.2 Procedures**

The procedures carried out at border crossings have been analysed within the following framework: firstly, an analysis of the substantial constraints within which border crossing authorities work (falling into three groups); and secondly, an analysis of the specific procedures which may be in place at any one border crossing (falling into four groups).

The first set of constraints for border crossing authorities is the framework of relevant international agreements (see Annex 1) and national legislation. This includes immigration controls, customs controls (such as import and export restrictions) on the goods carried, and the collection of various taxes, fees and duties. The import and export restrictions and documentation requirements are often governed by international regulations, which may or may not have a place in national legislation. The extent to which this constraint can be altered, and the national requirements harmonised, is subject to multilateral and bilateral negotiation. The taxes, fees and duties which are required at many border crossings may be viewed as an important source of government revenue, although as a minimum they are needed to meet the transport and customs infrastructure costs. The level of these charges is generally set unilaterally but increasingly they are influenced by multilateral and bilateral negotiation to harmonise the various categories and political willingness to balance the projected medium- and long-term economic gains from facilitating trade with the stream of revenue currently available.

The second set of constraints is the need to combat fraud and crime. This issue has been the subject of a previous ECMT Resolution, adopted in Berlin in 1997 [CEMT/CM(97)6(Final)]. As the volume of freight has increased, so have the possibilities for fraud. The rate of change of many of the regulations governing international freight offers further opportunities. In particular, the present administrative arrangements under the TIR carnet scheme have offered an increased opportunity for fraud. There are also valid concerns regarding the transport of dangerous chemicals, nuclear materials and drugs.

The third set of constraints are the structural natures of the border crossings and the border crossing authorities, and the cultural ethos of the administrations. These may affect, for example, the degree of inter-agency co-operation and the morale and method of the border crossing personnel. The room for manoeuvre here is unquantifiable, but clearly structural changes and training schemes for management and personnel could have a large part to play. The philosophy of some administrations, and hence of their border crossing staff, is to allow vehicles to pass only reluctantly rather than to recognise the economic benefits of the trade which they represent.

Within these constraints, specific procedures can vary a great deal. There is a considerable range of possible procedures, and the number which are applied varies between the ECMT countries. The possible checks and procedures can be grouped into three categories: the goods carried, the vehicles at border crossings, and the personnel involved.

The procedures which tend to cause the greatest delays at border crossings are the goods checks, which can involve a number of documents identifying or verifying the type and quantity of goods involved, and further information about the origin and the destination. This will include a certificate or guarantee document relating to the import duties or taxes, often a TIR carnet. Examples of the possible procedures relating to goods are given in Annex 2. The normal customs formalities are the checking of documents (CMR, T1, TIR or other guarantee document), certificates, import/export permits and seals. More detailed customs controls may require checking the product origin, destination, quantity and value; paying taxes, duties and fees; and the inspection and/or sampling of goods. The normal formalities can be processed quite rapidly. To the extent that more detailed checks are made regularly, the delays at border crossings will be substantially longer. For example, some countries have imposed restrictions on the export of meat and meat products from certain countries due to outbreaks of animal diseases. In these cases every shipment must be checked in laboratory before entering a country. As a general rule there are no veterinary and phyto-sanitary laboratories at border crossings and therefore a vehicle might stay at the border for several days, until the results from an inland laboratory arrive. There may also be checks made for smuggled goods such as drugs, dangerous chemicals or nuclear materials.

Vehicles are subjected to a range of procedures, relating to safety and emissions standards, required documentation and licensing, and the many possible taxes and fees payable. A fuller list of the possible procedures relating to vehicles is given in Annex 3. The delay which these procedures cause is a result of the scale and complexity of the paperwork, and the time needed to, for example, weigh each vehicle or 'dip' the fuel tanks if the border crossing requires it.

The third group of procedures concern the personnel transporting the freight. There will be checks relating to passport control and visa control. Extra delays may be caused if visas have to be purchased at the border, or if the vehicles are searched for illegal immigrants.

The extent to which these specific procedures are streamlined, within the general constraints, will affect the length of the queue and the time vehicles have to wait at the border. The methods used for this streamlining will crucially affect the success rate in enforcing international conventions and

agreements, and detecting fraud and crime. All factors, including the overall waiting time, will be affected by the skill level and morale of the border crossing authorities.

### **3. FINDINGS**

#### **3.1 Infrastructure**

The various studies report that basic infrastructure at many road border crossings is adequate. They recommend that further investment is needed to remove some remaining bottlenecks. The border crossings which are most likely to still require substantial infrastructure investment, according to the majority of the reports, are on the eastern borders of the CEE countries. This is in view of projected traffic increases and the expected accession of some CEE countries to the EU (which will result in the removal of border controls on the western side). This investment would ensure that there is an adequate number of approach lanes to each road border crossing, in order to enable preselection of traffic. There would be adequate parking space, examination facilities and equipment to enable detailed checks to be made on selected vehicles.

Many border crossings do not yet have suitable computer systems in operation. Where there is a computer system it sometimes lacks vital equipment, such as printers. Furthermore such systems are often incompatible with other border crossings, with other authorities and organisations nationally, and with relevant authorities internationally. These factors combined result in extremely slow customs clearance, as a great deal of paperwork has to be dealt with by hand. It also makes it difficult to verify guarantees and the movement of goods to inland customs terminals and on transit. This is one area where there has not yet been adequate infrastructure investment, or regional co-operation.

#### **3.2 Procedures**

All of the studies conclude that the greater part of the delays still experienced are due to border crossing procedures, rather than infrastructure requirements. In many cases adequate infrastructure is underused. As a result of this the conclusions and recommendations below concentrate on an analysis of the causes of this underuse, and the procedural reforms which could help to remedy the situation.

Many of the procedural problems in the past were due to significant differences between the documentation requirements of many non EU/EEA countries. The work done by ECMT Member countries towards the implementation of Resolution No. 50<sup>1</sup> has improved this situation. This report recognises the importance of all of the bilateral and multilateral initiatives which have contributed towards a substantial harmonisation and simplification of many of the documents required at border crossings. These include, for example, the introduction of the Single Administrative Document (SAD) and the continuing work on the TIR system. An IRU proposal to the UN/ECE on the introduction of a new annex on facilitating border controls (personnel, vehicle, goods) into the 1982 UN/ECE

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1. See para 1.



International Convention on the Frontier Controls of Goods has been accepted by the relevant UN/ECE Working Parties and a legal proposal would be submitted by the IRU in 1999. A harmonised weight certificate for goods transport vehicles, elaborated for the SECI region by the IRU at the request of the UN/ECE Transport Division, which should be recognised and accepted by all border control bodies in the South-East Europe could also be mentioned here as a positive initiative in addressing border delays.

Analysis of the various procedures has produced four general conclusions. Firstly, the sheer variety of fees, duties and taxes which are charged at many border crossings can cause delays. Secondly, there is little understanding in many non-EU/EEA ECMT border crossing authorities of risk-analysis and selectivity (RAS) techniques (see Annex 4). Thirdly, there is a need for a border crossing manager at every border crossing, and for clear lines of responsibility to be established. The variety of authorities operating at border crossings, whose activities are generally not co-ordinated, leads to fragmentation and protraction of the clearance procedure. Fourthly, the success of some neighbouring countries in organising jointly run border crossings or operating juxtaposed controls are reducing delays at the borders concerned. If this level of bilateral co-operation is not present then many controls and checks are needlessly duplicated, causing unnecessary delays.

The ECMT countries which are undergoing the transition from a command economy still have many border crossings which try to enforce 100% control of all vehicles entering and leaving the country. This is in contrast with the EU/EEA countries which, on the whole, restrict the control on each vehicle to the basic checks necessary to verify a small number of documents and maintain relevant statistics. The practice of 100% control of the vehicles at border crossings in non-EU/EEA countries has allowed for the introduction of many of the fees, duties and taxes which are currently charged at the border crossings, and the subsequent reliance on the income from these is likely to be a restraint on the transition to the use of more minimal checks in line with RAS techniques.

The second restraint is the evident difficulty of covering infrastructure costs, not to say internalising the external costs of road transport without imposing additional charges at border crossings. The objectives of facilitating trade and maintaining 100% control at border crossings clearly pull in different directions.

Many of the problems caused by the various charges levied on users of border crossings result from the procedures used to assess and collect them. The assessment can involve many measures, including checking the weight and type of the cargo, the amount of fuel in the tank or refrigeration unit, and calculation of the charges applicable to different types of vehicle travelling for different purposes. While there has been a concerted effort to harmonise, for example, the goods documentation for transit vehicles, there has not been the same kind of effort to harmonise the types and categories of charges levied at the borders of the non-EU/EEA ECMT countries, although work is underway on gathering information.

As has been noted, the prevention of fraud and crime has acted as a constraint on border crossing authorities. However, the success rate, in the detection of fraud and crime, is not helped by trying to check and search every vehicle which crosses a given border. Equally, the success rate does not have to be compromised in the interests of facilitating trade. The studies which have been conducted argue that success rates in detecting fraud and crime (including illegal immigration and smuggling of controlled goods) are far higher when RAS techniques are employed. These techniques allow most vehicles to be processed faster, while the selected vehicles can be removed from the queue to specialised buildings for thorough checks. These specialised buildings are currently underused at some border crossings.

The current situation at many non-EU/EEA ECMT border crossings is that superficial searches are given to every vehicle, preceded by inadequate use of opportunities for questioning drivers and for visual assessment of the vehicles in queues. More detailed searches, if they are carried out, are guided mainly by intuition or unreliable information about certain companies and drug routes. The success rates tend to be unimpressive. There is often no risk analysis or understanding of how to reliably test risk profiles. The selection which does exist is therefore not based on sound criteria. The information which is collected on suspected companies or individuals is neither reliably checked nor shared between the relevant authorities or neighbouring countries. Road transport associations, especially with their well-developed data bases and follow-up of the hauliers' TIR files, could be one of the main partners of their competent authorities in fighting fraud and on proper implementation of RAS techniques at national level.

The minimum necessary vehicle and goods checks can be relatively quick. Transit traffic can be subject to a minimum customs check of a simplified documentation package and truck seals. This should be conducted in an separate lane from other vehicles. This would allow for faster processing and reduced delays, and should free up customs officers to engage in RAS techniques. The introduction of minimum checks would allow for target processing times to be set for the majority of vehicles. A 50% reduction of existing average waiting and processing times within 1 – 2 years, with the overall objective of a target of no more than 1 hour, could be suggested. For transit trucks transporting goods under the cover of the TIR carnet the target time of less than 10 minutes could be recommended. Targets should also be set for reducing peak waiting times. With this form of streamlining in place, waiting times could be further reduced if there are an adequate number of inland customs clearance centres, including veterinary and phyto-sanitary clearance.

All of the studies highlight a number of problems arising from the organisation of many border crossings. The lack of co-operation between customs and other border crossing authorities often leads to a disjointed and inefficient overall process. Some of these difficulties result from an unclear functional division between the various authorities. In addition, different authorities may have different operational philosophies. The main problem is the lack of a clear line of responsibility for the functioning of each border crossing as a whole. The need for an integrated border crossing service indicates a clear requirement: the appointment of a border crossing manager for each border crossing. In addition, there is a need for regular consultation and communication between the various border crossing authorities internationally, nationally, and within each border crossing. For example, regular meetings between national road transport associations and competent authorities on border crossings could be an efficient pragmatic solution for identifying problems and working out solutions for them.

There are further problems arising from the structure and management of the customs authorities in some non-EU/EEA ECMT countries. There is a tendency towards a 'top down' structure which does not allow for adequate exchange of information between customs headquarters and border officials. This discourages the necessary feedback from personnel and can also lead to an inflexibility in the staffing levels at border posts. The morale of many border crossing personnel is also low, usually due to the working conditions which includes the rate of pay. At border crossings where the pay is much lower than market rates, corruption can become institutionalised while well-trained staff often move to the private sector.

A number of the reports studied cite instances of ECMT Member countries beginning to jointly operate border crossings. Those countries which jointly control border crossings or operate juxtaposed controls have succeeded in considerably reducing waiting times. Such measures sensibly avoid the duplication of controls and checks, and act as a further spur towards the simplification and harmonisation of customs controls and the documentation required. It should be noted that the level of bilateral co-operation required to jointly run border crossings and operate joint customs clearance can

be difficult to achieve. Bilateral agreements require cross-departmental support and expertise from both of the countries concerned in order to overcome these difficulties.

The Swiecko border crossing on the German/Polish border is a good example of joint customs clearance. A large infrastructure houses identical German and Polish customs procedures within the same building. All of the procedures are harmonised with EU requirements. Poland has made a great effort to reform national laws, customs procedures and the overall operation of border crossings in order to harmonise with the European Union. The level of co-operation between the German and Polish border crossing authorities is equally important. The result, at Swiecko, is a streamlined and efficient overall process which has contributed to greatly reduced overall waiting times, while retaining the integrity of the border as a point of control. Another big border crossing, the Kukuryki on the Polish/Belarus border, has all the necessary infrastructure and conditions for Polish and Belarus officials at the crossing to work jointly within the same building if an agreement on this between the respective government authorities can be reached.

## **4. RECOMMENDATIONS**

### **4.1 Infrastructure**

The international funding framework currently in place is sufficient to address the remaining infrastructure problems. The reports examined recommend that such help should fulfil two conditions: the aim should be to enable all ECMT countries to analyse infrastructure requirements in the future; and international infrastructure investment should be tied to procedural reforms and vehicle waiting time targets in line with the recommendations below.

It is clear from the studies examined that traffic studies are needed in order to reliably predict traffic volumes at present or future road border crossings, this is particularly so in the context of the development of international through routes such as the Helsinki corridors. International infrastructure funding should prioritise funding applications for the infrastructure required to jointly run border crossings. International funding should also prioritise the western borders of the CIS countries, in light of the expected accession of some CEE countries to the EU.

ECMT countries will need to co-operate regionally about the development of computer systems which can be used by all border crossing authorities within that region. The emphasis should be on a fast, reliable and compatible flow of information, and the computer network should be geared to supersede a great deal of the paperwork. One long-term aim should be the direct trader input of required information. The expertise from a large range of organisations should be utilised in this area, including associations such as the IRU.

## 4.2 Procedures

Application of the relevant transport conventions (see Annex 1) will streamline procedures. This will also help achieve equal treatment, non-discrimination and the predictability of administrative actions. Specifically, enforcement of international transport conventions should not discriminate between domestic and foreign hauliers. Where there is national legislation which duplicates or contradicts controls required for enforcing international conventions there should be an effort towards harmonisation.

Further harmonisation and simplification of vehicle and goods checks (and the relating documentation) by multilateral or bilateral agreement, continuing the work that has been done towards the implementation of Resolution No. 50 will further assist. Work towards multilateral or bilateral agreements which make annual multi-entry visas available to professional drivers should be continued. The ECMT Recommendation [CEMT/CM(98)9/FINAL] is helpful in this respect.

All ECMT Member countries should work towards simplification of the categories of the taxes, fees and duties which are charged at border crossings and ensure transparency in their application. This process should aim to ensure the minimum of inconvenience to freight vehicles at border crossings. Where countries are seeking merely to cover infrastructure costs, rather than raise revenue generally, the imposition of additional charges at the border should be avoided.

More streamlined customs procedures for the majority of vehicles crossing at border points are needed. A simplified documentation package for transit freight, consisting only of the Cargo Declaration being used as a Community Transit (CT) document or TIR document and a Transit Advance Note, would help achieve this. Further documentation should only be required at the point of final clearance for imports and at the point of dispatch for exports. Adequate provision should be made for inland customs clearance. Vehicles which are to undergo more detailed checks at border crossings should be removed from the queue to specialised examination buildings, where they are available. If adequate records were kept of all detailed searches and the success rate in detecting fraud and crime this would enable targets clearance times to be set.

All countries which do not yet have reliable risk-analysis and selectivity techniques (RAS) in operation should consider adoption of such an approach in order to ensure effective targeting of vehicles for detailed checking. Train the Trainer (TTT) schemes should be established and monitored, with the aim of implementing RAS strategies at all border crossings. PHARE, TACIS and Interreg currently run schemes which focus on training and shared expertise, and these programmes should be encouraged and co-ordinated. In addition, regular liaison between customs authorities can build up intelligence about vehicle movements and assist in the effective targeting of checks.

With the aim of providing an integrated border service, ECMT Member countries should consider the appointment of a manager at each border crossing, with overall responsibility for the efficient operation of the crossing. The role would be to co-ordinate the activities of the various bodies operating at the border crossing. The manager would also be responsible for traffic management at the crossing.

There is a need to ensure clear functional divisions between the relevant authorities, to avoid the duplication of checks or procedures and to ensure adequate co-operation. All authorities involved utilise the concept of an integrated border service. This may be helped by increased contact with transport and freight operators' associations. Furthermore there have to be mechanisms within the national border crossing authorities to ensure adequate feedback from the border crossing personnel to the national headquarters. These recommendations may require training in management skills to

implement, and to ensure continued improvement it may be necessary to establish public or private bodies which are in a position to provide and monitor such training programmes.

To ensure objectivity by border crossing staff, their salaries' linkage to the receipt of taxes, duties or fees levied should be transparent. Furthermore, salary levels should be as close to market rates as is economically viable. Many of the recommendations above rely on training personnel, and the rate of return would be compromised if the recipients of such training schemes were to move to the private sector in search of better working conditions and higher salaries. Therefore all border crossing authorities should implement staff retention schemes, and regularly consult with employee representatives about working conditions and salary levels. The effectiveness of staff retention schemes should be independently monitored.

ECMT Member countries which share a border should co-operate at a bilateral level with the aim of establishing jointly run border crossings, joint customs clearance, or the operation of juxtaposed controls. The process of harmonising and simplifying the procedural requirements at a regional level, as recommended above, should make joint or juxtaposed border controls a realistic objective at many border crossings. However, considerable political will is required to establish joint customs clearance if the current procedures differ greatly. Detailed negotiations are required to sufficiently harmonise the procedures, and this process may be helped by involving experts from other countries, international organisations, successful jointly run border crossings, or private consultants with relevant experience, in addition to the local and national border crossing authorities.

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2. "*Barriers to Goods Transport Between East and West*". Federal Ministry of Transport of Germany and the Ministry of Transport and Communications of Finland. January 1997.
3. "*Documentation and Customs Procedures*" Report. Trade Facilitation, Customs Procedures & Freight Forwarding (TRACECA). 1996.
4. "*Border Crossing Study Phase 1 of the borders between the EU/CEEC and NIS – BCPROJ 0823*". Final Report. BCEOM. December 1996.
5. "*Rail Without Frontiers*". UIC.
6. "*Report of Study Mission to Identify Major Border Crossing Bottlenecks*". Ove Arup & Partners, July 1995.

## **ANNEX 1**

### **Selected international road transport Conventions and Agreements**

Selected road transport conventions and agreements are:

- Convention on Road Traffic (Vienna Convention, 1968).
- European Agreement supplementing the Convention on Road Traffic (1971).
- Convention on Road Signs and Signals (Vienna Convention, 1968).
- European Agreement supplementing the Convention on Road Signs and Signals (1971).
- European Agreement concerning the Work of Crews of Vehicles engaged in International Road Transport (AETR, 1970).
- Convention on the International Carriage of Goods by Road (CMR, 1956).
- European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR, 1957).
- Agreement on the International Carriage of Perishable Foodstuffs and on the Special Equipment to be used for such Carriage (ATP, 1970).
- International Convention on the Harmonisation of Frontier Controls of Goods (1982).
- Customs Convention on the International Transport of Goods under Cover of TIR Carnets (TIR Convention, 1975).

## **ANNEX 2 (from item two in the bibliography)**

### **Possible procedures relating to the goods carried**

Possible procedures relating to the goods carried:

- Normal customs formalities (checking of documents (CMR, T1, TIR or other guarantee document), certificates, import/export permits, seals).
- Detailed customs controls (product origin, destination, quantity, value, payment of duties and taxes, inspection of goods, sampling).
- Checking for health and product safety (veterinary and phytosanitary inspections).
- Quality inspection of perishable goods and inspection of dangerous substances.
- Other checking of goods (import and export embargoes, etc.).
- Value-added tax.
- Other taxes.

## **ANNEX 3 (from item two in the bibliography)**

### **Possible procedures relating to vehicles**

Possible procedures relating to vehicles:

- Fuel taxation of vehicles, tax-free fuel (in fuel tanks of trucks).
- Taxation of the fuel needed for running the refrigeration units.
- Vehicle tax, road tax, traffic charges, transit fees.
- Green Card for vehicle insurance (third party insurance) or national insurance.
- Transport authorisations (bilateral, ECMT, etc. authorisation).
- Payments for special permits.
- Statistical data.
- Weights and dimensions.
- Provision concerning working and driving hours.
- Driving license.
- Vehicle certificate.
- Road worthiness of vehicles and recognition of vehicle licensing.
- Checking of compliance with ADR and ATP provisions.
- Customs security of transport vehicles.

## **ANNEX 4**

### **Risk-Analysis and Selectivity (RAS) techniques**

Risk-analysis and selectivity (RAS) techniques aim to identify risks and focus control efforts on those areas. In this context the risk areas will be the possible ways of criminally, fraudulently or accidentally breaking the laws and regulations governing the movement of passengers, vehicles and goods across borders. A risk profile will assess the likelihood of certain types of violations within risk areas. This risk profile can then be used to select passengers, vehicles and goods to check in detail. If applied well, the risk profile will maximise the detection rate while causing the least possible inconvenience to the movement of vehicles across the border.

The process of risk-analysis involves collating and statistically processing the necessary information to keep the risk profile accurate and up to date. This is a sophisticated process, which requires computerisation and continual monitoring of success statistics and intelligence information to maximise the results. However, in the absence of this technology much can still be achieved. It is vitally important to ensure that all staff understand the RAS principles, and are trained in their application.



## **B. THE REMOVAL OF OBSTACLES AT BORDER CROSSINGS FOR INTERNATIONAL RAIL GOODS TRANSPORT**

### **1. INTRODUCTION**

When considering the removal of obstacles at border crossings the situation regarding road and rail is significantly different. In the interests of improving the situation for both modes, it will be helpful if the two are not confused. That end to end journey time matches what the customer wants and is prepared to pay for matters for both road and rail. Beyond this there is little similarity.

For some freight customers, the journey time they are looking for is the shortest possible - for which they are prepared to pay a high price (e.g. the case of high value goods or where a manufacturer holds minimum stocks). For other freight customers transport cost is more important and journey time secondary (often the case with bulk goods).<sup>1</sup> Transport time is not the only issue, punctuality and reliability are at least as important. Rail is frequently criticised by forwarders and shippers for poor reliability and this is widely considered an obstacle to greater use of rail. Potential new markets for rail transport generally require high levels of reliability.

Customers for long distance rail passenger services also make trade-offs between journey time and price (for example the difference between business and leisure travel) - but in the context of border crossings any comparison with other modes, air, private car, and coach, is complicated. In all cases the length of journey time has to be seen in the context of market and price, and the overlap between road, rail, and air markets is not as great as may widely be believed.<sup>2</sup>

If there were no formalities at a frontier: passport, customs, etc., a road vehicle would not need to stop there at all. However a road vehicle must stop elsewhere on the road for the driver's meal and other breaks. Stops of several hours are also required to allow the driver to sleep during journeys going beyond one working day (unless the vehicle has two drivers, or there is a change of driver or even a change of tractive unit at a depot or other agreed hand-over point). Such stops are required by law.

In contrast, passenger and freight trains do not stop specifically for crew meal breaks or to allow the crew to sleep since train crews are routinely changed at convenient points en route<sup>3</sup> (even for journeys within national boundaries) in order to optimise the use of train crew. Locomotives may also be routinely changed at convenient points to give more productive use or to allow for maintenance.

For international services however, except for certain long-distance passenger services, the current practice is usually to change locomotives and crews at frontiers. Locomotives are routinely changed:

- because of technical incompatibility of signalling and electrical systems;
- or to give more productive use;
- or to optimise the organisation of maintenance.

Crews are changed at borders:

- either because they are not qualified for cross-border operation;
- or because it is not the tradition of the railways to use foreign crews;
- or because, as already noted, changing optimises the use of staff.

Border points do not usually serve other operational functions than for changing locomotives and crew so the train would not stop there if there were no border, although there are certainly exceptions. Although changing locomotives and crew may not lengthen journey times to the extent of reducing the commercial attraction of a service, they increase the risk of delay, affecting reliability. Costs are increased because locomotives and crews have to be sent to border-points to await trains and infrastructure has to be provided to accommodate the operation.

Finally, and most fundamentally, trains run to timetables<sup>4</sup> and a distinction must be made between:

- a scheduled stop for railway purposes which still permits a commercially acceptable end to end journey time and does not generate unacceptable costs;
- a scheduled stop which should be shortened or eliminated to meet commercial requirements or reduce costs;
- a delay which occurs when a scheduled stopping time is exceeded;
- time lost due to customs, veterinary, phyto-sanitary and other inspections.

Conditions at borders vary enormously and it is useful to make a distinction between:

- the borders within the European Union and EFTA;
- the borders between the European Union and the PECO countries, and the borders within the PECO countries;
- the borders between the PECO countries and the CIS or Baltic States where there is a change of track gauge.

This paper looks at each of these three border situations in turn.

## **2. WITHIN THE EUROPEAN UNION AND EFTA REGION**

### **2.1 Technical aspects**

The railways within the European Union and EFTA do not face intractable "technical" difficulties at borders as ways around technical differences exist. Which solutions should be adopted in each

specific case is essentially a commercial decision to be based on cost effectiveness. The following positive features should be noted:

- there is no difference in the track gauge<sup>5</sup> between the countries of the EU and EFTA except between France and the Iberian peninsula;<sup>6</sup>
- the vast majority of lines used by international traffic in the EU and EFTA are within the UIC agreed International Standard Loading Gauge;<sup>7</sup>
- there is general agreement that the cost of increasing the loading gauge everywhere to accommodate new traffics (e.g. larger containers) could not be justified, but that the structure gauge<sup>8</sup> could be increased on particular lines where there is a particular need;<sup>9</sup>
- there are internationally agreed UIC standards for wagons and coaches which allow vehicles built to these standards to run internationally without impediment (see Annex 1);
- whilst there are differences between the various traction power supply systems in use, the cost of changing to a single standard system would be prohibitive — it is cheaper to get round the problem, where necessary, by incorporating more than one system in the locomotives and power cars required to work over the lines concerned;
- whilst there are differences between the various signalling systems in use,<sup>10</sup> a) this will be resolved in the long term by a new internationally agreed signalling system, ERTMS/ETCS,<sup>11</sup> and b) in the interim it is cheaper to get round the problem by incorporating more than one system in the locomotives and power cars required to work over the lines concerned;
- the additional cost of producing new locomotives and power cars incorporating more than one power supply system and/or signalling system has come down significantly and is now of the order of only 10% (with the inclusive price of such a locomotive now less than the price of a single system locomotive some years ago).

## **2.2 International freight traffic**

International rail freight has a very long history indeed, reflecting the age-old need for international trade and for manufacturers and producers to reach distant markets for their goods and produce. In the European Union and EFTA, international rail freight accounts for 44% of the total volume of rail freight. Annex 1 describes the development of international rail services in Europe and key co-operative agreements between railways that facilitate international operations.

## **2.3 The present situation**

The present situation within the European Union and EFTA can be summarised as follows.

### *Passenger*

Passport and customs checks have largely been withdrawn from most border points (or reduced to special or spot checks) either under the European Union-wide provisions or under the provisions of the Schengen agreement.

High speed train-sets (for example Eurostar: Paris-London, Brussels-London; Thalys: Paris-Brussels-Amsterdam/Cologne) run across borders without stopping.<sup>12</sup> The sets are equipped to cope with the different power supply and signalling systems installed on the routes over which they operate. The train crews have (or have learnt) the languages for the routes over which they operate and have

also learnt the different signalling systems and operating rules. Naturally, as is essential for any driver, they have learnt the routes over which they operate.<sup>13</sup> Other non-stop services using high speed train-sets are running across borders without stopping or the services are in the process of being set up.

Passenger trains hauled by conventional locomotives generally stop at borders to change both locomotives and train crew. The stop takes no more than 10-15 minutes, which makes little difference to end to end journey times of 5-6 hours or more, although it does become significant for journeys of under 3-4 hours on routes where there is competition from air. There are a limited number of locations where the train goes beyond the border for a short distance without changing locomotive or train crew. This includes one or two local cross-border services, and one or two services operated by multiple units.

The elimination of the border stop in the case of most conventional routes would not, on its own, significantly shorten journey times. Significant reductions in journey times can generally only be brought about by fairly massive investment, notably in new or upgraded lines to eliminate curves and other restrictions and also in new rolling stock, to permit higher speeds throughout the journey. The market determines the requirement for shorter journey times.

### *Freight*

Customs, veterinary, and phytosanitary declarations and inspections have either been withdrawn under European Union legislation, or transferred to the origin or destination point for international goods movements.

Freight trains fall into three categories:

- Trainload (or block trains), where a complete train (usually of one type of goods) goes from origin to destination without any re-marshalling on the way.
- Wagonload, where wagons are loaded by different senders at different points and forwarded in ones or two's for different destinations. In the traditional way they may be shunted two or three times during the journey, and will form part of different trains at different stages of their journey. Shunting is a time-consuming process, necessitating very costly marshalling yards, and leading to long journey times.
- A combination of the two (consolidated wagonload) where wagonload traffic is marshalled into a train at as early a stage as possible, and is then run as a full train as far as possible before being split up for final delivery. Where it is necessary to remove or add wagons on the way this is done by adding or removing a block of wagons according to a pre-arranged schedule at a point fixed in advance. The principal sections of the journey are therefore covered without disruption in the manner of a full train. Stops for attaching/detaching are reduced to a minimum and the facilities required for attaching/detaching are reduced to one or two sidings. The benefit is much lower costs and shorter journey times. EurailCargo is an international example of this type of service.

Not only does the type of train have an important impact on journey time regardless of border crossings, but train type also influences the amount of time spent at the border.

Freight trains in general change locomotives and train crew at borders (there are some exceptions to this where both crew and locomotive work through for a short distance). The time necessary to change a locomotive on a freight train is of the order of 30-40 minutes.<sup>14</sup> Such a change on its own (or even two or three such changes) is of little consequence in the course of a cross-continent journey

lasting 24-48 hours. What matters more is that time is not lost for other reasons, either at the border or elsewhere. In the case of shorter journeys crossing several frontiers, and such routes exist in Europe, the time taken by locomotive changes may be commercially significant.

In this context the freight market divides into two broad groups of customers. There are those who require relatively short journey times and a relatively high level of punctuality, i.e. freight trains with almost the characteristics of passenger trains. Reliability is particularly important to customers in many growing transport markets. There are other customers for whom the journey time is not so critical, nor is the precise time of arrival (although they need know to within a few hours when they can expect the train). To make any difference to most existing freight customers the typical international journey has probably to be shortened by between 4 and 8 hours, for instance so that the train arrives in the morning instead of the afternoon, or arrives a day earlier.

Where there are clear commercial and cost advantages in not changing a locomotive at a border, a design of locomotive which will work with the different power supply and signalling systems relating to the lines over which it will work is used.

## **2.4 What more needs to be done by railways**

The way forward for passenger services is relatively clear and has already been outlined above. This section and the conclusions that follow deal exclusively with freight services.

There have been undue delays at borders within the European Union and EFTA in the past. Governments, the European Commission and railways have been aware for some time that there are ways in which the overall journey times of international freight trains in the European Union and EFTA could be shortened, and the movement of trains through border points streamlined. The following approaches have been identified:

- eliminating shunting and marshalling, as far as possible, at any point en route (and not just at borders), for instance by extending the “EurailCargo” principal;
- improving the transmission of train operating information from the trains originating point to the border crossing point — progress is being made in some cases on a bilateral basis;
- improving the transmission of the consignment notes, which relate to the forwarding of each wagon or group of wagons on a train (or the whole train when there is only one destination);
- improving the flow of information in real time on the location and expected time of arrival of trains and wagons;
- aligning freight train timetables on each side of borders more closely to eliminate waiting time (taking account of the consequences of freight trains arriving late at the border point);<sup>15</sup>
- looking at the costs and benefits of changing crews and locomotives at points other than at the border;
- assessing the cost consequences of freight trains running late in terms of the need for additional resources.

A recent study carried out for the European Commission<sup>16</sup> identified significant problems at specific crossing points. Overall the report confirmed the importance of pursuing the approaches to improving services listed above. The railways are working together within the UIC to tackle all of the issues listed.

## **2.5 What more needs to be done by Governments**

Nevertheless, important differences in technical standards and operating rules remain and which prevent the uninterrupted movement of rail traffic across borders. These make it necessary to change locomotives and crews at frontiers. In some cases, these changes do not fit well with optimising railway operations (in relation to locomotive maintenance, managing crew working schedules, etc.).

There are around 15 different and incompatible signalling/command and control systems in the region with different locomotives required for each. To overcome these differences and exploit progress in information technology, the European Community has supported the development of the European Rail Traffic Management System by the railways. This should form the basis for standard Europe-wide specifications for signalling in the future.

Data has to be exchanged between railways, intermodal operators, forwarders and shippers. Some for the operation of trains, some for logistic and commercial purposes. Interfaces between the IT systems of the railways are incomplete so paper documents are often exchanged at frontiers, with inevitable risks of loss, error and delay and associated cost. This data processing incompatibility also means that railways lose the opportunity to offer the increasingly complex logistic services customers expect from other modes. There is a need for Europe-wide specifications to provide for efficient, seamless flows of information. Governments, in co-operation, could play an important role in brokering an agreement — in a short time frame — between railways and electronic equipment manufacturers on standard software and electronic protocols.

Other technical and operating divergences that may affect competitiveness are to be found in safety regulations and the qualifications of train crews that work across borders, and in rolling stock design and measures to control noise from freight wagons. There is a role for government action in these areas and technical harmonisation falls within the competence of the European Community, including in regard to creating a single market for railway equipment.

The European Commission believes that there is a strong case for governments to set up a process for drafting and adopting technical specifications that would improve interoperability, with these common specifications accompanied by independent conformity assessment and mutual recognition of certification. This would mean a change from the current practice by which railways develop standards and assess conformity without government.

## **2.6 Conclusions relating to border crossings within European Union and EFTA States**

With the substantial elimination of customs and other border checks, improvements in railway operating procedures and developments in railway technology, generalised problems of delays at borders have been much reduced.

There remain specific problems at certain borders, and there is still much that the railways can do to further streamline operating procedures and otherwise reduce or eliminate lost time.

In this context the principal yardstick against which potential improvements should be measured is commercial cost effectiveness. In some cases benefits accrue to the network, not just to the specific route or border concerned, and these system-wide benefits should be included in the assessment.

Whilst government assistance and encouragement to railways in making further improvements might prove useful, the freedom of railway company management to make changes on a commercial

basis in terms of overall costs and benefits should not be compromised. The drive for change should come through genuine exposure to the commercial pressures of being solely accountable for financial results, including the pressure of the existing exposure to intermodal competition in those areas where the markets for more than one mode overlap.

Through their association, the UIC, the railways standardise equipment for the task of providing international services. The approach has been to develop low cost solutions to get round differences that would be expensive to eliminate. Significant technical differences remain. These present a major obstacle to the development of a single market in equipment manufacturing and procurement. Moreover, under current procedures delays in certifying new equipment slows technological innovation, hampering the competitiveness of rail. The impact of technical differences purely in terms of border delays varies with the route in question and is not significant on many routes. Whether there is a need for governments to consider taking over responsibility for the preparation of common technical specifications and railway operating rules to advance inter-operability is a major issue for debate. The European Commission will issue a communication on this subject during 1999 as a first step towards a decision by the European Council. In determining the best outcome, Ministers will have to weigh the likely cost and efficiency of government agencies doing this work against the track record of regulation by the railway industry itself.

The governments and railways of countries preparing for accession to the European Union will be brought into to the process of adopting the common signalling system under development and will have to prepare for implementation of any common IT and other technical specifications and operating rules adopted at EU level. Where common standards are agreed there will be significant benefits in other European countries also adopting them.

### **3. FRONTIERS BETWEEN EU AND CENTRAL AND EASTERN EUROPEAN COUNTRIES AND WITHIN CEECs**

As regards the frontiers between the EU and the countries of central and eastern Europe, and within the CEECs, there are particular considerations in addition to those listed for the EU and EFTA region which are no longer found (or only exist to a much lesser degree) within the EU. As an example, details for the Poland section of Corridor II (Berlin to Nizhny Novgorod) are given in Annex 3.

For passengers there are the police or immigration passport checks. The Schengen agreement requires strict controls at the frontiers of the European Union. On daytime trains checks by customs officers and police are made on the trains during the course of the journey. On night trains there is a significant problem since the customs and police authorities do not have confidence in the sleeping car attendants and so insist on waking passengers. This is not acceptable in the longer term, and could threaten the survival of this night traffic which is very important in the countries of central and eastern Europe.

For freight traffic there are few common frontier stations. Wagons are usually sorted in the frontier marshalling yards of each country, where customs, veterinary, and phytosanitary inspections

are also made. Efforts should be made to transfer both railway operations and non-railway procedures to the origin or destination stations, or where this is not possible, at least to establish common frontier stations.

The sorting of wagons at frontiers can and should be avoided in many cases. Sorting at the main marshalling yards should be as precise as possible and arrange wagons according to their ultimate destinations.

#### **4. BETWEEN CEECs AND CIS OR BALTIC STATES**

The railways of central and eastern Europe have standard gauge track. The railways in the CIS and the Baltic States operate on the Russian broad track gauge. For frontiers where there is a change of gauge there are additional problems to those described so far.

For passenger services the change of gauge means that passengers have to change trains, except on those services where it is the practice to change the bogies on the passenger coaches.

For freight services it has been possible in some cases to change the wagon bogies, but it is more common to tranship goods from standard gauge wagons to broad gauge wagons and vice versa. This operation is carried out at transshipment stations at high cost, with large losses in terms of time and the constant risk of losses from damage to the goods being transferred. In these conditions, the time taken for all the procedures at the border tends to be enveloped in the large amount of time taken in purely railway operations.

An elegant solution to the gauge change problem is the use of bogies with wheels and axles that are adjustable to different track gauges (see Annex 2). The full time savings from deployment of such systems will only be realised provided that all the other sources of lost time are controlled. Taking account of its cost (an additional 30%) and the need to renew wagon fleets, variable gauge bogies can only be applied to a limited part of total traffic. The same is true of more conventional systems that change bogies.

Using adjustable gauge bogies is probably an economic solution for daytime passenger trains. Changing bogies is likely to be more cost effective for night trains given the longer total journey times involved.

For freight, swapping bogies or using variable gauge bogies is only likely to be cost effective for 5-10% of traffic for the foreseeable future. Some time savings may be possible by making the various systems of transshipment more efficient. It may also prove cost effective to invest in dedicated terminals for containers in some locations, since this type of traffic is forecast to increase.

At all events the gains in time which can be expected from such improvement are small by comparison with those linked to the actual organisation of frontier transshipment points. Currently frontier stations typically only tranship incoming traffic, leaving export traffic to be transhipped by a



twin station across the border. The situation has arisen at the interface of CIM and SMGS legal regimes for conditions of carriage<sup>17</sup>.

All transshipment stations should deal with both import and export traffic. There are examples of where this is done, for example at the bogie changing station on the border between Ukraine and Hungary. More fundamentally, the installations on either side of a border ought to be regarded as a single terminal. Where two transshipment stations deal with the same types of traffic, one on either side of a frontier, only the more efficient of the two should be retained.

Operating a single common station would eliminate time losses due to the movement of wagons from one station to the other. It would vastly simplify the movement of empty wagons. It would oblige the customs authorities of the two countries to carry out the maximum of inspections jointly and it should simplify the exchange of documents between railway companies.

Co-ordination of marshalling operations between transshipment stations and yards away from frontiers can also make a contribution to reducing time lost at borders. For example, wagons can be sorted more precisely than is the general practice, arranging wagons for export into groups, each corresponding to a particular transshipment station. Wagons leaving transshipment stations might be sorted in a similar way according to destination or simply sent on without sorting to a central marshalling yard where wagons from a number of points of origin are sorted according to destination. The most efficient arrangement will depend on regional logistical considerations but there are many opportunities to cut the number of sorting operations wagons are subjected to through such co-ordination.

Rationalisation of wagon sorting operations through the co-ordination of marshalling on a regional basis should be pursued as a priority. Important time savings should be possible with significant commercial benefits.

There are significant potential productivity gains from such reorganisation. Consequent reductions in staff numbers raise potential political issues. Flanking measures may be required of government to manage staff redundancies so as to avoid unacceptable impacts on local employment. Frontier marshalling yards and transshipment centres are large employers and many are located in regions of high unemployment. Closing yards in these circumstances is inevitably a political issue. In managing these problems Governments should avoid compromising the ability of railways to improve efficiency and reduce costs.

## **5. MONITORING OF WAITING TIMES AT BORDERS**

Following publication in 1994 of the Facilrail report – a co-operative effort to examine border delays by OTIF, UIC and UN/ECE – the ECE Working Party on Railways has monitored the evolution of border delays on an annual basis. Information provided by member countries to this group concerns the following issues:

- average time spent by passenger and freight trains at main border crossings;
- progress made (in minutes) subsequent to the implementation of measures taken by Governments (e.g. streamlining customs, police, sanitary and phytosanitary controls) and railways (e.g. improving technical controls) to reduce delays at border crossings for passenger and freight trains;
- other measures envisaged to eliminate delays during the crossing of borders;
- succinct reports on bilateral and multilateral contacts which have taken place between Governments and railways of neighbouring countries in order to improve the crossing of borders.

According to the data collected, waiting times at borders for passenger and freight trains vary substantially by country and there remains quite a potential for improvement. Progress has been realised in reducing delays to passenger trains through the sharing of customs and passport controls. For freight, UN/ECE Inland Transport Committee resolution 248 on the reduction of border stopping times for shuttle trains in international transport, recommends a maximum time limit of 60 minutes. Under the UN/ECE agreement on international combined transport (AGTC), 30 minutes is foreseen as the maximum border delay for combined transport.

## **6. RECOMMENDATIONS**

On the basis of this report the following recommendations are made — the first six are covered in the accompanying Draft Resolution on the removal of obstacles at border crossings for all modes [CEMT/CM(99)3] and the last will be the subject of a Communication from the European Commission later in 1999:

- that railways take prompt action to reduce delays in international freight services as far as is cost effective and in accordance with internationally agreed targets under the UN/ECE agreement on international combined transport (AGTC, where 30 minutes is foreseen as the maximum border stop) and UN/ECE Resolution 248 on the border stopping time of shuttle trains (which sets a maximum limit of 60 minutes);
- that efforts should be made to transfer, as far as possible, non-railway procedures (such as customs formalities) to origin and destination stations instead of borders;
- that where customs and other inspections remain at borders these should be done jointly by the authorities of the two countries concerned;
- that Governments ensure the management independence of railway companies, so that increasingly their international operations can be conducted on a commercial basis in an international market environment (for example in regard to decisions on rationalising marshalling operations, merging marshalling yards on either side of borders, purchasing multi-current locomotives, or dual gauge rolling stock, building track or transshipment stations, etc.);
- that in the case of Governments that continue to exercise control in the management of railway operations (most CIS countries), Ministers should seek to eliminate shunting and marshalling as far as possible at all points en route (not only at borders);

- that all Member Governments give consideration, in concertation, to possible roles for government in developing adequate common information technology systems or interfaces for transmitting data between rail networks;
- that all Member Governments, in co-operation, give consideration to possible measures to improve procedures for preparing operational rules and common technical specifications for railway equipment.

## NOTES

1. If this is taken one stage further the freight sender may well use sea or inland waterway.
2. The balance between journey time and price is not the whole story when it comes to choosing between modes. There is for instance also the question of whether a change of mode is necessary, or desirable, at one or both ends of the journey.
3. Normal station stops in the case of passenger services. (This pattern will gradually change however as investment and technical advances produce shorter journey times for passenger trains.)
4. International freight train timetables are given in the LIM (Livret International Marchandises - International Freight Timetable).
5. The distance between the two rails. The distance known as the standard gauge is 1.435 metres (4 foot 8½ inches in its original form).
6. In Spain and Portugal there is a broad gauge of 1.668 metres (with the exception of the standard gauge high speed line between Madrid and Seville completed in 1992). Finland has a broad gauge (1.524 metres) but its cross-border traffic is mainly with Russia which has the same gauge. Greece has a standard gauge rail system and two narrow gauge systems. Ireland has a broad gauge, but of course no land connection. See note on gauge changing techniques in Annex 2.
7. The loading gauge is the maximum permissible external dimensions of a vehicle (or any load carried on it if it is an open vehicle).
8. The structure gauge is the shell of dimensions over and around the track to which line-side structures are, or have been, built (bridges over the track, platforms, signal posts, the overhead line and its masts, etc.). This in turn determines the loading gauge, with a specified adequate minimum amount of clearance between the two.
9. For lines where there is an interest to develop combined transport traffic the UIC recommends the larger agreed standard known as loading gauge (gabarit) "C".
10. Whilst the signals themselves are at the trackside and are visually observed by the driver, in many areas there is an additional safety provision whereby the signal indications are transmitted to the driver's cab via a device in the track and a pick-up or receiver mounted on the locomotive or power car. Locomotives and power cars have to be fitted with the appropriate receiver and cab equipment.
11. A combination of the European Rail Traffic Management System (ERTMS), a project which is being promoted by the European Commission and in which the UIC is fully involved and has made a heavy financial contribution, and the European Train Control System (ETCS), the UIC's own signalling project. In its full form the signalling system will dispense with the traditional line-side signals.
12. Traincrews change at Brussels, and trainsets to and from Cologne and Amsterdam are split and coupled there in about 5 minutes - little more than the normal station stopping time.

13. All train drivers have to have a detailed knowledge of the routes over which they regularly operate, and cannot work over routes that they do not know. Learning a route takes some time (though it can be shortened by the use of simulators). If a driver does not use a route for some time he must relearn it. If a driver's usual work is changed and he is required to work over a different set of routes, he must learn the new routes before he can drive over them.
14. The additional time by comparison with passenger trains has to do with the characteristics of freight train braking systems that take longer to re-establish and check throughout the train.
15. A certain amount of late running of freight trains is inevitable, either because of the need to ensure that the punctuality of passenger trains is maintained, or because the despatch of freight from manufacturers, producers, etc. is itself often erratic. To try to eliminate the late running would incur disproportionate costs, but on the other hand it also generates costs in terms of surplus or underused resource capacity. A balance has to be struck, taking the commercial situation into account.
16. Study carried out for DG VII by the consultants Symonds Travers Morgan (STM) - final report produced in May 1998.
17. Conditions of carriage provide the legal framework of liability for goods and wagons in international rail freight operations. The CIM regime is administered by OCTI in Geneva and was developed for the carriage of goods by rail in Western Europe, the SMGS regime is administered by the OSJD in Warsaw and was developed for the carriage of goods in former COMECON countries.

## ANNEX 1

### THE DEVELOPMENT OF INTERNATIONAL RAIL SERVICES IN EUROPE

1. International passenger and freight services have existed for over a century. The ability to run trains over the lines of different railway companies within a country, and not long afterwards across borders into other countries, without disembarking passengers or transshipping goods, concerned railways from the time they began to expand beyond short local systems, in the middle of the 19th Century.
2. In 1872 the European Passenger Trains Timetable Conference was set up (*Conférence Européenne des Horaires des trains des voyageurs - CEH*), followed shortly after by the *Conférence des Services Direct*, to facilitate international connections and also through running.
3. In 1882 the agreement known as "Technical Unity" (*L'Unité Technique des chemins de fer*) was concluded expressly to set out the minimum standards to permit rolling stock to run on the railways in 6 European countries. In 1938 it was extended to 18 countries.
4. The "International Convention concerning the Carriage of Goods by Rail" was agreed in 1890, providing a common legal basis for the international transport of goods. A similar Convention covering passengers and their luggage was agreed in 1923.
5. In 1922 the UIC was founded expressly to provide a technical base on which to re-establish international through services after the disruption and political changes brought about by the First World War. The UIC, as the association which brought together the railways and their practical technical expertise and experience, later took over the role of the body responsible for setting standards for international through running.
6. There are around 22 000 passenger vehicles built to UIC international standards.
7. There are around 700 000 railway owned freight vehicles and 190 000 privately owned freight vehicles built to UIC international standards.
8. The technical standards for the international through running of vehicles are contained in UIC "Fiches" (standards leaflets or booklets), mainly those in the 500 series.

9. The procedures for the international running of vehicles, conditions for inspection, hand over from one railway to another, use on a railway other than the home railway, and the marking of vehicles to show that they can run internationally, are contained in the RIV (Regulations for the reciprocal use of wagons)<sup>1</sup> and RIC (Regulations for the reciprocal use of coaches)<sup>2</sup> which are managed by UIC headquarters.
10. Wagons and coaches are accepted for international exchange under the RIV and RIC provided that they comply with the UIC Code (the name given to the UIC standards collectively).

## NOTES

1. *Regolamento Internazionale Veicoli* - first came into force on 1.1.1922.
2. *Regolamento Internazionali Carrozzi*.

## ANNEX 2

### NOTE ON TECHNIQUES TO OVERCOME DIFFERENCES IN TRACK GAUGE

#### **Spain - France**

For decades, on the border between Spain and France, use has been made of three solutions to avoid, as far as possible, the need for goods to be transhipped and for passengers to change trains (goods are still transhipped in a limited number of cases):

- for freight there is a special fleet of 2 axle wagons, which are equipped with axles that can be quickly changed;
- certain passenger trains built to the highly original Talgo design introduced in 1968 have wheels which can be adjusted automatically to a different gauge whilst passing over a special section of track;
- conventional passenger trains and freight wagons have their bogies changed.

With these techniques, whilst the wagon or coach changes gauge, the locomotive is changed completely. This is not a problem, and in most cases would be necessary for other reasons. Nevertheless Talgo are currently testing a locomotive which could also change gauge to complement the Talgo coaches.

The cost of changing the track gauge throughout Spain and Portugal has always been considered to be too great, and completely unjustified by the possible commercial returns. Nevertheless, the government of Spain gave instructions for the high speed line from Madrid to Seville to be built to standard gauge, and this was completed in 1992. The line and its rolling stock are thus effectively separate from the rest of the network.

More recently the government decided that the line from Madrid to the frontier with France, via Zaragoza and Barcelona, should also be built to the standard gauge, and this is currently under construction. The whole line will be completed in 2004.

The Spanish government is currently looking again at the possibility, and the cost, of changing the gauge of the whole network, as a possible way of ensuring that Spain is able to take full advantage of the economic benefits of closer integration in the EU. This would be a massive project, however, and present huge difficulties, not only on account of the cost and the time it would take, but also on account of the disruption to traffic as a section of line was changed and the problem of maintaining services over what would become a split network.

#### **Europe - Russia, and Spain - France**

The Research Centre of the German Railway (DB AG) has developed an arrangement for changing the gauge of the wheels and axles on freight vehicles which would be suitable for the borders between Central and Eastern Europe and the CIS, and also the border between Spain and France. The



gauge of the wheels is changed as the vehicles pass over a special section of track. The system has been tested in Sweden under severe Winter conditions. A pilot installation jointly financed by the governments and railways of Poland, Germany, Lithuania and Finland has been set up on the Polish-Lithuanian border. This is testing two types of technology: Polish, and German. Further pilot installations will be constructed shortly on the Swedish-Finnish and French-Spanish borders.

## **Japan**

Japan's Railway Technical Institute has developed a prototype three-car electrical multiple unit on which the wheels and axles can change from standard gauge to Japan's metre gauge<sup>1</sup>, again whilst passing over a special section of track. The system may provide a further model for use in Europe.

### **Note**

1. Japan has both standard gauge and metre gauge networks.

### ANNEX 3

#### ADMINISTRATIVE PROBLEMS IDENTIFIED BY POLISH RAILWAYS AT THE POLISH BORDER CROSSINGS ON CORRIDOR II (Berlin-Warsaw-Minsk-Moscow-Nizhny Novgorod)

Type of Problem	Possible Solution	Responsible Organisations
<b>Frankfurt am Oder / Rzepin/Kunowice crossing (Germany/Poland)</b>		
Border procedures for international passenger traffic.	<ul style="list-style-type: none"> <li>• Introduction of common border controls (customs and passports) between the Polish and German authorities.</li> <li>• Elimination of direct control of passengers at night in EuroNight trains by substitution with the control of documents deposited with the conductor.</li> </ul>	Germany/Poland border and customs services.
Customs controls in freight services	<ul style="list-style-type: none"> <li>• Transfer of customs controls to inland yards where trains are prepared for dispatch on the international rail network.</li> </ul>	Germany/Poland border and customs services.
<b>Terespol Malaszewicze / Brest crossing (Poland/Belarus)</b>		
Information transfer between customs office, border guard and rail infrastructure company.	<ul style="list-style-type: none"> <li>• Equip border posts with IT equipment (faxes, computers, telephones, photocopiers).</li> <li>• Establish rules for efficient circulation of documents.</li> </ul>	PKP Infrastructure, PKP Freight.
Customs control procedures	<ul style="list-style-type: none"> <li>• Transfer of customs controls to inland yards where trains are prepared for dispatch on the international rail network.</li> <li>• Amalgamation of border procedures into a joint operation.</li> </ul>	Government agreements between Poland and Belarus; PKP Freight.
Replacement of CIM and SMGS transport documents with joint documentation	<ul style="list-style-type: none"> <li>• Introduction of a unified transport code and a single consignment note for the whole corridor.</li> </ul>	OSJD, COTIF and PKP Freight Directorate.

## **C. COMBATING CRIME IN TRANSPORT**

The ECMT was asked to monitor implementation of the Resolution on Crime in International Transport and to report back to the Council of Ministers in Warsaw in May, 1999. On 3 November, 1998, the ECMT Secretariat wrote to participants in the 1996 discussions on this topic and to other bodies and people whose mission or expertise qualifies them to assess the situation. It asked them to give their views on the implementation of the Resolution and to indicate those areas in which measures had been implemented and progress had been made as well as areas in which there had been no change.

The ECMT Secretariat also held a seminar on 27 January, 1999 so that it could gather information from the bodies and people invited to attend and hear their views on how the situation was developing.

This report is based on written replies to the letter sent by the ECMT Secretariat, papers and discussions at the seminar on 27 January, 1999, and on information and studies on crime in international transport from various sources published since the adoption of the Resolution by the Council of Ministers of the ECMT in 1997.

The study on which the Resolution was based focused on two broad areas: first, the theft of goods and vehicles and assaults on drivers; and, second, fraud in transit systems. This report is structured along the same lines, as was the seminar on 27 January.

### **1. THEFT OF GOODS AND VEHICLES AND ASSAULTS ON DRIVERS**

Taking the Resolution passed by the ECMT Council of Ministers point by point, we analysed the replies to the Secretariat's letter and comments at the January 1999 seminar.

1. Quite a large response was received to the recommendations addressed to Ministers of Transport. This reflects the efforts made in various countries, particularly the countries of Central and Eastern Europe (Poland, Hungary, Russia, etc.), to improve co-ordination between enforcement and prevention authorities and the transport profession, tighten up checks on licensing procedures, etc. One development reported was the setting up of special police forces to combat crime in transport in Russia. However, the replies received were all quite patchy.

In contrast, with regard to progress on the recommendation on safe parking areas in this section of the Resolution, many replies referred to the joint publication by the ECMT and the IRU (International Road Transport Union) of the booklet showing HGV parking areas in Europe and

the services available at them. The respondents considered this a very positive step. However, they would like the parking areas to be classified according to the level of security provided and to see the booklet circulated more widely.

Security problems at border crossing points were mentioned in several replies and at the January 1999 seminar.

2. Few replies were received (only two countries) regarding the recommendations for authorities responsible for vehicle regulation. Little progress seems to have been made on measures to improve vehicle identification and component marking. This issue was discussed in depth at the Autumn 1996 seminar, and although it was not raised at the January 1999 seminar, it should not be neglected.
3. Very few replies were received with regard to the recommendations addressed to national and international organisations of road transport operators. However, it was clear that efforts had been made to make operators more aware of the risks and to encourage them to step up precautions. This has been the case particularly with regard to the driver check lists which are regularly published by the IRU and the other professional associations, as well as specific projects aimed at increasing security, such as the proposed TACIS project, submitted by the IRU, whose objective is to create a tracking system for lorries in Russia.
4. No information was supplied on measures taken in response to the recommendations for vehicle manufacturers and equipment suppliers. However, it was pointed out that, since substantial technical progress had been made on the development of more effective anti-theft systems for private cars, it was not unreasonable to expect industrial vehicle manufacturers to develop systems that are more effective. Satellite tracking systems and communication systems enabling vehicles to remain in constant contact with their base would undeniably help to raise the alarm quickly if vehicles were stolen and would make it easier to locate stolen vehicles. With reference to modern communications systems to improve vehicle tracking, it was pointed out that their use was being held up in some countries by equipment type approval requirements. It appears that European standards bodies are looking into this issue, but that it will not be possible to publish standards in the near future.
5. On the recommendations for police authorities, only a few replies (from three countries) reported that progress had been made on co-operation with transport and other ministries and on exchanging information. Again, replies were very patchy.
6. Among the few responses received by the ECMT on the recommendations for insurance companies, one, from the Ingosstrakh insurance company, provided an overall assessment of trends in crime in Russia. It was pessimistic, stating that it was difficult to see "any progress in the overall situation as regards crime".

This assessment, for one country, echoes the overall impression given by the replies and by the discussions at the January 1999 seminar: despite the efforts made, progress has been minor or patchy and it seems that the situation overall has not improved or has even deteriorated, particularly in terms of assaults on drivers. However, it is difficult to gauge the scale of crime, particularly as it can take different forms and migrate from road mode, which has attracted all the attention to date, to other modes where it is less obvious, principally the rail mode.

From the analysis of the replies received and discussions at the January 1999 seminar, some major points have emerged that have received little consideration to date. These could form the basis for additional recommendations.

## **1.1 Rail transport**

In the context of the UIC (International Union of Railways), an ad hoc Working Group is focussing on the problems of crime in railways across Europe. This Group currently has representatives from eight countries (Germany, the Netherlands, Italy, France, Spain, Switzerland, the United Kingdom and Poland). The Group is concentrating on strategies to be used to combat and reduce crime rates in railways. There is also a further group, COLPORFER, within UIC bringing together over 20 European countries, with the task of exchanging information, and collaborating with and helping countries to increase security in railways. This is an operational group.

## **1.2 Improving information**

One recommendation relates to both of the areas covered in the April 1997 Resolution. This was the recommendation to improve information on crime, since existing information had proved insufficient to gauge the scale of the problem. The information on theft and assaults on drivers provided in the background report, CEMT/CM(97)7, was incomplete, uncoordinated and insufficient to confirm the very widely held opinion among transport professionals and the authorities responsible for combating crime that the problem was on the increase.

In this regard, it must be said that the situation has not really improved and it is still not possible to assess the scale of criminal activities. However, we should point out that efforts have been made and several initiatives have been taken.

The first of these was the signature in December 1998 of a treaty aimed at setting up a vehicle registration and licensing information system known as EUCARIS. The signatories were Belgium, the Federal Republic of Germany, the Grand Duchy of Luxembourg, the Netherlands and the United Kingdom. Rather than creating a new database, the aim is to co-ordinate existing national databases.

Another initiative, focussing on vehicle theft in Europe, was launched in the United Kingdom, under the European Vehicle Theft Research Programme and its initial findings shed new light on the problem of vehicle theft. A survey of available statistical sources has been carried out: these include Interpol's Automatic Search Facility System (the ASF database) and the Schengen Information System database. A comparison of Europol and Home Office Research Development Statistics data on vehicle theft in nine countries showed major discrepancies between sources. On analysing the discrepancies, it was found that definitions and counting methods differed from one country to another with the result that it was difficult to draw any conclusion as to the number of thefts occurring.

In contrast, and as far as concepts and methods can be assumed not to differ, the Europol data has been used to estimate trends. The data on which this work was based relate to six countries in Western Europe for which figures are available for a five-year period. "HGVs" are defined as a vehicle of over 3.5 tonnes total laden weight. While the statistics show a 2% decline in "vehicle" thefts overall, HGV thefts are increasing by an average rate of 3.5% per year.

The European Vehicle Theft Research Programme (EVTRP) also demonstrates the advantages of having a detailed database. A relatively detailed analysis was conducted on the statistics on freight vehicle thefts collated by the Essex Police 'Lorry Load Desk' in England. It covered 571 cases and was able to calculate the percentage of thefts by category of goods stolen, establish a relationship between the type of theft and the value of the theft, and show that theft involving assault, though low (4% of thefts), accounted for 22% of the value of goods stolen, while the theft of goods from vehicles (38% of cases) accounted for only 12% of the value of the goods stolen. The average value of goods stolen is therefore substantially higher when assault is involved, lower in the case of goods stolen with vehicles, and much lower still in the case of theft from vehicles.

This type of analysis clearly demonstrates that assaults on drivers are highly "targeted" and are planned by organised criminals who have detailed information on the type of goods carried, routes, etc., and therefore have accomplices in the distribution and transport chain. The experts confirm the increasingly "intelligent" and international nature of organised crime.

As might have been expected, the January 1999 seminar pointed out the benefits of developing information systems. It stressed that there was a difference between "operating" databases, which were aimed at facilitating investigations, and "information" databases, which were designed to gauge the extent of theft, identify its characteristics and, through detailed analyses of those characteristics (if necessary on limited samples for a more in-depth analysis), to improve our insight into factors in crime and its mechanisms. It was important to standardise concepts and definitions for both types of databases, but particularly for the latter.

Some regretted that a few countries did not seem keen to join the Eucaris system linking national registration and driving licence databases. The more countries joined it, the more valuable this resource would be.

### **1.3 Targeted surveillance measures**

As we have already mentioned, the parking area booklet published by the ECMT and the IRU was welcomed. There are risks while a HGV is parked, but there are also risks at other times, particularly when waiting at border crossing points where queuing vehicles are particularly vulnerable. Protection for HGVs should therefore be stepped up. From a more general standpoint, replies to the letter sent by the ECMT Secretariat and discussions at the January 1999 seminar both stressed the fact that theft and assaults on drivers were more likely at certain times and places and that surveillance measures should be more effectively targeted. The transport profession is calling for tighter checks on incident prone routes and in parking areas.

### **1.4 Escalation of illegal immigration and attitude of authorities towards drivers and hauliers**

The transport profession's call for tighter checks should be seen in the light of the escalating problem of illegal immigrants hiding on board HGVs to travel across frontiers. When the authorities carrying out checks detect this type of offence, they frequently suspect drivers and can sometimes treat them very harshly.

The transport profession (employers' and union organisations) complains that the police authorities systematically suspect drivers of aiding and abetting the crimes of which they are often the victims. It maintains that drivers cannot know (or may not know) that illegal immigrants have hidden in their vehicles. In the case of theft, there may sometimes be an accomplice somewhere along the

distribution or transport chain but there is nothing to prove that this is the transport operator. It is therefore unwarranted to always treat drivers as if they were the culprits, to impound their vehicles for several days or, as in some countries, to intimidate them into an admission of guilt, when they are in no position to defend themselves.

Given the increase in the number of incidents involving illegal immigrants hiding on HGVs, the general assembly of the IRU passed a resolution, on 20 November, 1998, urging police, port authorities, and captains of ferries to redouble their efforts to tighten checks, and asking road-haulage firms and their drivers to be more vigilant.

The resolution also raises the issue of the police authorities' attitude to drivers, a problem that is not confined to the area of illegal immigration.

In answer to the case made by transport professionals, it could be argued that while not all operators and drivers are guilty, they are not all innocent either, that they have a duty to take precautions, should be more vigilant, etc.

Faced with such conflicting views, it is difficult to strike a balance. While it is certainly justifiable not to clear drivers of all responsibility before the facts are known; there can be no doubt that pressurising them into admitting collusion and holding them longer than is strictly necessary to conduct the investigation is unacceptable.

### **1.5 Creation of an ECMT follow-up group**

Generally, to step up the fight against crime, the co-ordination of the actions of all players concerned needs to be improved at international level, but also at national level in every country. The many dimensions (technical, legal, organisational) raised by the problem make the exchange of information and co-operation imperative. With this in mind, it has been proposed that the ECMT set up a group that would head discussions and, on an on-going basis, encourage the organisations concerned to continue their efforts to step up the fight against theft and assaults on drivers.

A group that would review all aspects of crime, and that would necessarily be quite large, would not necessarily be an efficient structure. On the other hand, streamlined working methods and structures could be used to tackle the problem in particular fields and with the relevant actors. The role would be to collate and disseminate information on an issue, formulate concrete proposals and, on an on-going basis, motivate the actors concerned (administrations, transport professionals, vehicle manufacturers, insurance companies, etc.) to actively concern themselves with the issue.

## **2. FRAUD IN TRANSIT REGIMES**

As above, we take the Resolution passed by the ECMT Council of Ministers point by point and review the information and views expressed in reply to the Secretariat's letter and at the January 1999 seminar before going on to address major outstanding problems.

1. Only a few replies were received on the recommendations for Ministers of Transport, which were very general in nature, but they did confirm that Member countries were committed to strengthening co-operation between national transport operators organisations and the IRU and to backing the reform of transit regimes.
2. Replies were received on most of the general recommendations for customs authorities. Most of them mentioned changes that had been made but also said that they did not go far enough. Some respondents thought that the regulatory measures had largely been implemented, but did not think that this was the case in all countries. Efforts have clearly been made to streamline procedures and step up checks as well as to develop information and training for customs staff. However, in some countries, the frequent changes in procedures and inconsistency between the different customs offices has created uncertainties that are adversely affecting hauliers.

The general view at the January 1999 seminar was that a new awareness of the severity of the problems and the Resolution adopted by the Council of Ministers of the ECMT had resulted in greater attentiveness or vigilance by all of the actors concerned and that the situation had at least stabilised or, for some, had even improved slightly. The impact of the introduction of SAFETIR was also a step in the right direction and regarded as very positive, even if the practical implementation of the procedures that the system entailed still posed many difficulties. The system would only be really effective if the discharge confirmation rate was high enough to show up any disputed cases quickly. The procedures exist but for them to work, the customs authorities must oblige their officials to keep the data base up to date.

Now that it is not possible to use the TIR transit system for “sensitive” goods such as alcohol and tobacco, there seemed to be no cases of fraud involving these goods. However, the general view is that fraud of this type has not really ceased, it has just taken other guises (misrepresentation of the nature of the goods) or other channels (use of other modes of transport).

Despite the progress made, it seems that little has changed as regards the last two recommendations in this section: recourse to guarantees and deadlines for the notification of non-discharged operations, almost certainly due to two major problems, which we will come back to below.

3. The recommendations specifically relating to the TIR Convention were aimed at implementing Resolution 49, adopted by the UN/ECE Working Party on Customs Questions Affecting Transport, and revising the Convention. While implementation does seem to have improved, the revision of the Convention has received a mixed response and assessments of the situation differ.

The first stage of revision entered into force on 17 February, 1999. It will concentrate primarily on provisions that involve customs authorities in determining the criteria for approving guaranteeing associations and haulier eligibility for the TIR system. The UN/ECE and customs authorities see this as a significant step forward; the IRU takes the view that the new provisions will not make any great difference, unlike the changes to be incorporated in the second stage of revision.

This second stage should introduce concrete technical measures that will be more effective, but they are still under discussion and are unlikely to be adopted in the near future, since the provisional timeframe sets the deadline for 2002.

4. Recommendations on the reform of the Community/Common transit regimes and the setting up of the new computerised transit system (NCTS).



Work on revising the Community Customs Code is under way and amendments may be adopted in the first six months of 1999. Three communications from the Commission have been published since 1996:

- Action of the Commission in relation to fraud in the transit system (3 April, 1996)
- The future of transit: interim report (9 October, 1996)
- Action Plan for Transit in Europe: a new customs policy (30 April, 1997)

While transport professionals concede that the amendment concerning the operation of guarantees is a step forward, they do not find it totally satisfactory because it does not explicitly state that guarantees provided by the principal are to be taken up only as a last resort. The revision of the implementing provisions of the Common Transit Convention and its appendices is scheduled for the end of 1999. A number of procedural measures aimed primarily at improving co-ordination between customs administrations are in hand. This is an ambitious undertaking, but the Commission points out that much remains to be done and that only the commitment and support of all the actors can guarantee the success of the reforms. To this end, it has invited customs administrations to commit the human and financial resources necessary to guarantee the effective implementation of the reforms.

The Committee of Inquiry set up by the European Parliament severely criticised delays in the initial planning stage of the NCTS project, which should have been operational by the end of 1998. A pilot project involving five countries will now not go ahead until the end of 1999 and it will be 2003 before projects are introduced on a wider basis.

As a result, for both the TIR system and the Community/common transit systems, the stages that should be decisive in reducing fraud are still some way off. The overall situation may no longer be deteriorating, but there are two key issues on which major differences of opinion subsist: reducing the notification period and outstanding debts.

## **2.1 Reducing non-discharge notification times**

The ECMT Council of Ministers recommended that the one-year time limit for notification be reviewed, with a view to reducing it significantly. Transport professionals and customs administrations agree that a shorter effective notification deadline would be a positive move, since non-discharged operations would then be identified much more quickly and transport operators would be able to avoid accepting similar operations. However, the statistics produced by the Committee of Inquiry set up by the European Parliament show that forms take much too long to be returned and that customs authorities are unable to process documents within a reasonable period. Nevertheless, it must be said that over 95% of forms are returned within three months.

The issue of reducing the regulatory time limits is one on which the transport profession and customs administrations disagree. According to transport professionals, allowing customs a year to provide notification gives them no incentive to expedite procedures. In order to ensure shorter effective time limits, they say that regulatory time limits would also have to be reduced. Customs authorities hold that reducing the time limits would just mean higher numbers of notifications about operations that would later prove to have been discharged in the normal fashion. It should be noted that consultation via Internet by the customs authorities of the IRU database -- maintained by SAFETIR -- containing information on the discharge of carnets would help to avoid the unnecessary notification of non-discharged carnets. The information is consulted using an application developed by

the IRU; access to this application can be easily obtained through a written request from the customs authority to the IRU.

Moreover, the argument of the customs authorities is not very convincing since the inconvenience cited does not seem to be very significant -- especially if they intervene after three months -- whereas the advantages of a situation where the customs are induced to be more efficient are undeniable.

## **2.2 The outstanding debt problem**

Customs authorities are entitled to claim outstanding sums from guaranteeing associations under the TIR system and from the principal under the Community/common transit system. The exact total they could claim is not known but is thought by the IRU and the Committee of Inquiry of the European Parliament to be substantial (several hundred million ECU under each system). If customs authorities were actually to claim such sums, the operators, guaranteeing associations and insurance companies providing cover would find themselves in a very difficult situation. Therefore, in practice, customs authorities frequently defer their claims.

However, that is not the end of the issue. Customs authorities and the finance ministries to which they are accountable have refused to make the moratorium official or indeed to waive their claims to these monies.

On the grounds that customs authorities are partly responsible for the explosion in fraud in the transit systems, transport operators and their professional associations refuse to bear sole responsibility. They are not seeking full relief from the sums due, but will not be satisfied with the piecemeal settlements that case-by-case negotiation could result in. They are calling for an overall legal framework, applicable to all countries, that formally recognises the principle of relief on sums owed when customs authorities have been partly responsible for enabling fraud.

The attitude taken by insurance companies is to refuse liability as a last resort. They will only honour claims where the parties (transport operators and customs) have properly fulfilled their obligations.

We can therefore expect to see cases come up before the courts.

## **2.3 Maintaining and questioning customs authorities' privileges**

Customs authorities and representative bodies of transport operators and international commercial operators interpret the issues of non-discharge notification and outstanding debt very differently. A brief outline of these conflicting points of view may help to clarify the issues and bring a compromise solution acceptable to both parties a step closer.

For customs authorities, the situation is quite straightforward: transit systems are facilities that they grant to international commercial operators. These facilities are granted under terms that the customs authorities have defined in order to safeguard their own interests, which, moreover, are the same as their countries' interests. This explains why the notification time limit was set at one year and why operators wishing to take advantage of this facility are required to give a formal undertaking that they will pay duties when, for whatever reason, they have not been paid by the party that incurred them. Operators are free not to use transit systems and not to give such undertakings. Once they have done so, however, they must honour them.

This inflexible position contrasts with the viewpoint of commercial and international transport operators, who argue that transit systems are not so much in the interests of the operators as in the interests of international trade. They argue that the constraints imposed on operators in no way relieve customs authorities from the responsibilities and duties incumbent upon them: they still have an obligation to carry out careful checks and expedite formalities. Where they fail to do so, they bear some of the responsibility for the escalation of fraud.

While it is not our place to take sides, we would point out that the Commission of the European Communities, in its Communication of 29 March, 1995, stressed that the customs authorities of the Member countries bore some responsibility for the deterioration of the situation: the quality of controls had declined progressively over the preceding few years; investigations into outstanding operations were not conducted early enough or energetically enough and were not given sufficient priority. The application of the regulations and existing administrative provisions by Member States had not always been such as to ensure good management. The Committee of Inquiry was equally severe in its criticism.

Furthermore, the customs authorities' argument would carry more weight if there were any real alternative to the use of the transit systems. As things stand it is difficult to see how transport would be possible without using these systems, since customs authorities would be quite unable to carry out the additional duties that would devolve to them. All of the experts, and the Commission of the European Communities, stress that the maintenance and satisfactory operation of the transit systems is one of the pillars of a common trade policy and a prerequisite for the gradual integration of the economies of Europe. The Commission Communication of 29 March, 1995 stated that there was no other viable solution for transit; no other choice but to modify it rapidly and effectively. Under these circumstances, reaching a compromise on the two major issues in dispute is in the general interest.

### **3. SUGGESTIONS FOR A NEW STANCE BY ECMT COUNCIL OF MINISTERS OF TRANSPORT**

Many aspects of the Resolution adopted by the Council of Ministers of Transport of the ECMT in April 1997 are still relevant. Any new Resolution (except where it repeats the wording of the April 1997 Resolution), should expand on it, rather than replace it, and emphasise points that, in the light of developments over the past 2 years, have assumed more importance than in 1997.

Regarding the section on theft of vehicles and goods, consideration might be given to including recommendations:

- To produce a guide to lorry parks and other HGV parking areas classified by level of security, and a new edition of the European parking area booklet showing the level of security offered.
- To speed up work on the standards for vehicle anti-theft devices and communications systems enabling the tracing and real-time monitoring of vehicles.
- To expand the EUCARIS system to countries other than the original signatories to the Treaty.

- To initiate discussions on harmonising the concepts and definitions used for gathering information on the theft of goods and vehicles and the development of an international “operations” or “information” database, the latter to serve as a basis for in-depth analysis to improve intelligence on the type of offence and mechanisms involved in order to combat them more efficiently.
- To develop studies in each Member country to identify the highest-risk locations, so that surveillance and checks can be targeted more effectively.

In addition, Member countries’ attention should be drawn to the use made of HGVs in illegal immigration and carriers’ attention should be drawn to their duty to be vigilant in this respect. The Council could recommend that Member countries draft regulations on the conduct of investigations, which would allow for the need for investigation, but avoid the presumption of guilt and undue pressure on the driver.

Lastly, follow-up activities on various very specific subjects, could be carried out on the initiative and under the guidance of the ECMT.

Regarding the section on fraud in transit systems, consideration might be given to including the following recommendations:

- To continue of efforts to streamline procedures and step up checks.
- To intensify and extend efforts already undertaken to improve the operation and, in particular, the maintenance of SAFETIR.
- To pay greater attention to new forms of fraud that are likely to be seen – or have already been seen – as “classic” forms gradually become more difficult.
- To increase support for the reform of transit systems such that the deadlines for adopting the different measures envisaged under the TIR Convention and the Community and common transit systems at least be met, if not shortened.
- To maintain efforts to set up the NCTS so that no further delays will occur.

A new recommendation should certainly take a stance on the two major problems highlighted in this report.

- It seems advisable that the Council of Ministers of Transport restate that a substantial reduction in the time limits for non-discharge notifications would be a step forward.
- The Council of Ministers would not be exceeding its brief to state that commercial and international transport operators’ call for harmonised solutions to the problem of the outstanding sums payable by them was legitimate.

## **RESOLUTION ON THE REMOVAL OF OBSTACLES AT BORDER CROSSINGS FOR INTERNATIONAL GOODS TRANSPORT**

The ECMT Council of Ministers of Transport, meeting in Warsaw on 19 and 20 May, 1999:

### **HAVING REGARD to:**

- the Resolutions No. 50 of 1984 and No. 94/5 of 1994 on the removal of obstacles to international goods transport and to the follow-up reports [CEMT/CM(99)7 and 8/FINAL] on the implementation of these Resolutions;
- the relevant paragraphs of the Crete and Helsinki Declarations, in particular paragraph C.3 of the Crete Declaration, stating:  
“The crossing of borders should be made progressively easier, until all unnecessary obstacles to transport have been removed”.

### **EMPHASISING:**

- that more effort is still needed to reduce waiting times at frontiers by all modes and resultant additional costs and inconvenience;
- that continued long delays at border crossings can result in drivers and their lorries and trains becoming targets for criminals and would-be clandestines.

**REAFFIRMING** that measures to facilitate border controls need to be taken for rail and inland waterways transport as well as for road transport, but that the problems and solutions are different in each case.

### **BEARING IN MIND:**

- the continuing rapid expansion of goods and passenger traffic between Western Europe and the emerging economies of Central and Eastern Europe and the resultant pressure on existing border crossings, particularly at the external frontier of the European Economic Area (EEA);
- the fundamental need to provide training for drivers which is geared to the requirements of international transport;
- the need for authorities to apply appropriate customs and immigration controls to prevent fraudulent cross-border activities and clandestine entry;
- the need for close co-operation between authorities and the business community, so that the needs and constraints of each side can be understood and dealt with efficiently.

### **TAKES NOTE:**

- that significant progress has been achieved in abolishing frontier controls since the adoption of ECMT Resolution No. 94/5 through the completion of the EC Single Market and the establishment of the EEA;
- that substantial progress has been made by ECMT Member Countries in Central and Eastern Europe - both unilaterally and or in co-operation with neighbouring countries - in identifying and tackling border crossing difficulties;

- that the international funding framework now in place is sufficient to address the most important infrastructure constraints;
- that existing conventions governing international transport, including those developed by UN/ECE, already provide the framework within which to overcome present problems;
- that the rate of further progress will be dependent on the political will of the responsible Governments (*e.g. establishment of joint customs clearance procedures*);
- that despite efforts made since 1995, there are still many border crossings where delays remain the norm.

**DECIDES** to re-affirm the commitments made under the ECMT Resolution No. 94/5 on the removal of obstacles to international goods transport.

**RECOMMENDS:**

**In regard to railways:**

- that railways take prompt action to reduce delays in international freight services as far as is cost effective and in accordance with internationally agreed targets under the UN/ECE agreement on international combined transport (AGTC, where 30 minutes is foreseen as the maximum border stop) and UN/ECE Resolution 248 on the border stopping time of shuttle trains (which sets a maximum limit of 60 minutes);
- that efforts should be made to transfer, as far as possible, non-railway procedures (such as customs formalities) to origin and destination stations instead of borders;
- that where customs inspections remain at borders these should be done jointly by the authorities of the two countries concerned;
- that Governments increase the management independence of railway companies in regard to their international operations in the broadest sense so that decisions related to improving border crossing operations (*e.g. rationalising marshalling operations, merging marshalling yards on either side of borders, purchasing multi-current locomotives, or dual gauge rolling stock, building track or transshipment stations, etc.*) can be made on a commercial basis in an international market environment;
- that in the case of Governments that continue to exercise control in the management of railway operations, they should seek to eliminate shunting and marshalling as far as possible at all points en route (not only at borders);
- that all Governments consider possible roles for co-ordinating railways and providing support to railways in developing adequate integrated information technology systems for transmitting data between networks.

**In regard to road transport:**

***Competent authorities:***

- that where delays have been identified, Member countries should declare a target reduction of existing waiting and processing times, to start with a 50% reduction of average time within 1 - 2 years, with the overall objective of a target of no more than 1 hour within 5 years. Targets should also be set for reducing peak waiting times. These targets should be widely/publicly disseminated to customers;
- that Member Countries should strengthen their efforts to further harmonise and simplify the procedures for checking vehicles and goods, either by multilateral or bilateral agreements, at border points;

- that all Member countries should work towards simplification of the categories of taxes, fees and duties charged at border crossings and ensure transparency in their application, so as to provide an integrated border service;
- that Member States should establish clear functional divisions and co-ordination between the operatives representing the various authorities at border crossings so as to avoid duplication of checks and procedures and should limit the authorities present at borders to those concerned with customs and border controls. In this regard the appointment of a border manager could be considered;
- that Member countries should be aware of the risks and take appropriate steps to avoid illegal practices at borders.

***Customs authorities:***

- that Customs procedures be further streamlined, including through a simplification of the documentation package for transit freight, for the majority of vehicles passing through border posts;
- that ECMT Member countries which share a border should co-operate at a bilateral level with the aim of establishing jointly run border crossings, joint customs clearance, or the operation of juxtaposed controls;
- that, where they do not do so already, Member countries should adopt risk-analysis and selectivity techniques (RAS) in order to ensure effective targeting of vehicles for detailed checking.

**In regard to combined transport:**

- that, as far as combined transport operations are concerned, and in conformity with decisions already taken, especially in Copenhagen [CEMT/CM(98)15/FINAL], provisions are taken for carrying out, as far as possible, customs and border control operations (including veterinary and phytosanitary controls) at the points of loading and unloading. This would speed up combined transport operations, achieve shorter delivery times and make reliable combined transport schedules possible.

**Generally:**

***Authorities responsible for funding:***

- that international infrastructure investment should be linked to implementation of procedural reforms and waiting time targets;

***Ministers of Transport:***

- that Ministers of Transport of ECMT Member Countries exercise as much influence as possible, in co-operation with their relevant Ministerial colleagues, to take forward these recommendations as a matter of urgency, with a view to achieving the removal of all unnecessary obstacles to transport on priority corridors by the year 2005.

**INSTRUCTS:**

- the Committee of Deputies to monitor the implementation of this Resolution and to report to the Council by 2003;
- The ECMT Secretariat to disseminate this Resolution widely and in particular to all Authorities directly concerned.



## **RESOLUTION ON CRIME IN TRANSPORT**

The ECMT Council of Ministers of Transport, meeting in Warsaw on 19 and 20 May, 1999:

**NOTING** the report [CEMT/CM(99)11], reviewing progress since the adoption of the comprehensive Resolution (Resolution No. 97/2) in Berlin in 1997.

### **NOTING ALSO THE PROGRESS MADE:**

- to better understand the nature and extent of transport related crime;
- to improve information flows between the various bodies implicated in the fight against crime;
- to draw up a treaty concerning a European Vehicle and Driving Licence Information System (EUCARIS);
- to inform hauliers of the risks and to give them advice on *inter alia* safe parking places through, the publication of the joint IRU/ECMT booklet;
- to reform the transit systems within the context of the UN/ECE (in WP30) and the EU (Action Plan, including the New Computerised Transit System);
- by the haulage profession (through their national associations) and the IRU, notably through the development of the SAFETIR system.

### **CONCERNED:**

- that crime is taking on new forms and using all modes;
- that data on the subject are still unreliable, making assessments of the extent and nature of crime difficult, as well as making international comparisons unreliable;
- that illegal immigration has become a new problem.

**REITERATE** the importance of continuing actively to implement the provisions of Resolution No. 97/2 adopted in Berlin.

### **IN ADDITION:**

*In relation to the Theft of Goods:*

### **RECOMMENDS:**

#### **In general**

- that further work to obtain and make available comparable information on transport crime (including harmonised definitions and concepts) should be undertaken;
- the examination of how anti-theft devices and communication systems which allow vehicles and wagons to be tracked can be brought quickly onto the market;
- that Member countries identify high-risk locations and situations, so that surveillance and checks can be targeted.

**In relation to road transport**

- that countries should consider joining the European Vehicle and Driving Licence Information system, known as 'EUCARIS';
- that ECMT and IRU should update the handbook on parking provisions, improving it where possible by the addition of information on the levels of security and services available.

***In relation to Fraud in the Transit Systems:*****URGES:**

- UN/ECE, in particular WP30, to complete stage two of the reform of the TIR convention as rapidly as possible;
- the European Community and the national customs administrations concerned, to complete in the short term the current reform process of the Community and common transit systems and to allocate the necessary resources for their computerisation and proper functioning;
- Customs authorities to give full attention to the possibility of shortening significantly the notification period for non-discharged operations;
- national associations, in collaboration with competent authorities, to seek solutions to the problem of the outstanding debts.

***In relation to Illegal Immigrants:*****REQUESTS:**

- national authorities, where appropriate, to draw up regulations on the conduct of investigations;
- shippers and hauliers to do everything possible to ensure that their vehicles are secure when being loaded or while parked.

**REQUESTS THE COMMITTEE OF DEPUTIES:**

- to set up appropriate methods and structures so that ECMT can contribute to the fight against crime through focussed actions on the particular issues identified above;
- to report back again on the progress in implementing these recommendations and those in Resolution No. 97/2 and on any further actions that need to be taken.

*Chapter V*

**PUBLIC-PRIVATE PARTNERSHIPS (PPPS) IN  
TRANSPORT INFRASTRUCTURE FINANCING**



## **1. POLICY ISSUES**

### **Introduction**

A Seminar on Public-Private Partnerships (PPPs) was organised by the ECMT on 12 January 1999 in Paris. The seminar brought together participants from government, private companies and banks, IFIs and international organisations. The following is an account of the main issues raised, together with the conclusions and recommendations from the participants. The objective of the Seminar was to review and exchange experience with PPPs and suggest policy and practical lessons from these experiences. It built on the work of the EU High level Group and in particular examined the possibilities and constraints in the CEE countries.

The seminar was organised around background papers from key actors, including Government at national and international level, private sector actors and private and international banks as well as a set of examples provided by participants. The papers are available on ECMT's Internet site (<http://oecd.org/cem/>) or on request from the Secretariat.

## **2. WHAT IS A PPP?**

PPP is not a precisely defined concept, and involving the private sector in transport investment and/or operation can vary greatly in the scope of the involvement and in its timing. PPPs can cover a range of situations from the simple provision of a service for a fee up to complex forms of joint financing, building, operation and ownership - in summary a wide range from simple commercialisation to full privatisation. A typical infrastructure project involves several stages:

- A first analysis of the problem and a search for a solution ('why should something be done').
- Then a more concrete functional analysis ('what can be done').
- A more precise definition in technical terms ('how can it be done').
- After that the financing has to be arranged (usually through the public budget).
- The plans have to be drawn up in detail.
- The construction is carried out.
- Lastly the detailed financing arrangements (taxes, tolls) have to be put in place.

Traditionally, the construction phase has been carried out by the private sector, and all the risks associated with the earlier phases have been taken on by the public sector.

Private sector involvement can begin earlier than the sixth phase above, i.e. not just to build, but to design and build, (D&B). It is possible to go further and involve the private sector in Phase 3 or 2 or even Phase 1 when the Government decides that it is not responsible for solving the problem. On another hand, the private sector may be involved in a later phase e.g. in a Design, Build, Operate and Maintain (DBOM) scheme.

The defining characteristics of a PPP as discussed at the seminar are that it takes a global view of, and a long-term commitment to a project, and that it involves a sharing of risks and responsibilities between the public and private sectors. Though there can be user charges, this is not absolutely necessary.

### **3. WHY PPP?**

The main general reasons that Governments are now looking closely at PPPs include the fact that public infrastructure and services can be provided more efficiently if the private sector is involved, as well as the pressing need in many countries to find extra or off-budget financial resources for transport. The experience and successes in other sectors (telecommunications and energy) in involving the private sector also act as a spur for the transport sector. In some countries, especially the CEECs, the main driver is the limited amount of money in the constrained public budget to finance transport infrastructure and services and the opportunity to use it as leverage. In others, like the Netherlands or Ireland, the efficiency arguments are of greater current interest.

On the other hand the private sector is permanently looking for opportunities for profitable investment. In recent decades, transport infrastructure has not attracted significant quantities of private funds. This is partly because of the very long-term nature and therefore the long payback period of the investments, but also because of the problems of charging users. In summary, the financial return is lower than the socio-economic one and the commercial risk is quite high in most cases.

### **4. EXPERIENCE WITH PPPS**

Experience is still limited but there is a growing number of examples from several different countries. This experience shows a diversity of approaches and structures. There are examples from most modes, including motorway investment and operation, high speed trains, tunnels and bridges, airports and ports, and urban public transport investment. The projects are frequently complex and the major projects are all quite different.

There is no data on the share of total investment accounted for by PPPs but in general it is small.

Part two of this report describes the main features and lessons from the following cases:

- Shadow Tolls - United Kingdom.
- M1/M15 Motorway in Hungary.
- M5 Motorway in Hungary.
- Motorway programme in Poland.
- Channel Tunnel - United Kingdom and France.
- TGV in Belgium.
- Spata Airport in Greece.
- Warsaw Airport.
- Gioia Tauro Port, Italy.
- Øresund link, Denmark/Sweden.
- Motorways in France.
- Vasco da Gama Bridge in Lisbon.

## **5. POSSIBILITIES, LIMITS AND OBSTACLES FOR PPPS**

The examples illustrate that PPPs can be structured flexibly and can be used in a wide variety of situations. Several of the principal examples and the major possibilities are in the road sector. It was felt that there are possibilities in the public transport area but that they require substantial public funds as public transport systems charging “socially affordable” fees do not usually cover even operational cost. Similar remarks apply to railways. Major schemes like urban renewal or port redevelopment also provide undoubted opportunities. Long-term infrastructure maintenance is an area where participants felt that private sector participation could be developed in a particularly beneficial way.

Most participants believed that, in general, a strong public sector involvement and, in particular, a significant share of public sector funds was needed to make projects attractive to the private sector, i.e. financially viable. The recent Hungarian (M1/M15 motorway) and Polish (A2 and A1 motorways) experiences showed the failures in developing fully privately financed motorway concessions, whilst that conceived with (appropriate) public contribution, performs satisfactorily (M5 motorway in Hungary).

The private sector reiterated that a main obstacle to greater involvement was that public sector procedures and decision-making were too bureaucratic and unwieldy. On the other hand, public sector representatives felt that the private sector was looking for unrealistic rates of return and mitigation of risks. Moreover, civil servants feared that handing over projects to the private sector would leave them without control of the project but with the responsibility for it. A further complication arises because public investment decisions are usually open democratic processes, including on the sums of the sums of money involved, while private decision making is a more closed procedure; this can complicate negotiations between the sectors. To summarise, a lack of understanding of the respective roles and requirements of potential public and private partners could be an obstacle to developing partnerships.

## **6. ROLE OF GOVERNMENT**

Governments have to set the broad macroeconomic, legal and administrative regulatory framework. They have to resolve, or attempt to resolve, conflicts between different policy objectives as, for example, the importance of economic or regional development objectives of new infrastructure have to be weighed against the fact that without user charges and/or private finance, the infrastructure would not be built for many years. There may be inconsistencies in infrastructure charging. For example, in Hungary the toll rates charged on sections of the M1/M15 motorways (used mainly by international traffic with high purchasing power) built under private concession and with a very small public contribution, are substantially higher than on other tolled facilities privately financed but with substantial public support (M5 motorway), or entirely publicly financed (M3 motorway). Governments are also responsible for ensuring that transparent and competitive procurement rules also apply.

Private sector participants stressed that Governments also need to rethink the nature and objectives of projects – not thinking only in terms of technical specifications but more in terms of the function of a project (the ‘what’ issue above and not the ‘how’).

The following were seen as important in creating the political and administrative environment within which PPPs could be developed.

### **6.1 Prepare a transport development strategy**

As a preliminary step to preparing financing plans, it is important to draw up a transport infrastructure and services’ development strategy. This should be based on studies which take account of the economic trends and the transport supply and demand factors, as well as environmental considerations and likely changes in them. These studies should be regularly updated and validated for consistency with other international studies. Priorities should be determined on the basis of social and economic efficiency (using cost benefit analysis).

### **6.2 Build political and public support for the strategy**

There is a need to obtain political - e.g. from within the government and the parliament - and public support for the strategy and for the implementation of the projects within it. Political support is needed as, even in the most optimistic scenarios, private finance will not be adequate to meet needs and therefore a firm political commitment and appropriate public funding contribution are required.

### **6.3 Make a financial plan**

In close co-operation with ministers responsible for finance and economy, carry out studies to define the eventual amount and disbursement schedule (for the medium and long run) of public resources (central and local budgets plus sovereign borrowing) available to finance transport projects of high priority. Study the best combination of available financing sources (including user charges and additional private capital) to achieve set objectives.



## **6.4 Initiate a political debate on the financing**

This debate can help clarify the political choices (e.g. between postponement and charging). At the same time, the possibility of finding innovative solutions should be examined (e.g. commercialisation of some public services and corporatisation of service providers resulting in cost cutting through PPPs). Where there is satisfactory political and public support for innovative solutions, initiate consultation with private sector and carry out studies to revise traditional management and funding techniques and to source additional (e.g. private) financial resources. The political and social acceptance for transformation of some public services paid by taxpayers into ones that are partly or mainly paid by users, has to be carefully tested. It may have to be accepted that charging users should be based more on social affordability (covering operation and maintenance costs) than on full cost recovery (including capital expenditures). Where the necessary public support is obtained, the appropriate additional fund raising methods (dedicated tax, access fee, shadow tolls or real tolls on motorways) allowing timely implementation of economically mature and financially viable projects, should be defined and selected. The project also has to be structured so as to give the private partner a reasonable return commensurate with the risk borne.

## **6.5 Provide regulatory framework for PPPs**

It is essential to provide the appropriate legal and administrative regulatory background for the implementation of the innovative solutions (e.g. allowing private companies to provide public services under certain conditions, like concessions). Regulations enhancing accountability of all participants, allowing competitive and transparent procurement, establishing contractual relationships based on corporate culture and mutual trust (making this business attractive for the private sector as well) may be needed. Particular legislation to allow PPPs to work (e.g. defining the modified roles of the public authorities, creating a regulator, describing procurement procedures and contents of model concession or benchmark linked service provider's contracts) might also be required. At the same time, there is a need to streamline procedures and to achieve an understanding with the private sector on them.

When examining a wider involvement of the private sector, Government needs to retain the role of 'expert principal' and have a 'benchmark project' against which the private sector proposals can be judged.

## **6.6 Select pilot projects**

Following a study of international experience gained with PPPs, and relying preferably on the support of appropriate legal, financial and technical experts, pilot PPP projects could be selected, prepared and launched by governments/administrations. Special emphasis has to be given to the identification of all risks attributed to a given project and their (equitable and fair) allocation. Rough limits, conditions and suggested tools of public sector risk-taking (with special emphasis on sharing commercial risk linked to traffic and revenue forecasts) have to be defined at an early stage of project preparation. International financial institutions could be contacted to provide assistance and play a catalyst role in structuring projects and their financing (e.g. borrowing and/or limited recourse project finance). Before issuing an invitation to tender, it is advisable to consult the private sector aiming to test the appetite for risk sharing of potential developers, contractors, equity investors and lenders (e.g. by pre-qualification).

## **7. HOW TO DEVELOP A PROJECT**

Since PPPs can vary from simple commercialisation to complete privatisation there is no single model. Moreover, different legal frameworks and different traditions and cultures mean that each scheme has to be tailored to the particular circumstances. Structures are very often quite complex. Nevertheless, there are some clear common elements to PPPs. Great care has to be taken at the start in setting up the right structures so that roles and responsibilities of partners are clear and agreed. Conflicts of interest should be identified and properly regulated. The project needs a strong owner. One of the lessons from the Channel Tunnel was that the concession was given to those who promoted the scheme and not to those who represented the owner, with the result that there were conflicts of interest. The Øresund project, on the other hand, has taken on board lessons of the Channel Tunnel, and it is a PPP project where ownership and structures are clear. Projects may be best set up using an independent structure or agency (organised and run on private sector lines) responsible to the owner to promote and carry out the project. The sharing of risks and responsibilities has to be negotiated in detail. The general principle is that risks should be allocated to those who can best control them. Risks which have been overcome (such as political risk) should permit re-examination of the financing. Some of the private sector participants argued that, while they were prepared to take on some risks that they could not influence, like traffic levels, they needed public support and guarantees to ensure that flanking measures did not adversely affect them.

The structure of contractual relationships and the contracts themselves play a crucial role. A key lesson from experience is that these need to be more flexible, specifying mechanisms more than details. It is not possible to put everything into the contract and it is pointless to try. The emphasis should be on output specifications rather than input specifications, setting out clear performance criteria rather than pre-determined technical requirements. This approach allows the private sector to innovate while ensuring that public sector requirements are met. A pragmatic approach is needed. For example, the Tagus bridge contract was amended at least 9 times, because the public partner did not consent to increase toll rates on the older bridge as originally agreed and instead paid compensation to the private company. Another reason is that these contracts usually concern long time periods and it is impossible to make reliable forecasts for 30 or 40 years. The contracts should, however, specify clear criteria and mechanisms for their amendment over time. Contractors and concessionaires should be selected by competitive procurement after substantial planning and discussion. The final stage of this process is sometimes known as competitive dialogue. The number of final tenders invited should be kept reasonably small and the possibility of paying some tender costs should be considered.

## **8. SOME KEY LESSONS AND ISSUES**

Many of the PPP projects share the characteristic of being great engineering successes: the difficulties have occurred in the financial sphere.

A key message is that the private sector partners should be involved as early in the process as is consistent with their expertise. Attracting private companies will also mean considering their concern

for protection of intellectual property rights and for possible reimbursement of some of the costs incurred. The decision to involve the private sector cannot simply be imposed on it. There must also be a serious attempt to build a real partnership and commit appropriate public resources to attract private capital.

A general problem is that of forecasting, both general economic variables and traffic. It is not realistic to think that forecasts for 30 or 40-year periods are of great value. Certainly, there are pessimistic scenarios but perhaps the aggressive reactions of competitors on alternative routes has been underestimated in the past.

The reaction of users has not always been foreseen. There has been frequent hostility to tolls and also to their levels. This led, in Hungary, to court procedures, which ruled that tolls on the M1/M15 motorway were higher than the value of the services rendered (although the private concession company was not obliged to reduce the tolls and its shortfall is caused mainly by lower traffic than expected). In Western countries, for example in Toulouse, France, tolls were withdrawn for social reasons. In several cases, local opposition or requests for special treatment have led to discounts that risk undermining the financial solidity of the projects (Lyons ring road, France). It has been seen that it is politically difficult to begin to toll existing uncharged roads (Hungary M5 and M3 motorways, Poland A4 motorway). Moreover, if the timesaving benefits are not perceived as being worthwhile, alternative untolled facilities can see huge increases in heavy traffic. A general lesson seems to be that user fees must be proportional to perceived benefits and gaining public support for charging, through public consultation and applying efficient PR and marketing measures, is of crucial importance.

Costs of projects have not always taken account of all the upstream costs that a project brings in terms of additional network links, bypasses, etc. Without the ancillary investment, usually by the public authorities, the benefits of the project cannot be fully achieved.

To be implemented, projects need good managers more than experts. The public sector is generally better endowed with the latter, which emphasises the importance of setting up structures for projects which are close to private sector models.

Civil service skills in financial engineering need to be strengthened. One of the problems seems to be that civil servants involved in PPPs feel they apparently have less power (strictly limited direct intervention) and more responsibility (through sophisticated control and regulatory mechanisms) than in the past.

As regards funds, there are very substantial pension funds looking for reliable and long-term investment opportunities. Their potential involvement in financing transport infrastructure might lengthen the maturity of the loans, which in turn could reduce the financial cost of a project more substantially than interest rate cuts. In theory, the transport sector should provide a good outlet as traffic growth shows no signs of levelling off. The implementation of a number of successful projects could be the spur that attracts the funds needed to develop the transport system.

The low traffic levels on many links will not generate sufficient revenues to fully finance upgraded or new infrastructure. Low interest by the private sector can not be interpreted only as a lack of good faith, but the lack of appropriately attractive conditions.

## EXAMPLES OF PPP PROJECTS

The following examples provide a range of experience with the use of PPPs in the transport sector.

### **Shadow Tolls in UK: Design, Build, Finance, Operate (DBFO)**

For DBFO projects in the UK the Highway Agency decides on the main project characteristics, including the construction standards and schedule and service levels during the operational phase. Projects can be for existing or new roads. These projects come under the aegis of the Private Finance Initiative (PFI) and are a follow up to a publication: “Paying for Motorways” in 1993 and a consultation process on it.

Eight projects, covering 580 km have been launched. The first set of 4 projects was attributed in 1996 and is described below.

Under DBFO the public authorities give a concessionaire the right to build and finance infrastructure. The concessionaire does not obtain fees or tolls from users. The public authorities reimburse the concessionaire through a fictive or “shadow” toll. Payment depends on the traffic levels and the performance of the concessionaire. (including variables like the number of lanes closed to traffic or duration of maintenance work or indeed measures taken to improve safety).

### ***Rationale for PPP***

Previously, the Government had used separate contracts for road construction and maintenance; such a system is open to criticism because of, first, the absence of co-operation and incentives for the different actors and, secondly, the significance of cost overruns. (up to 30% according to a report from the National Audit Office).

### ***Financial and Contractual Structure***

The period from the launch of these 4 projects in December 1993 to contract signature lasted 28 months. Seventeen companies applied in the pre-qualification phase. Part of the reason for this was the publicity given by the Dept. of Transport. The openness of the call for tender process and the publicity in the official Journal of the EC are two factors that contributed, according to the NAO, to the success of the operation and to significant reductions in cost.

Concessionaires are rewarded mainly as a function of traffic flows. Four traffic bands with different rates for each of the bands were defined:

- Where traffic is between 0-70 million veh-km, the “toll” is 9 pence per veh-km.
- Where traffic is from 70-100 million veh-km, the “toll” is 6 pence per veh-km.
- Traffic from 100-130 million veh-km is “tolled” at 3 pence per veh-km.
- Above 130 million veh-km, there is no remuneration.

There is therefore a ceiling on remuneration. Potential concessionaires had the right to put forward their own traffic bands and “tolling” regime. They had past traffic data and traffic forecasts from the Highway Agency. The concessions of 30 years duration give incentives to carry out the work efficiently.

The logic is not just financial, but also and importantly tries mainly to transfer some risks, normally borne by the State, to the private companies.

Construction, maintenance and operation risks are entirely taken on by the private company. Penalties for poor maintenance are automatically invoked. Commercial risk, as expressed by unit price multiplied by traffic, is shared.

### ***Outcomes***

The National Audit Office published on the 28th January 1998 a report which concluded that:

- The DBFO contracts led to significant economies compared to traditional methods.
- The DBFO mechanism was beneficial with the advantages coming mainly from the innovative possibilities allowed to the concessionaire, from transferring risks to the concessionaire and from the efficiency gains due to private management. Without these conditions, DBFO is not better than traditional financing and is more expensive (mainly due to higher financial costs for private funds).
- Compared to classical tendering methods, DBFO took longer and had much higher transaction costs.

### ***Lessons***

DBFO’s advantages and disadvantages can be seen when compared to two other kinds of financing – traditional financing from the public budget and concession financing using tolls.

The advantages include not diverting traffic to alternative routes and not having the costs of toll collection (which can be from 10-15% of receipts). The other advantages of a “classic” concession - flexibility and a financial contribution from the concessionaire are retained.

At the same time, “shadow tolls” do not resolve completely the financing problem as the public authorities later have to pay. They do not therefore, generate new resources. It allows the concessionaire to be responsible for the financing package (and to make the debt non-public) but the ultimate payment is made by the taxpayer (delayed budgetary financing) and not by the user. The transaction costs can also be significant.

Finally, compared to public financing, shadow-tolls result in financing costs (due to paying private capital) which can be compensated by better project management. Shadow tolls allow a sharing of risk and efficiency gains because of taking a global view of the project, encompassing construction, operation and maintenance.

## **M1/M15 Motorway in Hungary**

### ***Project description***

The M1/M15 motorways lie on the Helsinki Corridor No IV and connect three capitals: Budapest, Vienna and Bratislava. The length of the concession sections are 43 km on M1 (between the city of Győr and the Austrian border) and 14 km on M15 (between the city of Mosonmagyaróvár and the Slovakian border). After the signing of the concession contract in 1993, the tolled sections of the M1 Motorway were opened in January, 1996, and the M15 sections in June, 1998.

### ***Rationale for PPP***

The Hungarian Government lacked the necessary financial means to finance the development of the motorway network. The Government therefore selected the purely commercial alternative of implementing and operating this project under concession.

### ***Financial structure/Partnership arrangements***

The toll sections of M1/M15 motorways were and are financed mainly from private investment. The project was financed roughly 20% from private equity and 80% from loans. Principal and interest repayments are to be fully financed by the company's toll revenue.

The financing structure was mainly based on the highest possible involvement of international working capital and passing on as much as possible of the risks of the project to the private sector, minimising Government commitment.

According to the concession agreement the initial toll rates were defined by vehicle categories and automatically increased without any prior consent of the Government on the basis of the domestic consumer price index and/or the exchange rate differential in proportion of the currencies of the loans (USD and DEM).

### ***Outcomes***

In 1996 and 1997 the average daily traffic represented 56.4% of the estimated amount in the initial Traffic Study. On an annual average basis, the motorway actually captured 46%-51% of the traffic in the corridor as initially estimated. Due to the traffic shortfall only 49.6% of the toll revenue forecast was achieved. The difference between the actual traffic rates and toll revenues was mainly attributable to the approach taken which consisted in not raising the toll at the frequency and by the amount allowed by the Concession Contract.

Following the opening of M1 motorway a litigation procedure was introduced against the concession company on the grounds that the extremely high toll levels were socially unjustifiable. This court procedure is still pending.

### *Main lessons*

The public was not prepared fully to accept and understand new financing techniques (BOT, PPP) to develop motorways and consequently to pay for the newly developed higher level of service which would not have been implemented without these tools. Tolling existing motorway sections is a very sensitive issue and therefore:

- Massive PR action is needed well in advance of starting toll collection in order to "sell" the idea.
- Reliable impact studies are required.
- Local governments should be involved from the early phase.
- Level of toll should reflect a socially acceptable magnitude.

## **M5 Motorway in Hungary**

### ***Project description***

The M5 motorway lies on the Pan-European transport corridors No. IV and X, it connects Budapest to Yugoslavia. The length of the concession section is 157 km. The project contains 17 interchanges and 10 rest/service areas. The Government issued an international tender for its rehabilitation, upgrading and further completion in 1992 and a preferred tenderer was selected in 1994. The tolled sections were opened to traffic in 1997.

### ***Rationale for PPP***

The Hungarian Government lacked the necessary financial means to finance the development of the motorway network. Following the encouraging reaction of the private sector to the M1/M15 Toll Motorway concession tendering, based on the positive results of a feasibility study, a decision to finance, build and operate the M5 Motorway was made.

### ***Financial structure/arrangements***

The structure of funding was based on 20/80% equity/debt ratio. Construction cost represents 64%, the concession company costs and expenses represent 13% and the capitalised interest represents 19% of the total expenses. The scope of the concession includes the construction of a subsequent section.

This project obtained a significant contribution from the Government, the most important of which is an ECU linked standby operational subsidy through the Road Fund. This facility can be disbursed if the costs are not covered by toll revenue. In return, dividends will be distributed as a revenue share to the Road Fund.

Toll collection is through a “semi-open” system. There is a main toll barrier (collecting 75% of the toll income) and 8 satellite toll barriers in three interchanges. The initial toll rates are defined in the concession contract by vehicle categories and toll plazas. Rates can be automatically increased without any prior consent of the Hungarian authorities on the basis of the domestic consumer price index and /or the exchange rate differential to the currency of the raised loans (FRF).

### ***Outcomes***

In 1997, the annual average daily traffic was around 7650 vehicles per day that represented 97% of the amount estimated in the initial traffic study. On a yearly average basis, the motorway actually captured 52% of traffic in the corridor, as initially estimated. Nearly 96% of the forecasted toll revenue was achieved. In the first months of 1998, the traffic increase was close to 7% compared to the previous year.

Soon after the opening to traffic of the sections of already existing motorway and tolled sections the inhabitants of villages and cities along the parallel road began protest movements against the toll as diverting traffic burdened the toll free highway. Negotiations started, focusing mainly on extending



the existing commercially based discount systems. The targeted groups are frequent and local users, including farmers and large fleet operator companies. The State is offering cash support to the concession company to compensate the loss of revenue as a consequence of these non commercially based discount developments.

### *Main lessons*

The practical experience on M5 motorway financing in concession can be summarised as follows:

- Tolling existing motorway sections is a sensitive issue politically:
  - massive PR action is needed well in advance of starting toll collection in order to "sell" the idea;
  - traffic diversion problems have to be highlighted;
  - local governments should be involved from an early stage.
- Level of toll should reflect a socially acceptable magnitude.
- Upgrading parallel roads, by-pass constructions must be added to the project cost.
- State involvement in the financing is unavoidable. Public-private partnership does not mean that governments hand over infrastructure to private enterprise on a 'no questions asked' basis.
- Control of construction costs by the state is of crucial importance because of the need for reliable bookkeeping.
- Discount systems can increase the number of users but reduce the revenue.
- Formulas for tariff changes should reflect the interests of the state and the society.

## **Motorway construction programme in Poland**

### ***Project description***

The Motorway Programme in Poland provides for the construction of approximately 2 600 kilometres of toll motorways over a period of 15 years. The future network will be composed by four main motorways: A-1 from Gdańsk via Lodz and Katowice to the Czech Republic; A-2 from the German border (Zwiecko) via Poznań, Lodz, Warszawa to the border with Belarus (Terespol); A-3 connecting Szczecin with motorways A-2 and A-4 and the Czech Republic; A-4 from German border (Olszyna and Zgorzelec) via Wroclaw, Katowice, Kraków, Tarnów to the Ukraine border (Korczowa). Motorways A-1, A-2 and A-4 are important part of Trans-European Network in Countries of Central and Eastern Europe.

### ***Rationale for PPP***

As the Polish Government lacked the necessary financial means to finance the development of the network, it selected a commercial alternative to implement the programme. Around 2 300 km out of 2 600 km of total planned network is to be constructed by private concessionaires.

### ***Financial structure/Partnership arrangements***

The implementation of the programme will require 10-15 billion USD in non-traditional, commercial financing (mostly based on PPP and the Build-Operate-Transfer system) as well as traditional financing (state budget, loans). The Agency for Motorway Construction and Operation (ABiEA), established under the Act on Toll Motorways, is responsible for implementation of the Polish Motorway Program as toll roads.

The government is to give concessions to an economic entity for the construction and operation of a motorway or segments of it for a specific period of time (approx. 30 years). The concessionaire has to prepare an engineering design of the motorway, raise appropriate funds and construct, operate and maintain the motorway segment for which the concession was granted. The total investment costs, including the cost of credits and operation relating to the maintenance, repairs and tolling should be returned within 15 to 20 years.

The Government of Poland, represented by ABiEA, will be responsible for several risk factors including right-of-way acquisition and preliminary environmental and design approvals. ABiEA will assume the risk and pay the cost of these items. To further reduce concessionaire's risk, ABiEA does not plan to reserve the right to set toll rates, or to regulate the setting of toll rates by the concessionaire. Several methods of controlling the maximum level of the concessionaire's overall profit are being prepared.

All commercial risks will be transferred to the private sector. During the period before and immediately after completion, due to low traffic volumes, some motorway segments may not be financially feasible, on a stand-alone basis. On segments with higher traffic volumes the excess revenues may be available. A methodology to capture and direct these excess revenues into segments that are otherwise unfeasible (cross-subsidy), is being studied.

## *Outcomes*

International tenders for five segments of A-1: Gdańsk-Toruń (152 km), A-2: Swiecko-Poznań, Poznań-Konin, Konin-Stryków (362 km), and A-4: Katowice-Kraków (61 km) have been held and concessions for winners issued. Further concessions are under preparation. At the same time traditional construction is carried out on some segments of A-1, A-2 and A-4, financed by the State, Phare, EIB and EBRD.

## *Main lessons*

It was not possible to achieve all the goals envisaged in the Motorway Construction Programme. Realisation of the Programme in the concessions system in a broader scope is made difficult in particular by the following facts:

- Additional detailed studies as well as traffic and economic analysis showed that the achievement of economically and technically consistent as well as financially feasible solutions would be difficult;
- The existing legislative solutions in the Motorway Construction Programme significantly limit the possibility of engaging public means and state guarantees in its realisation;
- Due to budgetary limits, the State is not able sufficiently and significantly to finance the traditional construction of the motorway network.

There are new legislative solutions being prepared, which will allow the State to take on greater political and financial responsibility in the motorway construction projects. Reorientation of the policy towards greater involvement of the State (public budget money and state guarantees) and wider possibilities of engaging the EU funds (ISPA) should support the realisation of the Motorway Construction Programme.

## **Channel Tunnel**

### ***Project Description***

The Channel Tunnel, over 50 km in length, links France and Great Britain by means of two main tunnels and a service tunnel. Two kinds of services are offered:

- direct trains, for passengers at high speeds (EUROSTAR) or goods
- shuttles for road goods vehicles

The crossing time between terminals is about 35 minutes.

A treaty was signed between France and the United Kingdom on the 12th February 1986 and the concession contract between the two governments and the concessionaires on the same date.

### ***Rationale for private involvement***

Both governments wanted to mobilise private funds and transfer the construction and operational risks to the private partners.

### ***Financial Structure /partnership arrangements***

The tunnel was financed on a strictly private base with no subsidies. Nevertheless there was a programme of accompanying measures on both sides of the Channel to take account of the regional and local land use effects of the tunnel.

Taking account of the international character of the project and the absence of a European society, two parent companies were set up (EUROTUNNEL SA and PLC) and a share swap introduced, though the administrative councils of the four groups (EUROTUNNEL and the two concessionaires) are almost identical.

The concessionaires have full commercial freedom. An agreement was made with the concessionaires and the rail operators which reserves half of the tunnel capacity for the railways. The rail operators have beneficial tariffs but bring guarantees to the concessionaire.

The structure of the operation evolved:

- First stage (85/86): capital divided between the construction companies (70%) and banks (30%). After the signing of a contract in August 1986, the construction companies set themselves as a construction consortium and banks formed a syndicate of 225 banks.
- Second stage (86/87): takeover of the major share by the institutional investors and the emergence of Eurotunnel responsible for the project, independent from banks, constructors and railways.
- Third phase: opening of capital to private investors.

## ***Results***

The project saw sharp increases in costs and frequently strained relations between the different actors. Additional construction , equipment and interest costs meant that in the end the project cost about twice (in constant money terms) as much as originally foreseen.

The concession contract of 29 July, 1987, initially to be of a duration of 55 years, was amended twice, to 65 years (December 1993) and then to 99 years (1998). These extensions were agreed in conjunction with two renegotiations of the financial package.

The public authorities had originally expected that the private financing of the project would allow all contract details to be settled automatically within the context of the project. However because of cost overruns and the wish to protect the investors the governments agreed to the lengthening of the concession period.

## ***Main lessons***

The project has been successfully completed without the involvement of public money. Nevertheless construction costs and deadlines were overrun, the concession contracts had to be revised and the financial structure renegotiated. Some key lessons are:

- The need to have a concessionaire who is distinct from the promoters (banks and construction firms) to take account of the project in its entirety.
- The need for a clear separation of responsibility for risks.
- The difficulty to finance such projects without a public guarantee or an existing enterprise.
- The difficulty to allow flexibility for the project, while on the one hand respecting safety and service quality guidelines and on the other avoiding too great uncertainty for the promoters.

## Case of the “Financière TGV” Corporation created by Belgium

### *Project description*

After extensive restructuring and repeated rationalisation, involving massive downsizing (with staff being cut from some 68 000 in 1981 to 40 000 today), the Government adopted a major 10 year (1996-2005) restructuring and capital spending plan for the railways. Its goal is to bring the SNCB's profit-and-loss account gradually back to the break-even point and to turn a profit by 2005. It has three priorities:

- To complete the financial consolidation of the Belgian railway corporation.
- To promote the modernisation of the domestic rail network.
- To construct the Belgian portion of the high-speed rail network, i.e. the infrastructure linking Brussels to London and Paris, to the Netherlands, via Antwerp, and to Germany, via Liège.

A special independent entity, a public limited liability company (*société anonyme*) - “Financière TGV” - was created to arrange the financing of the investment needed to undertake the high-speed rail project.

### *Rationale for PPP*

The desire to reduce the annual operating deficit and keep the SNCB's debt under control led to a scaling back of the volume of capital spending. The level of spending was not enough to maintain existing railway operations and precluded any new projects, whether to expand the domestic network or to tie Belgium into the European network of high-speed trains.

### *Financial structure/Partnership arrangements*

The entity “Financière TGV” has two guiding principles:

- Infrastructure specific to high-speed rail service must not be financed by either the railway corporation or the State.
- The railway corporation—SNCB—must nonetheless retain control over the entire railway network, including high-speed lines.

The “Financière TGV” corporation is only a financing instrument and its funds come from many sources:

- Société fédérale de Participation (SFP), acting on behalf of the Belgian State, was to provide BF 30 billion (€750 million).
- SNCB was to provide property assets worth BF 10 billion (€250 million).
- Financial support currently granted by the European Union was to be allocated to the corporation. This aid is expected to total some BF 10 billion (€250 million).

- The private sector was invited to make equity investments of up to BF 10 billion (€250 million) in Financière TGV.
- The balance was to be provided by loans from the European Investment Bank and other financial institutions, guaranteed at no charge by the State.

In exchange for these contributions, SNCB issues preferred shares, without voting rights, which are entitled to guaranteed dividends until 2020. Beginning in 2021, dividends will be proportional to those, if any, payable on SNCB ordinary shares.

### ***Outcomes***

Financière TGV's framework has been a success in the realisation of a ten-year programme of consolidation and promotion for the Belgian railway corporation, which should reinvigorate Belgium's railways. The modernisation of the domestic network and the introduction of high-speed services go hand in hand: one is not being undertaken to the detriment of the other. In allocating its funds, the State gives priority to the development of the domestic network, which corresponds to its primary responsibility. The State continues to give active, but more indirect, support to the integration of the Belgian railway network into the European high-speed rail network, which is in line with its international commitments.

### ***Main lessons***

All negotiations surrounding the creation of Financière TGV showed that it was extremely difficult to attract private risk capital into legal and financial arrangements concerning the construction and operation of high-speed rail infrastructure.

Getting the private sector involved in the corporation's creation entailed mechanisms for highly ensured or guaranteed dividends. In Belgium's case this was a necessary prerequisite, even though in the medium and long terms, the Belgian high-speed rail project will yield financial and socio-economic benefits.

## **Athens International Airport**

### ***Project description***

The project is a major plan to upgrade Athens International Airport. It will serve up to 16 million passengers per year, have a parallel runway system allowing simultaneous take off and landings and allow for a maximum traffic of 65 movements per hour or about 600 per day. Construction work began in 1996 and the first phase of the airport is anticipated to be operational in March 2001.

The airport will be accessible by a new six-lane motorway, to be ready when the airport opens. A year later the western part of a peripheral motorway will be opened. The development of a suburban railway link connecting downtown Athens with the new airport is also foreseen.

### ***Rationale for PPP***

The insufficiency of public funds and the intention to encourage the private participation in the development of the transport infrastructure were the two main reasons for choosing the PPP financing scheme for the Athens International Airport construction.

### ***Financial structure/Partnership arrangements***

The project is a PPP involving the Hellenic Republic, which holds the majority (55%) of shares and a private consortium, which holds the remaining shares (45%) and is composed of the following companies: Hochtief AirPort GmbH, ABB Calor Emag Schaltanlagen AG, H.Krantz-TKT GmbH and Flughafen Athen-Spata Projektgesellschaft mbH. Hochtief AirPort GmbH has undertaken project Management.

It is the largest airport construction project in Europe, with an estimated budget of DM 4.1 billion. The sources of funding are:

- European Investment Bank Loan (Greek State guarantee): DM 1,950 million (47%).
- Commercial Banks Loan (Hermes guarantee): DM 610 million (15%).
- Airport Development Fund: DM 490 million (12%).
- EU grants-European Cohesion Fund: DM 455 million (11%).
- Greek State grants: DM 275 million (7%).
- Share Capital (payable by the Consortium): DM 250 million (6%).
- Subordinated debt (payable by the Consortium): DM 80 million (2%).

The project is a BOOT scheme (Build, Own, Operate and Transfer) and the concession period is for 25 years from the start of operation. During the operation period, the Concessionaire is obliged to maintain the infrastructure and keep the service at efficient levels. On the other hand, he is granted the right to collect landing charges from the airport users. A special charge on passengers has been introduced to finance the scheme. However he is not allowed to exceed the upper limits mentioned in the Concession contract.

The Public sector is responsible for possible delays in the completion of other relevant projects. For example, the generated traffic on western peripheral motorways is strongly connected



with the operation of the airport. Therefore, there are terms in the Concession agreement that define penalties in case of such delays.

The taxation policy is structured as follows:

- Concessionaires equity is not subject to any tax for the first 15 years of operation.
- The revenues are free of income tax and VAT is returned.
- Procurement is done with direct pricing without any income taxation.

### ***Outcomes***

The current work progress is in accordance with the overall planned schedule and the set target dates. Construction has also commenced in many other areas including the sewage treatment plant, the water supply system, the power system, west runway and others. It is estimated that the overall construction progress achieved to date (March 1999) is in the order of 41,6%.

### ***Main lessons***

- PPP has helped to ensure that project is being built on time
- Bridging the gap between financial and socio-economic viability has required a substantial public contribution.

## **Warsaw Airport**

### ***Project description***

At the end of the last decade, in order to adapt Warsaw Airport to the increasing air traffic (about 85% of Polish air traffic is concentrated in Warsaw and the Warsaw Airport handled 3.1 million passengers in 1997), the Ministry of Transport and Maritime Economy decided to construct a new passenger terminal and cargo terminal and a new catering base. The design capacity of the passenger terminal has been set at 3.5-4.5 mln passengers in year, the cargo terminal at 60 thousand tonnes of cargo and the catering base at 15 thousand meals per day. The new terminal in Warsaw was opened in 1992 and is approaching now its design capacity.

### ***Rationale for PPP***

The Government could not allocate sufficient financing from public budget sources. An international tender for the design and construction works of the terminal was announced and the tenderers were asked to propose the method of financing of the investment.

### ***Financial structure/Partnership arrangements***

An offer, submitted by the German construction firm HOCHTIEF together with CITIBANK A.G. from Frankfurt, was accepted. It was agreed that the total cost of the new facilities at the Warsaw International Airport would be covered:

- 20% by the enterprise “Polish Airport” (PPL, which is the owner and operator of the airport) and from the funds provided by LOT Polish Airlines which is the primary user of the airport;
- 80% from the funds borrowed from CITIBANK which would be repaid in the long-term two-thirds by “Polish Airports” (for the passenger terminal) and one-third by LOT (for the cargo terminal and catering base).

The loan agreement with CITIBANK for the project financing was concluded in 1990 for the total amount of DM 221,7 million. The guarantees were given by HERMES insurance company and by the Polish Government. The repayments on the loan began in 1993 and should be completed by the end of the year 2000. According to the agreement between PPL and CITIBANK the latter is allowed to collect all hard currency payments (for the Air Traffic Control services and airport fees) to PPL by foreign flag carriers. From these revenues, the capital repayments, the interest on the loan (FIBOR rate), and other fees owed to CITIBANK are being paid. A fixed amount is accumulated as a reserve in a collateral account. The charges and fees collected by the Bank in excess of the amounts required to meet the above obligations are remitted to PPL.

### ***Main lessons***

The experience gained from the construction of the new terminal using the partnership of a private bank - CITIBANK and a state enterprise PPL show that such a PPP system is feasible and effective.

## **Ports and, in particular, Gioia Tauro (Italy)**

Financing of ports in Europe varies considerably and ports may be owned by the State, regional or local governments or by private enterprises. There is, however, a trend in Europe that ports are considered more and more as commercial entities which ought to recover their costs entirely from port users. This trend also involves greater private sector participation in port activities, particular those activities which are of a commercial nature such as cargo handling. As a result financing of port facilities is increasingly becoming the responsibility of the private sector, while the port authorities tend to restrict themselves to their landlord role.

One area where PPP is now increasingly seen is where ports are moving from city centres to other locations outside the city. This kind of move usually offers new development opportunities for the port and the city. Successful moves normally require effective co-operation between public and private actors. The public sector will have to provide the legal framework as well as adequate infrastructure to the new site. The private sector on the other hand can bring in its professional knowledge in setting up integrated logistics and transport systems as well as its own asset financing capacity.

### ***Project description***

The Port of Gioia Tauro is located in southern Calabria. The port was constructed some 20 years ago to serve local industry, but economic conditions changed, and in the end the port was little used. In 1993, Contship Italia (a subsidiary of a Dutch shipping line) submitted a project aiming at developing a transshipment centre in the port. A contract between the company and the Italian government was signed and the implementation of the project started a year later. The company responsible for the project was MEDCENTER Containers SPA of Calabria, a joint venture between CONTSHIP and other private and public investors such as the Italian Railways (FS)<sup>1</sup>. The objective was to develop the port into an international container transshipment terminal and attract round the world container ships passing through the Mediterranean, and feeder traffic to other Mediterranean ports.

### ***Financial structure/Partnership arrangements***

The first phase of the project was completed in 1996. The total investment in the first container terminal amounted to 165 million Euro of which the Italian government invested 50 million Euro, the European Union's structural fund 40 million Euro and the private sector 75 million Euro.

The port turnover grew rapidly and a multi-modal terminal has been developed close to the port. The total cost of the port investment is now just below 600 million Euro. The private sector accounts for about 100 million Euro (16% of the total investment). However, the share of private sector investment is more than 35% of the construction cost of the multi-modal center. Apart from CONTSHIP, which is the leading private investor, Maersk and Sea Land will invest in the port.

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1. MEDCENTER is now fully under the control of CONTSHIP.

### ***Outcomes***

Gioia Tauro's central position, coupled with sustained growth in the container market, has made the project a viable proposition and a number of regional benefits have been achieved. The port is today the number one container port in the Mediterranean area and 16<sup>th</sup> container port in the world. The port handles more than 2 million TEU (an increase of 46 % from 1997) and a number of short sea shipping routes have been established as feeders for other Mediterranean ports. This has created a synergy effect on other southern European ports. The port, which is located on the main East-West route, is linked to more than 20 other ports in the Mediterranean and the Black Sea.

### ***Main lessons***

The initiative, largely from the private sector, identified a profitable and socially beneficial project.

## **Øresund link, Denmark/Sweden**

### ***Project description***

The Øresund fixed link spans the straight between Denmark and Sweden and consists of rail and road parts. The construction of the link was agreed between the Swedish and Danish Governments in 1991 and it is expected to be open in 2000. The link will consist of a four-lane motorway and a two-track railway line plus land constructions in Denmark and Sweden to connect the link with the existing infrastructure. The coast-to-coast crossing time will be approximately 10 minutes for cars and five minutes for high-speed trains. The railway connection from Copenhagen Central Station to the city centre of Malmo will have a length of 55 km.

### ***Rationale for PPP***

The link is legally based on a bilateral agreement between the Danish and Swedish Governments from 1991, describing the rationale of the link as to strengthen cultural and economic co-operation between the two countries. The bilateral agreement specifies generally the preconditions for the link such as promotion of public transport, the overall strategy for fixing user charges.

### ***Financial structure / Partnership arrangements***

The Governmental agreement includes no time limit for the "concession" and a detailed concession contract has not been prepared. Øresundskonsortiet (the Øresund Consortium) is responsible for design, construction, financing, ownership, and operation on a concession-like basis. Øresundskonsortiet is fully owned by two state owned joint stock companies, A/S Øresundsforbindelsen (Denmark) and SVEDAB AB (Sweden) each having a 50% share. These companies are themselves responsible for the land constructions in the two countries. The coast-to-coast section will be financed by user charges and the land constructions will be financed via surplus revenues, generated by the coast-to-coast section. Denmark and Sweden have provided an unconditional State guarantee for all financial liabilities of Øresundskonsortiet to ensure favourable financing terms. Charging policy will be decided by Øresundskonsortiet within guidelines established in the bilateral agreement. The charging policy is a salient political issue and will have to be agreed upon by the political systems in the two countries.

Øresundskonsortiet is operating as a project management organisation, tendering all construction works to public or private companies. A very important and rather unusual rule in all contracts is that the contracts specify the responsibility of Øresundskonsortiet, implying that all aspects which are not explicitly specified to be Øresundskonsortiet's responsibility automatically are the responsibility of the construction companies. Øresundskonsortiet has a quite high degree of autonomy vis-à-vis the political-administrative systems in Denmark and Sweden.

The project is based on full cost recovery where all costs related to planning, construction, financing and operation of the fixed link will be covered by the users. No funding shall be forthcoming from the respective State budgets of the two countries. Use of the link's road part will be paid by road tolls while use of the link's railway part will be paid by an annual jointly payment of DKK 300 million (in January 1991 prices) by the Danish and Swedish national railway

operators/infrastructure companies for the use of the link. This amount will not fluctuate according to the actual use of the railways.

Øresundskonsortiet has been established with a total equity of DKK 50 million, provided equally by the two owners.

At the time of the link's opening, year 2000, Øresundskonsortiet's liabilities are expected to be approximately DKK 19 billion in current prices.

### ***Outcomes***

All three parts of the fixed link have seen cost overruns, the level of which is higher than 30%. A large part of these relates to costs associated to minimising the negative environmental consequences.

The construction works proceed according to the time schedules. Unless drastic and unforeseen impediments, the link will open in 2000 as planned. All contracts include a time schedule which must be followed, otherwise the companies will be fined. Thereby, the contracts provide an incentive structure to reduce time overruns.

### ***Main lessons***

The basic framework, based on the Danish-Swedish agreement and the supporting legislation, determines that a fully state owned company, Øresundskonsortiet, is responsible for establishing a fixed link consisting of a rail and a road parts.

The construction is financed by loans guaranteed jointly and severally by Sweden and Denmark. This makes it possible to obtain the best terms on the financial markets.

The Øresund link is a very good example of public-public partnership between two countries and state-owned companies. The public-private partnership is enhanced by a very clear mechanism for risk-sharing.

## **Motorways in France**

### ***Project description***

France has experimented with both toll and non-toll financing as well as with publicly and privately owned toll roads in building its system of motorways (or “*autoroutes*”). The construction, maintenance and operation of the national road network is financed from the national budget (25% of total cost), the regional budgets' grants to national network (15%), and toll motorway concessionaire companies' resources (60%).

The French toll motorway system started in the 1950s. In 1960, 170 km of motorways (among which 10 km were concessions) were in operation, in 1980, 5010 km (3730 km concessions) and in 1998, 8900 km (6705 km concessions).

### ***Rationale for PPP***

Government wanted to mobilise user charges and to enhance efficiency through public sector and private sector companies.

### ***Financial structure/partnership arrangements***

Between 1956 and 1963, five "mixed" companies were set up (these companies are called “*sociétés d'économie mixte concessionnaires d'autoroutes*”, or SEMCAs). Nevertheless, the initial concessions were given for only short links of motorways (50 to 70 kilometers) except in 1963, for the top priority, the south-north axis between Lille, Paris and Lyon (130 and 160 kilometers segments).

All five SEMCAs shared a similar financial and organizational structure: they were very weakly capitalized (EURO 100 000 to EURO 300 000) and share-holders were only public bodies; the national equity stake was held by the Caisse des Dépôts et Consignations (CDC), a state-owned investment bank.

The Government provided initial financial assistance by guaranteeing loans for the SEMCAs and providing cash and advances which were fairly significant (averaging 30 to 40% of construction costs).

At the end of 1960s, a reform was made in order to allow private companies to compete for new concessions and to strengthen the existing SEMCAs by giving them more autonomy and responsibility.

Between 1970 and 1973, four private toll road companies were awarded contracts for 300 to 500 km motorways each. All four new concessionaires were consortia of major French public works companies.

The motorway companies were increasingly expected to subsidize new stretches with surpluses generated on segments which had higher traffic flows and had been built at lower cost. Moreover, the dates at which the concessions on their older and more lucrative sections would expire, were often extended. A system of cross-subsidization within companies appeared gradually.

At the beginning of the 80's the motorway system faced serious problems of cash deficit, a reason for which (but not the only one) was the global oil crisis. The State took over three out of the four private companies and indemnified shareholders.

Since 1994, multi-year contracts for investment have been implemented; these contracts make a balance between investment and toll increases and give certainty to concessionaires for a five year period. The semi-public companies have been consolidated into three main groups in order to gain in terms of geographical coherence and financial viability.

### ***Results***

France has set up a meshed network of motorways largely based on toll concession. Nevertheless there is a spin-off effect, i.e. a bias for toll concession motorways (due to the fact that financing them is easier).

### ***Lessons***

- most of the projects have needed public support, mainly through grants (and increasing the original duration);
- more than privatisation, "corporatisation" is a key to success;
- the role of the State is changing, but is not weaker.



## **Vasco da Gama Bridge in Lisbon, Portugal**

### ***Project description***

In 1991, the Portuguese Government decided to construct a second crossing over the Tagus estuary, in Lisbon, to reduce congestion on the existing bridge. This crossing, the Bridge of 25 April, was opened in 1966 and was close to saturation with average daily traffic of 125,000 vehicles (this number being twice the 1982 figure), mostly regular users. The only alternative crossing was 25 km distant at Vila Franca. The new crossing has a total length of approximately 18 km and a maximum span of 420 meters in the main bridge.

### ***Rationale for PPP***

The Portuguese Government took the Dartford and Severn crossings in the UK as models and decided to transfer to the private sector the commercial (traffic) risk, as well as the construction, operating and financing risks. The project also benefited from substantial EU funding.

### ***Financial structure/partnership arrangements***

The work was carried out as a concession given to the GATTEL (Gabinete da Travessia do Tejo em Lisboa, a structure which depends on the Ministry for Public Works, set up by a decree on 9 January 1991), to supervise the process of attributing the concession for the operation of the Bridge of 25 April and the construction and operation of the new Vasco de Gama bridge.

Following an international call for tender, the Government selected two favored candidates and the Lusoponte Grouping, led by Kvaerner/Campeon Bernard SGE (with the addition of large Portuguese companies Bento Pedroso, Mota, Somague and Teixeira Duarte). The concession contract was signed on 25 March 1995. On 1 January 1996 the operation and revenue of the Bridge of 25 April was given to Lusoponte. Finally, the Vasco de Gama bridge was opened on 29 March 1998 (within the deadline and 2 months before the opening of Expo 98). The franchise was drawn up and introduced in the context of a fixed price and fixed deadline contract between Lusoponte, the concessionaire and Novoponte, a society bringing the shareholders in Lusoponte together.

The cost of the project was about 884 million Euros, in current values at the time of entering into service. Cohesion funds provided 35% of the cost. Taking account of subsidies provided by the State for fares concessions, the total level of subsidy was about 44% of the total cost. The concession has a maximum duration of 33 years and will terminate when (1) the total traffic on the two bridges, in both directions, from the 1 January 1996 reaches 2 250 million vehicles and (2) the bank debt has been paid.

### ***Results***

The concession contract foresaw a mechanism to ensure financial balance for the concessionaire under certain circumstances. It should be noted that the concessionaire has already benefited three times from this procedure:

- in 1994, under pressure from users, the State decided to increase the tolls on the old bridge by only 50% (instead of 160% asked) and also imposed on Lusoponte a special charging system for frequent users;
- the State also requested that charges on Bridge between 25 April 1996 and 1998 be frozen;
- finally, the State asked that no tolls be paid during the months of August in 1996 and 1997.

### ***Lessons***

The public sector put a clear structure in place (GATTEL) to manage the operation, defined the main parameters of the project and provided financial support through the tolls from the existing bridge. In this operation, the private sector took on the technical risks as well as the economic and financial ones linked to the construction, maintenance and operation of the bridge, with its remuneration coming from users.

The public sector took on the risks in case of:

- events of *force majeure*;
- occurrence of exceptional events causing extreme damage to exchange markets;
- legislative changes which have a specific, material and direct impact on the revenues or costs relating to the operation of the crossing.

Whenever the Concessionaire is entitled to the restoration of the financial balance of the Concession, it can take place through a mechanism which achieved a financial equilibrium. This mechanism uses objective key-criteria, such as “debt cover ratio”, “loan life cover ratio” and “internal rate of return” for the shareholders.

The length of the concession is a maximum of 33 years but is variable, and depends on when total traffic reaches the limit above on condition that the debt is paid.

## **CONCLUSIONS AND RECOMMENDATIONS ON PUBLIC-PRIVATE PARTNERSHIPS (PPPS) IN TRANSPORT INFRASTRUCTURE FINANCING**

The ECMT Council of Ministers of Transport of ECMT, meeting in Warsaw on 19 and 20 May 1999:

### **NOTE:**

- The contents of the report CEMT/CM(99)21/FINAL on Public-Private Partnerships in the Transport Sector;
- The growing number of examples of PPPs in different countries and for different modes of transport.

**SUPPORT** the following conclusions from the above report:

1. PPPs can take many forms from simple commercialisation to full privatisation but, in general, are long term agreements between the public and private sectors to provide and operate transport infrastructure and/or services. PPPs involve a sharing of responsibility and risk by the public and private partners;
2. PPPs have the potential to provide, through financial engineering and often but not necessarily by tolling, a valuable addition to traditional means of financing transport infrastructure and services;
3. PPPs can help provide public infrastructure and services in a more economically efficient way than public administration entities;
4. At present, however, PPPs meet only an extremely small share of transport investment needs, in ECMT countries;
5. Introducing PPPs requires a favourable macroeconomic climate and a regulatory framework that supports and encourages private sector involvement;
6. Introducing PPPs also require a political debate so that the political actors and the public accept the approach, especially when charging is involved;
7. There is a growing experience with PPPs in different countries with different legal structures and traditions and in a variety of transport modes;

8. PPPs have to be structured with great care at the start to make the project requirements, roles and responsibilities clear and to regulate conflicts of interest;
9. Contracts should cover all the major aspects of the PPP project but should allow some flexibility for innovation and economy, specifying performance requirements and not necessarily technical details.

**AGREE** that the following recommendations provide a framework in which to develop PPPs:

1. ***Obtain political and popular support for using PPPs by:***
  - preparing transport development strategies;
  - initiating a debate on public infrastructure and service provision and financing;
2. ***Involve the appropriate private sector actors early in the process and discuss the following options with them, especially in sharing of risks and responsibilities:***
  - project design;
  - ways of achieving low cost solutions;
3. ***Ensure that the needed regulations and procedures are in place so that PPPs can work, including:***
  - competitive procurement procedures, especially transparency and flexibility;
  - provision of a stable and clear-cut legal and fiscal framework;
  - regulation of potential conflicts of interest;
  - possibilities for private sector involvement in tolling (if required);
  - support of and appropriate training for government officials;
4. ***Build on the experience gained in previous PPP projects in different countries and by IFIs;***
5. ***Set up projects with clear ownership and management structures and division of responsibilities:***
  - by negotiating with the private sector partners;
  - by contracts which are clear and agreed;
  - by an efficient and transparent allocation of risks and rewards;
6. ***Undertake some trial/pilot projects and learn by doing;***
7. ***Continue to exchange experiences on the results of PPPs, both the successes and the failures.***

**AGREE** to take account of these conclusions and recommendations in drawing up proposals for PPPs.

**ASK** the Committee of Deputies to facilitate a continuing exchange of experience on the subject and to report back in due course.

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