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**METHODOLOGICAL DEVELOPMENT AND HARMONIZATION OF TRANSPORT
STATISTICS**

Statistics on passenger transport by buses and coaches

**DRAFT STATISTICS HANDBOOK ON
INTERURBAN PASSENGER TRANSPORT BY BUSES AND COACHES**

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PREFACE AND INTRODUCTION

At the invitation of Statistics Netherlands (CBS), the Workshop on statistics on long-distance transportation by buses and coaches was held in Maastricht (the Netherlands) on 29 November 2006.

The participants in this Workshop decided to create a task force on the statistics of long-distance transportation by buses and coaches, with representatives from the following countries: the Czech Republic, Estonia, Germany, the Netherlands, Slovakia and Sweden, although participation is open to all Member States. Poland and Romania participated in some sessions.

The task force held seven meetings:

- 22-23 February 2007 in Brussels (Belgium);
- 10-11 May 2007 in Prague (Czech Republic);
- 27-28 September 2007 in Brussels (Belgium);
- 22-23 November 2007 in Stockholm (Sweden);
- 13-14 March 2008 in Bratislava (Slovak Republic);
- 25-26 September 2008 in Wiesbaden (Germany);
- 12-13 February 2009 in Prague (Czech Republic).

The entire work on the Handbook was chaired and coordinated by Peter Smeets (the Netherlands), who also wrote the chapters on the “Scope of the Handbook” (chapter 1), “Environment” (chapter 7) and the “Summary”. Andreas Nägele (European Commission/DG TREN) wrote the chapter on “Users' needs” (chapter 2). Olga Kastlova and Milan Brich (Czech Republic) wrote the chapters on “Traffic and Transport Measurement” (chapter 3) and “Accidents” (chapter 6). Frits Mullenders (the Netherlands) wrote the chapter on “Transport Equipment” (chapter 4). Uwe Reim (Germany) and Epp Karus (Estonia) contributed chapter 5 on “Infrastructure” and chapter 8 on “Enterprises” respectively.

The Intersecretariat Working Group, comprising Mario Barreto (ITF), Ould Khou Sid'Ahmed (UNECE) and Hans Strelow (Eurostat), prepared the annex on definitions which is based mainly on the 4th edition of the Eurostat/ITF/UNECE Glossary for Transport Statistics.

The annex 2 on “Methodology and questionnaire” was prepared by Johan Johansson and Anette Myhr (Sweden).

“Available data” (annex 3) was collected from various sources including the UNECE Transport Statistics Database.

CHAPTER 1

SCOPE OF THE HANDBOOK

In order to support the current transport policies of the European countries there is a growing need for statistical information, comparable at international level, which monitors trends in passenger transport.

One of the areas that need more statistical attention is transportation by bus and coach, especially over longer distances. The demand for reliable and comprehensive statistics is constantly increasing. At present, such statistics are compiled on the basis of different methodologies, depending on the data available. To meet the demand for data about bus and coach transportation, the Working Party on Transport Statistics, at its fifty-seventh session (7-9 June 2006), accepted the offer of the Government of the Netherlands to host a Workshop on statistics on long-distance transportation by buses and coaches.

The aim of the Workshop was primarily to examine calculation methods applied in the European countries for the purpose of finding best practices, and thus lend impetus to the improvement of national calculation methods.

The Workshop addressed the important issue of the statistical coverage of bus and coach transport and also the needs for official statistics. The transport industry and especially the companies that offer long-distance transportation have a considerable interest in comprehensive information that covers a large number of issues and countries. This enables them to position themselves in this market. Moreover, policy makers and public administration face increasing problems in the field of decreased mobility as a result of congestion and the strong impact of individual transport on the environment.

The Workshop also paid a great deal of attention to users' needs and considered issues including availability of data, their usefulness, comparability and accuracy/ It also underlined the need to collect, estimate and supply data on different areas. Furthermore, the industry contributed an important input to the workshop.

It was decided to set up a task force to draw up an overview of the best practices in data collection and dissemination. One of the instruments used was a short questionnaire to gain an insight into the availability of data on different subjects. During the process, it became clear that, due to the friction between users' needs and possibilities, the task force would have to define the scope of the work more precisely. One of the main issues was the question of whether to include urban transport in the Handbook. The term "long-distance transportation" is defined differently in the various countries consulted.

For all of these reasons, there is an increasing interest in transport statistics. A good starting point to develop this statistical area was to prepare a handbook of best practices. This Handbook gives an overview of the current need for statistical data and available statistics.

One of the most delicate issues in statistical terms is the need to distinguish between statistics that describe the situation in and around urban areas and statistics that cover passenger

traffic over longer distances, often referred to as interurban services. Also, the insight into border crossing traffic is of major importance.

The Handbook originated in the context of functional transport statistics. Consequently, the sequence of the subjects in this handbook reflects this context. After users' needs, the performance indicators such as number of passengers and passenger kilometres will be discussed. Fleet statistics and infrastructural data will complete the set of functional data. Thereafter, the effects of transport will be addressed in terms of safety indicators, followed by the environmental impact and energy consumption. Institutional data will comprise the third component. Enterprise data from the bus and coach industry will complete the presentation.

Most official statistics provide very poor coverage, if any, of financial indicators and service quality indicators. Therefore, these data will only appear in the users' needs chapter and will not be further elaborated.

The synthesis chapter summarizes the possibilities for the future. Definitions taken from the Glossary for transport statistics (4th edition), along with the pilot questionnaire and existing data and proposed tables, make up the three annexes to the present Handbook.

The task force considers the scope of the handbook as a means to help countries improve their existing statistics on bus and coach transport or to generate new statistics in this area. The handbook highlights the advantages and problems linked to the various methodologies, touches on possible ways to overcome specific problems relating to an applied methodology and presents specific examples from the Member States. Finally, the handbook seeks to address the need for internationally comparable statistics on the bus and coach industry, recommending the regular submission of a limited set of harmonized tables to UNECE, the International Transport Forum and Eurostat.

CHAPTER II

USERS' NEEDS

I. INTRODUCTION

Passenger transport by bus and coach is widely considered to be among the safest, most environmentally-friendly and affordable modes of motorized transport.¹ It helps combat congestion and other negative effects of transport. It is the most important mode of collective transport. The figures for bus and coach transport are often underreported, as sometimes not all market segments are covered by official statistics. This is one of the reasons why passenger transport by bus and coach, in particular on interurban routes, can be described as “the forgotten mode of transport”. It is not surprising, therefore, that it receives relatively little attention from policy makers and transport planners.

Some countries provide no statistical information on the performance of their bus and coach operators. In many countries, the statistical coverage of passenger transport by bus and coach is not very detailed. Often, no distinction is made between urban and interurban regular transport. Data on occasional transport services (coach tourism) are completely lacking, for the most part. The problem is even more acute at international level (international passenger transport services by buses and coaches), where hardly any data are available.

Against this background, more and more users are asking for more differentiated data on the transportation of passengers by buses and coaches. There should at least be a distinction between the following kinds of passenger transport services by bus and coach:

- Regular (and special regular) urban and suburban services;
- Occasional urban and suburban services;
- Regular (and special regular) interurban services, national and international;
- Occasional interurban services; national and international.

A. Regular urban and suburban passenger transport services

1. Regular urban and suburban passenger transport services are the most common category of services – at least in terms of number of passengers. They are usually relatively short-distance (<50 km). In most if not all cases, they are subsidized by public administrations to perform services which a private operator would not offer from a purely commercial point of view. The operator is reimbursed from public coffers for the provision of “public” services, such as scheduled trips at a predefined fare until late in the evening or during weekends (although passenger numbers are usually low then). These public services offer the citizens a level of connectivity to the outside world which they would otherwise not have. In these cases, transport performance data are mostly available – they are used by the public administration in charge to check whether the money is well spent. Regular urban passenger transport by bus and coach also includes sightseeing trips with fixed timetables offered by bus operators in cities that are sufficiently attractive to tourists.

¹ A study, carried out on behalf of the American Bus Association (ABA) Foundation, concluded that “the transportation service provided by the motor coach industry was the safest, most fuel efficient and least energy intensive” and therefore “the most cost effective provider of transportation service”. Nathan Associates (2006): “Impacts of the Motor Coach Industry on Society and the Economy: An Industry that Binds the Nation Together”, p. IV.

2. Special regular urban and suburban passenger transport services are services for a certain predefined group of passengers, such as school children or workers of specific companies being driven to and from their place of work. Data on these services are difficult to come by. Although their market share is not insignificant, only a few countries collect such detailed passenger transport data.

B. Occasional urban and suburban services

1. Occasional urban and suburban services are hardly ever covered by statistics. Some chartered sightseeing city tours which do not follow a fixed timetable would fall into this category. Data on the size of this segment are very scarce – too scarce, in fact, to make any statement about the actual size and importance of this segment.

are hardly ever covered by statistics. Some chartered sightseeing city tours which do not follow a fixed timetable would fall into this category. Data on the size of this segment are very scarce – too scarce, in fact, to make any statement about the actual size and importance of this segment.

C. Regular interurban passenger transport service

1. Regular interurban passenger transport services by bus and coach are a relatively inexpensive and efficient alternative to interurban rail transport (where there is a rail connection) or short-haul flights and to the use of individual means of transport. Some regular interurban passenger transport services by bus and coach are competing with rail transport; other services are more complementary to it. They provide a greater coverage of rural areas than any other mode of collective transport. The market for regular interurban transport services by bus and coach appears to differ considerably in the various UNECE Member States: countries with a dense network of interurban bus and coach transport services and coach terminals are next to countries where this form of transport is less commonly offered and used.

2. Special regular interurban passenger transport services would include the transportation of workers to and from their place of work if this place of work is in another city or too far away from an urban area to be included among urban and suburban services. Data on this category are very rare. Hardly any country distinguishes between regular and special regular services **in general** in the statistical coverage of the sector. Even rarer is a distinction between regular and special regular **interurban** services. It is thought that the market for special regular interurban services is relatively small.

D. In contrast, occasional interurban passenger transport services, mainly by coach, play an important role in the market for interurban passenger transport services by bus and coach. In some countries, occasional interurban services are far more important than regular interurban services. Most such trips fall within the scope of coach tourism. Whereas tourism statistics cover this aspect to some extent, the focus is more on the accommodation of tourists than on the means of transport used to get to the tourist destination. It would therefore be helpful if transport statistics could shed more light on this particular segment. Data collected from bus and coach operators ought to be somewhat more reliable than data from surveys among tourists or households (which currently, at least in the European Union (EU), do not even include same-day visits).²

² The EU Tourism Statistics Directive (Council Directive 95/57/EC on the collection of statistical information in the field of tourism (Official Journal of the European Communities L 291, of 6.1.1995)) only provides for the collection of tourism demand data on trips which involve one or more consecutive nights spent away from the usual place of residence. However, the European Commission is about to propose a revision of the legal act on tourism statistics. The new legal act may also cover same-day visits. Whether data on the (main) mode of transport used in same-day visits will also be collected is still an open question.

This chapter is about the need for and the potential and actual use of data on passenger transport by bus and coach. After identifying actual and potential users of statistical information on this market, it explains why these (particular) groups are important in statistics, gives examples of topics which require such data and outlines areas where more detailed statistical information would be needed. Given the data needs and areas of use identified above, the chapter concludes with a list of variables and their breakdown (“wish list”), which ideally should be covered by official statistics.

II. MAIN – ACTUAL AND POTENTIAL – USERS OF STATISTICS ON PASSENGER TRANSPORT BY BUS AND COACH AND THEIR DATA NEEDS

At present, there are only very few sufficiently detailed data available on passenger transport services by bus and coach. Little is known about the size of the various market segments and their potential, let alone the market players and their efficiency and productivity. Moreover, the data that are available from various UNECE Member States are often not comparable. Nevertheless, there is a need for and an interest in such data.

The following main user groups can be identified:

- Policy makers and public administrations at all levels (local, regional, national and supranational);
- Industry (bus and coach operators and their trade associations);
- Statistical authorities;
- Vehicle manufacturers and other partner industries from the travel and mobility chain;
- Research institutes, consultants and the like;
- General public.

A. Policymakers and public administrations at all levels (local, regional, national, supranational)

Passenger transport services by bus and coach contribute significantly to sustainable transport. They play a crucial role in meeting the demand for mobility at relatively little (internal and external) cost. Policymakers tend to support passenger transport services by bus and coach because –in both safety and environmental terms – buses and coaches are seen as performing fairly well by comparison with other modes of motorized transport.

Although these undeniable assets of passenger transport by bus and coach may be considered self-evident, statements like these are actually based on detailed and comparable **data on accidents involving buses and coaches** and on the **environmental performance of buses and coaches** (such as fuel consumption or CO₂ and pollutant emissions per passenger-km). Whereas this kind of information may be available for the whole sector, a distinction between the safety and environmental performance of urban and suburban (usually short-distance) bus transport on the one hand and interurban (relatively long-distance) transport by coach on the other hand would be helpful in order to be able to compare like with like (i.e. interurban coach transport with inter-city or high-speed rail, air transport and the interurban use of the passenger car; urban bus transport with the performance of urban light rail systems such as tram and metro lines, and the urban use of the passenger car).

More political and financial support for interurban passenger transport services by bus and coach may be justified on the grounds of its cost-effectiveness, especially when compared with rail transport. Rail is a highly subsidized mode of transport which is also considered to be relatively efficient, safe and environmentally-friendly, especially over longer distances. However, the

construction, operation and maintenance of a rail line between two cities can turn out to be a costly business, which is why, under certain circumstances, the interurban transport of passengers by bus and coach can be a more cost-effective alternative. In recent years and decades, some secondary rail links have been replaced by regular interurban bus and coach services in a number of countries, because rail transport had become too costly in comparison.

In most if not all countries, regular **urban and suburban** transport services by bus and coach are heavily subsidized so as to increase the price competitiveness and boost the overall attractiveness of this mode of transport, mostly for social and local policy considerations. Subsidies are often justified by public service obligations (PSOs) which ensure a service level which an operator looking only at commercial considerations would not provide. **Interurban** bus and coach services, however, benefit far less from public subsidies than do urban lines; international regular lines are said to operate purely along commercial lines, as is the case with occasional services. They are nevertheless a valuable alternative to other modes of transport, whether they be individual (passenger cars, motorcycles) or collective (trains, airplanes). In order to be able to support this market segment, policy makers need to be better informed about its main characteristics and developments.

When public money is involved, politicians and public administrations (and indeed the public in general, as taxpayers) are quite naturally interested in what the money is spent on, whether it is being spent effectively, whether the subsidy is justified and how **demand and supply** evolve over time. Even without public subsidies, these basic market characteristics should be available in order to give policymakers an idea of what is going on in the sector and to provide them with a full picture of the transport market. However, due to the lack of sufficiently detailed statistical data, interurban passenger transport by bus and coach often does not appear on the radar screens of policymakers.

Whenever policymakers want to regulate or to support a particular market segment, they need reliable and sufficiently detailed data on its main characteristics. The European Commission, for example, has recently adopted a proposal on the rights of passengers in bus and coach transport.³ Its aim is to provide a legal framework for the rights of persons with reduced mobility, liability issues and compensation and assistance in the event of interrupted travel (i.e. cancellations or excessive delays) and it builds, in part, on the provisions of the UNECE Convention on the Contract for the International Carriage of Passengers and Luggage by Road (CVR).⁴

The Commission proposal applies to all regular services. In certain cases, however, Member States may exempt urban, suburban and regional transport services. Data on the number of passengers affected, broken down by market segment, would provide valuable input into the discussions on the scope of the Regulation, including during the debates in the European Parliament and in the Council.

While the Regulation can be justified solely on the grounds that it ensures a level playing field in the internal market for passenger transport by bus and coach, some information on the **quality level** of the services provided, if available, would potentially provide additional reasons for such a legislative approach and would, in any event, be helpful in evaluating its effects.⁵

³ Proposal for a Regulation of the European Parliament and of the Council on the rights of passengers in bus and coach transport and amending Regulation (EC) No 2006/2004 on cooperation between national authorities responsible for the enforcement of consumer protection laws. COM(2008)817 final of 4.12.2008.

⁴ The CVR of 1 March 1973 has only been signed by two UNECE Member States and so far only been ratified by ten UNECE Member States, four of which are Member States of the EU.

⁵ The British Department for Transport <www.dft.gov.uk> regularly produces and publishes bus punctuality statistics and carries out bus passenger satisfaction surveys. However, the results appear not to distinguish between urban and suburban services on the one hand and interurban services on the other. Only few other countries provide similar data.

The **passenger profile** (in terms of age, income, gender, mobility status) would also provide valuable information to assess the effects of a particular policy on various population groups. It would also give some hints on issues such as the effect of an ageing population or the effect of rising incomes in Central and Eastern European countries on the demand for bus and coach services.

Existing legal acts regulating not just one specific market segment but the entire sector may have different repercussions in individual segments of the industry. A case in point would be the harmonisation of certain social legislation relating to road (passenger and goods) transport in the EU as laid down in Regulation (EC) No. 561/2006.⁶ The provisions for driving time, breaks and rest periods have different implications in the various segments of the road passenger transport market. While urban transport services are not affected at all,⁷ interurban transport services are generally covered by the Regulation. Whenever interurban passenger transport services by buses and coaches take longer than one day, drivers are subject to the rules on daily and, if necessary, weekly rest periods. To be able to assess the implications of the stipulated rules (or any modification thereof) on the business, it is necessary to know how many such services exist. A breakdown of the services offered by **duration of the journey** would be helpful.

More detailed data on the market segment of regular **international** services would be helpful in drawing up a European Agreement on regular bus and coach lines (similar to the Interbus Agreement,⁸ which covers only coach tourism). Data on the size of the market for international regular services would be needed in order to assess the economic and political need for such an agreement (before committing scarce administrative resources to it).

Many other legislative areas, such as market access, access to the profession and cabotage would benefit from better and more detailed information and data on the sector and its functioning at EU level. This would help all public and private stakeholders to better assess the potential impact of any relevant legislation.

Policymakers and public administrations are also interested in the **main traffic flows** (in order to know where people move and where there is / may be strong or weak demand respectively). This would include data on the **main origin-destination routes** of interurban trips⁹ and information on the level of activity and general **performance** (in terms of passengers handled, connections offered and buses/coaches stopping) **of the main coach terminals**.¹⁰ For local economies, it makes a difference if a passenger actually arrives at his place of final destination or whether he just changes bus or coach. A distinction should therefore be made between **passengers departing, arriving and in transit**.

⁶ Regulation (EC) No 561/2006 of the European Parliament and of the Council on the harmonisation of certain social legislation relating to road transport; (Official Journal of the European Union L 102 of 11.4.2006).

⁷ In fact, Article 3 (a) of Regulation (EC) No 561/2006 excludes the carriage by road by “vehicles used for the carriage of passengers on regular services where the route covered by the service in question does not exceed 50 kilometres” from the scope of the Regulation.

⁸ Agreement on the international occasional carriage of passengers by coach and bus (Interbus Agreement); (Official Journal of the European Communities L 321 of 26.11.2002).

⁹ “Main origin-destination routes” may be defined as those connections with more than 100 000 passengers per year (i.e. on average 274 passengers or 6 busloads per day). This is however just meant to be a preliminary recommendation to define the statistically relevant origin-destination routes.

¹⁰ “Main coach terminal” may be defined as a terminal which handles more than 500 000 passengers per year (i.e. on average 1 370 passengers per day) or, alternatively, as a terminal that is frequented by more than 100 buses a day. Yet another alternative would be to include all terminals which are manned (i.e. staff serving passengers). This as well would also be simply a preliminary recommendation.

General transport policy departments have an interest in comparing the performance of interurban passenger transport by buses and coaches with the performance of other modes, so as to get an idea of the **modal split**. Influencing the modal share of bus and coach transport may be a transport policy target which, for its implementation and monitoring, needs data on **transport demand** by mode and possibly also broken down **at regional and local level** (e.g. to assess the modal split on a given inter-city link).

The **structure** of the **fleet** and its **utilisation** is likewise of interest to policymakers in order to assess the sector's productivity, its environmental performance or the necessary time span until the fleet is renewed. Again, when it comes to the stock of buses and coaches or the number of first registrations, many countries do not provide detailed fleet statistics. Often, only one figure is given for the total of all types of vehicles used for the carriage of passengers and having more than eight seats in addition to the driver's seat. When it comes to the use of these vehicles, however, a clear distinction can be made: While buses are mainly used for urban and suburban road passenger transport services, coaches are predominantly used on interurban routes. An additional category for minibuses would avoid distortions in any cross-country comparison, given that such vehicles may be more common in some countries than in others (and given that, in some countries, spacious passenger cars may be registered as minibuses for tax reasons). A **distinction between buses, coaches and other vehicles** (i.e. above all minibuses) would thus help in getting a better picture of the evolution of the various market segments.

Such a distinction would also help in assessing the implications of legislative acts which do not affect all vehicles, for example the extension of the mandatory fitting of seat belts to commercial vehicles¹¹ and the extension of the mandatory **use** of seat belts to occupants of all motor vehicles in which they are fitted.¹² In both cases, the rules do not apply to vehicles which are designed for both urban use and standing passengers.

Information on the **market players** is essential for any market analysis. The provision of interurban transport services by buses and coaches is an important economic sector in its own right. It provides jobs and creates added value to the economy. To be able to support the industry, political decision makers will be interested in the relative and absolute size and structure of the industry (in terms of **number of enterprises, number of jobs, turnover and value added**) and any effects that political decisions might have on it. They will also be interested in the **productivity** and **efficiency** of the sector and its evolution over time. In all this, **own account** services should also be covered (as well as those for hire and reward) in order to appreciate the full economic relevance of each sector and segment.

Unfortunately, the **enterprise data** that are currently available (such as structural business statistics in the EU) do not distinguish sufficiently between the various segments of the road passenger transport market. Although the NACE Rev.2 and ISIC Rev.4 classifications distinguish between urban and suburban services on the one hand (NACE class 49.31, ISIC class 4921) and other passenger land transport (NACE class 49.39, ISIC class 4922) on the other hand, often it is only aggregate data at group level (Group NACE 49.3 "Other passenger land transport") which are being made available.

Many, if not most, bus and coach operators offer all kinds of passenger transport services and may not keep separate accounts for each of the services they offer. From a practical point of

¹¹ Directives 2005/39/EC, 2005/40/EC and 2005/41/EC of the European Parliament and of the Council amending Council Directives 74/408/EEC, 77/541/EEC and 76/115/EEC respectively; (Official Journal of the European Union L 255 of 30.9.2005).

¹² Council Directive (91/671/EEC) relating to the compulsory use of safety belts and child-restraint systems in vehicles, as amended by Directive 2003/20/EC of the European Parliament and of the Council; (Official Journal of the European Union L 115 of 9.5.2003).

view, it would probably be more realistic to look at enterprise data on bus and coach operators in general and make assumptions on the various market segments based on specific surveys.

B. Industry (bus and coach operators and their trade associations)

The lack of detailed data about the various segments of the road passenger transport market is a problem for the sector itself, as data would be useful to back up any position and thus promote the interests of the industry. It should be in the clear interest of bus and coach operators themselves to provide more information on their work to raise awareness and to promote their business. Without sufficient data, it is difficult for them to support their case and convince public administrations of the need to support them.¹³

Bus and coach operators themselves have an interest in comparable and timely statistics on the evolution of transport demand and supply, the environmental and safety record, the efficiency of the sector and its relative economic importance. In short, they are interested in all data mentioned above in which policymakers are also interested. They use this information not only for benchmarking purposes, but also to adapt their market behaviour to new developments and to improve their intrinsic strengths. Whereas there may be some reluctance to provide excessive amounts of data, higher market transparency in general fosters fair competition and thus helps to improve the efficiency and competitiveness of the sector.

C. Statistical authorities

National statistical offices, statistical departments in transport ministries and other competent statistical bodies mainly use data on passenger transport by bus and coach in the overall context of providing statistical information on the transport sector and its performance. Specific data on the performance of bus and coach operators may be used to calculate the modal split and to compare the performance of this sector to the performance of other sectors. Data on regular and occasional interurban passenger transport by bus and coach would be used for the provision of information on these market segments and for comparisons with other modes.

D. Vehicle manufacturers and other partner industries from the travel and mobility chain

Vehicle manufacturers are naturally interested in the use and in the economic and safety performance of the buses and coaches they produce, as well as in the size and structure of the fleet and its evolution over time. They have an intrinsic interest in the size and structure of the market for passenger transport by buses and coaches in general and, in the case of coach manufacturers, in the evolution of the market for interurban transport by coach in particular. The growth potential of the relevant market is a crucial input to any business model and will influence major business decisions. Indicators of the economic performance and efficiency of bus and coach operators in each segment may help them in formulating their business strategies. A set of simple and easy-to-monitor performance, economic, safety and environmental indicators would also be valuable to other partner industries, such as travel agencies and tour operators, when taking their own business decisions.

E. Research institutes, consultants and the like

Research institutes regularly use data on passenger transport by bus and coach to feed their transport and infrastructure models and to come up with innovative solutions for transport and

¹³ When the Dutch Statistical Office CBS stopped collecting data on transport by bus and coach in the Netherlands in 1998, KNV Busvervoer, a trade organization, started soon afterwards to gather data on its own from its members to get an idea of the main developments in the sector and inform politicians and the interested public about the importance of the sector.

traffic. Consultants are usually grateful for detailed statistical information which they can use for studies and reports and, generally, for a better understanding of the development of the business in the sector / market segment in question.

F. General public

The general public is also a potential user of detailed data on passenger transport by bus and coach. An informed citizen wants to know how best to get from A to B in terms of time, environmental impact and costs. Citizens may also be interested in the average **price** of a ticket (by km travelled) and its evolution over time.¹⁴ They may want to compare the cost of transport by bus and coach with the cost of other modes. As taxpayers, citizens have a right to know what their money is spent on and what the effect of public investment and subsidies in the highly subsidised public road passenger transport market is.

III. RESULTING (WISH) LIST OF VARIABLES AND BREAKDOWNS NEEDED FOR A PROPER MONITORING OF THE MARKET THAT DEALS WITH THE TRANSPORTATION OF PASSENGERS BY BUS AND COACH

Given the various needs and areas of use identified above, the following variables and breakdowns on passenger transport by bus and coach seem to be necessary in order to obtain a sufficiently detailed picture of the sector. The sequence in which the variables are listed is meant to give some indication of their importance and their relevance with regard to the remit of transport statistics.

A. Traffic and Transport Measurement

1. Number of passengers

- (a) by country and by region
- (b) by income group, age, gender, mobility status (passenger profile)
- (c) by time of the year (**to assess seasonal effects**)
- (d) by type of journey (urban and suburban vs. interurban; of which national or international)
- (e) by type of service (regular/special regular or occasional)
- (f) by type of transport (own account or for hire and reward)
- (g) by length of journey (in km; by distance class)
- (h) by average duration of journey (in hours/days)
- (i) (for regular services only) by main coach terminal (arriving / departing / in transit)
- (j) (for regular services only) by main O-D pair and any combination thereof

¹⁴ The COICOP/HICP Classification (i.e. the “Classification of Individual Consumption by Purpose adapted to the needs of the Harmonised Index of Consumer Prices”) which is used in the EU, collects prices for item 07.3.2 “Passenger transport by road”. This item includes local and long distance transport of individuals and groups of persons and luggage by bus, coach, taxi and hired car with driver. Unfortunately, no data seem to be available at a more detailed level. It is questionable whether a price index at such an aggregate level is very meaningful.

2. **Number of journeys offered**
Number of seats (incl. standing places) **offered** (*for regular services only*)
 - (a) by country and by region
 - (b) by nationality of operator
 - (c) by time of year (**to assess seasonal effects**)
 - (d) by type of journey (urban and suburban vs. interurban; of which national or international)
 - (e) by type of transport (own account or for hire and reward)
 - (f) by length of journey (in km; by distance class)
 - (g) by average duration of journey (in hours/days)
 - (h) by main O-D pair
and any combination thereof

3. **Derived variables: demand (passenger-kilometres, pkm), supply (seat-kilometres offered), traffic volume (vehicle-kilometres, vkm)**
 - (a) by country and by region
 - (b) by time of the year (**to assess seasonal effects**)
 - (c) by type of journey (urban and suburban vs. interurban; of which national or international)
 - (d) by type of service (regular/special regular or occasional)
 - (e) by type of transport (own account or for hire and reward)
 - (f) by type of vehicle (bus, coach, other (i.e. mainly minibus))
 - (g) by length of journey (in km; by distance class)
 - (h) by duration of journey (in hours/days)
 - (i) (for regular services) by main O-D pair
and any combination thereof

B. Transport equipment

1. **Stock of buses and coaches (at a given point in time e.g. on 31/12 each year)**
2. **Number of first registrations of buses & coaches (in a country/region)**
 - (a) by country and by region
 - (b) by type of vehicle (bus, coach, other (i.e. mainly minibus))
 - (c) by age of the vehicle (second-hand vehicles; new vehicles: age = 0)
 - (d) by Euro class (emission standard)
 - (e) by engine size
 - (f) by fuel type
 - (g) by capacity (seating/standing)
and any combination thereof

C. Infrastructure (for regular services only)

1. **Number of main bus and coach terminals**
 - (a) by country and by region
 - (b) by number of passengers handled (of which departing, arriving, in transit)
 - (c) by number of buses and coaches stopping
 - (d) by number of connections offered
 - (e) by number of journeys offered (to a given connection)
and any combination thereof

2. **Length of regular lines (in km)**
 - (a) by country and by region
3. **Number of regular lines**
 - (a) by country and by region
 - (b) by nationality of operator
 - (c) by number of bus and coach journeys offered on a given line
 - (d) by number of passengers being transported along a given line and any combination thereof

D. Accidents

1. **Number of injury accidents** involving buses and coaches
2. **Number of fatalities** in accidents involving buses and coaches – of which passengers
3. **Number of persons injured** in accidents involving buses and coaches – of which passengers
 - (a) by country and by region
 - (b) by type of vehicle (bus, coach, other (i.e. mainly minibus))
 - (c) by type of journey (urban and suburban vs. interurban)
(alternatively: by location (inside or outside built-up area))
 - (d) by type of service (regular/special regular or occasional)
 - (e) by causation of accident and any combination thereof
4. **Derived ratios**
 - (a) number of accidents per vkm;
 - (b) number of accidents per pkm;
 - (c) number of fatalities per vkm;
 - (d) number of fatalities per pkm
 - (e) number of injured persons per vkm;
 - (f) number of injured persons per pkm

E. Environment

1. **Fuel consumption** of buses and of coaches
 - (a) by country and by region
 - (b) by type of vehicle (bus, coach, other (i.e. mainly minibus))
 - (c) by type of journey (urban or interurban)
 - (d) by type of fuel and any combination thereof
2. **Emissions of main pollutants and greenhouse gases (GHGs)** from buses and coaches
 - (a) by country and by region
 - (b) by type of vehicle (bus, coach, other (i.e. mainly minibus))
 - (c) by type of journey (urban and suburban vs. interurban)
 - (d) by pollutant / GHG and any combination thereof

3. **Derived ratios**
 - (a) fuel consumption per vkm / per vehicle / per pkm
 - (b) emission of main pollutants and GHGs per vkm / per vehicle / per pkm

F. Enterprises

1. **Number of bus and coach operators (number of enterprises)**
 - (a) by country and by region
 - (b) by number of buses/coaches/other (i.e. mainly minibuses) in service
 - (c) by number of persons employed
 - (d) by turnover
 - (e) by type of service offered (regular/special regular, occasional)
 - (f) by market segment (urban and suburban services, interurban services) and any combination thereof
2. **Number of persons employed (of which bus/coach drivers)**
 - (a) by country and by region
 - (b) by enterprise size class (in terms of employment, turnover)
 - (c) by market segment (urban and suburban services, interurban services) and any combination thereof
3. **Turnover and value added**
 - (a) by country and by region
 - (b) by enterprise size class (in terms of employment, turnover)
 - (c) by market segment (urban and suburban services, interurban services) and any combination thereof

The following two areas (Service quality indicators and Financial indicators) appear to be more difficult to collect. While they are not covered in this handbook, they would provide valuable additional information on the market for passenger transport by bus and coach.

G. Service quality indicators (for regular services only):

1. **Duration of journey** (in h); derived: **average travel speed** (in km/h)
 - (a) by main O-D route
2. **Punctuality / Frequency of late arrivals** (per cent share of journeys offered)
Average duration of delays (in minutes) / **Excessive waiting time** (in minutes)
 - (a) by market segment (urban and suburban services, interurban services)
 - (b) by main O-D route
 - (c) by operator
3. **Number of cancellations** (per cent share of journeys offered)
 - (a) by country and by region
 - (b) by main O-D route
 - (c) by operator

H. Financial indicators

1. **Main cost categories (labour, fuel, vehicle and other capital costs)**
 - (a) by country
 - (b) by nationality of operator

- (c) by type of service offered (regular/special regular, occasional)
- (d) by market segment (urban and suburban services, interurban services) and any combination thereof

2. Prices

- (a) evolution of consumer prices for passenger transport by road
- (b) average price for a return ticket on main O-D route in Euro (for regular interurban services only)

CHAPTER 3

TRAFFIC AND TRANSPORT MEASUREMENT

I. INTRODUCTION

Public transport in general is a very important part of the transport sector. It influences economic, social and also safety and environmental issues. Most States, through their relevant authorities, pay a great deal of attention to its support and development. In order to manage all public transport domains, it is necessary to gather all possible reliable information as a basis for a range of decisions at all levels.

Because it is not possible to contain transport within State borders, it is important to establish a link between national and international statistics. Therefore, international organizations attach great importance to statistics in general, and to transport statistics in particular. Data collected within these organizations, which are drawn from Member States, respect time series continuity and are therefore mutually useful. For those statistical data which have not yet been harmonized, all interested parties are making an effort to gradually develop a common methodology to produce good quality statistical information.

This chapter proposes a method for bus and coach transport data collection and defines a list of indicators to be possibly collected and published at international level.

II. BREAKDOWNS

Deciding about breakdowns is one of the most important matters. Decisions should be reasonable as regards usefulness, possibility and feasibility, respondent burden and resources to process data. The basic distinction should be the breakdown of regular and occasional bus and coach transport. It may well be possible that some states have reliable information on regular bus and coach transport which operates according to a given timetable; and even if a regular data collection is not available, some estimates could be made. It is recommended to break down each of these two kinds of transport further at national and international level and then possibly by region. National transport can then be further subdivided into urban (suburban) and other national transport.

It should be noted that urban and suburban transport differ in some respects from other bus and coach transport, and therefore these statistics require a different approach. Most citizens in big cities using public urban (suburban) transport have various kinds of season ticket (annual, quarterly, monthly, students' season tickets, seniors' season tickets etc.) and also visitors can use various time tickets (24 hour, ...etc.). Therefore it must be kept in mind that statistics collected from those operators, (i.e. number of passengers carried and transport performance) providing urban (suburban) transport are based partly on tickets actually sold, partly on estimates of season tickets and partly on occasional surveys.

As far as international transport is concerned, it would naturally be a good thing to have international data collection at regional level too, but this might create problems and the issue is whether collection of regional data at international level at this stage is not too ambitious.

Fact box No.3.1

Czech Republic

The following is an example of data collection and breakdown used in the Czech Republic. It should be noted that occasional (non-scheduled transport) is not further broken down by international and national transport.

Bus transport					
Total	Occasional	Regular			
		International	Urban	National	
Public service obligation	Other				
1	2	3	4	5	6

Fact box No. 3.2

Bulgaria

Breakdown of data collection is:

- by type of carriage;
- by type of service.

III. TRAFFIC

Information on traffic usually expressed in vehicle kilometres is generally an important part of the transport area. These are not typical transport statistics, in that data are not usually collected from transport operators, although several different approaches are being used. One item of information which is relatively easy to obtain from bus and coach operators as a by-product of data collection on the abovementioned indicators is data on kilometres driven, possibly broken down into 'with passengers' and 'empty', and this gives some kind of picture of bus and coach traffic. At this point it is useful to refer to the "Handbook on statistics on road traffic" published by UNECE in June 2007 within WP.6, Task Force on Road Traffic.

As far as traffic in urban (suburban) areas is concerned, it should be noted first of all that, as in non-urban (and non-suburban) bus and coach transport, kilometres driven are easy to obtain and this number gives some information on vehicle-kilometres.

As to the other information on traffic in urban (and suburban) areas, it is also possible to obtain some methodological information from the Handbook mentioned above; however, it should also be noted here that the Handbook focuses more on outside urban area and that traffic counts in big cities usually apply a different methodology.

IV. TRANSPORT

It is obvious that the basic indicator for bus and coach transport, as well as other passenger transport, is the total volume of transport expressed in number of passengers carried and in passenger-kilometres. This number then can be further broken down using different approaches. It should be also noted at this stage that, as with the collection of data on other transport modes, the collection of bus and coach transport data is focused on bus and coach companies or buses and coaches registered in a reporting country.

The most natural basic division would be between bus transport within urban (suburban) area and bus and coach transport outside urban (suburban) area. It is of course possible that, for some countries, it would be very difficult to separate urban (suburban) and non-urban (non-suburban) transport, because some buses are also operated inside and outside urban (suburban) area. Nevertheless, in principle, urban (suburban) transport and non-urban (non-suburban) transport statistics require slightly different approaches. It seems that the best approach is to draw a line between urban, suburban and other bus and coach transport, because some countries may have difficulties in distinguishing between urban and suburban transport, which is often operated by the same companies. Another issue is whether or not trolleybuses should be included in “urban and suburban” transport.

Let us now consider bus transport outside urban (and suburban) area. The aim of collecting data on bus and coach transport should of course be to cover a maximum of bus and coach transport in a country. There are certainly several approaches on how to reach this goal.

One of the types of statistics which is relatively accurate and easy to obtain is information on offered capacity expressed in seat-kilometres, which is available from timetables. This information may also be used to estimate the number of passengers transported, taking into account average occupancy, possibly broken down by peak hours and other variables.

V. HOW TO COLLECT?

It is most likely that bus and coach companies will be chosen as the reporting units. Of course, it is also possible to have a bus or coach as a reporting unit (in this case a sample survey would probably have to be carried out), but a bus and coach company would certainly be more common and easier to survey. However, we must not forget that, ideally, all buses and coaches should be included in statistics, so surveys should also cover other companies – not necessarily bus and coach companies only – which use and operate some buses or coaches either for their own purposes, e.g. for transport of employees or travel agencies. To get information on the categories mentioned above, a vehicle register could be used to link the registered buses and coaches to companies which can then be included in a survey.

Fact Box No.3.3

Bulgaria

Enterprises in NACE rev.1.1 60.21 and 60.23 with a valid licence for national and/or international carriages of passengers by road were included in the national survey on buses and coaches.

Enterprises performing transport on their own account are not included.

VI. WHAT TO COLLECT?

It has already been mentioned that basic data for all passenger transport modes – and bus and coach transport is no exception – provide information on the number of passengers transported and passenger kilometres performed. Further indicators which are recommended to be collected could be the offered capacity expressed in number of seats available and the number of seat kilometres performed. Of course, more information might be required by state or regional authorities or policymakers, on who will monitor public services and possibly their quality, e.g. average distance travelled, number of journeys, frequencies broken down by region, days of a week, time of a year or day. This information will not necessarily be limited to regular transport. Some of these data could be processed from timetables, but these must be available and require a systematic approach.

Information on quality of services would also be very interesting and useful. It may include information on delays or cancelled services. It should be noted that, generally speaking, this kind of information is very difficult (a) to define and (b) to collect. However, quality indicators should still be kept in mind as being important, and perhaps sometimes in the future efforts could be made to progress in this field.

Fact Box No. 3.4

Bulgaria

The following are collected:

The number of passengers carried and the pkm performed, by type of carriage

The distance actually covered by buses and coaches (total and distance with passengers).

No information on quality of services is collected.

VII. HOW OFTEN?

Ideally, of course, we should like to get information on bus and coach transport as often as possible. However, it is a question of financial and personal resources, and the burden on respondents must also be considered very carefully. Surveying on a quarterly basis seems to be a reasonable compromise and it also corresponds to data collection methods for other transport modes. It is also possible to make some kind of simplification; if, for example, it is found that small companies are not very significant as a share of the total volume of transport, let us say just a few per cent, it is possible to survey big companies quarterly and smaller ones only annually. On an international level, however, annual data collection seems to be sufficient.

Fact box No. 3.5

Czech Republic

In the Czech Republic, companies with 10 buses or coaches and less report annually only and their share of total volume of transport is less than 5, the remaining companies, i.e. large ones, are required to send their data on a quarterly basis.

Volume of transport by number buses of the operators

Year: 2007

Breakdown	Number of operators		Number of passengers transported (thousand)		Passenger kilometres (thousand)		Vehicle kilometres (thousand)	
	Count	%	Count	%	Count	%	Count	%
1 bus	51	19.60%	502	0.10%	30 452	0.30%	1 730	0.40%
2 - 5 buses	82	31.50%	9 289	2.30%	300 957	3.10%	12 149	2.50%
6 - 9 buses	28	10.80%	6 244	1.50%	288 176	3.00%	11 522	2.40%
10 - 19 buses	20	7.70%	6 889	1.70%	693 515	7.10%	14 544	3.00%
20 - 49 buses	26	10.00%	30 734	7.50%	1 155 324	11.90%	51 112	10.60%
50 buses and more	51	19.60%	355 916	86.70%	7 258 086	74.60%	390 155	81.00%
non specified	2	0.80%	783	0.20%	4 786	0.00%	441	0.10%
Total	260	100.00%	410 357	100.00%	9 731 296	100.00%	481 653	100.00%

Fact box No. 3.6

Bulgaria

In Bulgaria, companies operating with less than 10 buses are sampled once in a year. All enterprises with more than 10 buses as well as all the enterprises in public sector are fully covered by the survey (no sampling for big companies and the public sector).

Replies are collected on a quarterly basis, including the activity of the enterprise for the observed period.

VIII. WHERE? (IN TERMS OF TERRITORY)

It is quite common to make a distinction in terms of territory between national and international transport. Now the question is whether or not to differentiate further. If other types of transport statistics at European level are followed, it would be most natural to collect data on a regional or subregional level (NUTS 2 or NUTS 3 level)¹⁵ or at least on a national basis. Regional statistics are very important, but their collection may entail some methodology problems and an extra burden for respondents, especially with regard to transport flows between regions.

Fact box No. 3.7

Czech Republic

As far as bus statistics in terms of territory are concerned, data on bus transport in the Czech Republic are collected at international level by countries and at the national level by NUTS 3.

However, NUTS 3 data collection relates to data collection within regions; transport flows are not surveyed.

Fact box No. 3.8

Bulgaria

As regards bus statistics in terms of territory, in Bulgaria data on bus transport are collected at international and at national level by NUTS 0.

Data collection within regions or transport flows are not surveyed.

IX. PROPOSED SUMMARY OVERVIEW ON BUS AND COACH TRAFFIC AND TRANSPORT

On the basis of the above-mentioned methodology, it is proposed to publish four summary overviews concerning the number of passengers transported, passenger kilometres and seat kilometres in bus and coach transport, and vehicle kilometres in bus and coach traffic, using the following breakdown:

Country	Year	Total bus and coach transport	Regular			Occasional	
			National		International	National	International
			Urban transport	Interurban transport			

Note: Where urban transport and suburban transport are difficult to separate, suburban transport could be included in the figure for “urban transport”.

¹⁵ REGULATION (EC) No. 1059/2003 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 May 2003 on the establishment of a common classification of territorial units for statistics (NUTS).

CHAPTER 4

TRANSPORT EQUIPMENT

I. INTRODUCTION

Compared to the availability of statistics on road transport of goods, there are relatively few statistical data available for passenger transport by bus or coach in the European Union. Some member States publish aggregated figures covering buses and coaches without distinguishing between regular transport (e.g. urban and interurban traffic) and occasional transport. Some countries have accurate statistics on urban bus and coach transport activities, mostly due to contractual rules for carrying out public service obligations.

Although the use of buses and coaches is important for policy makers at all levels, Ministries and several regional and local authorities, it is also necessary to know the fleet of buses and coaches and what kind of bus or coach is used for a particular kind of transport. In order to make calculations, compare information or break down data according to vehicle specifications, it is useful to have some specific and technical information about buses and coaches.

Fact box 4.1

History

A bus is a large road vehicle designed to carry numerous passengers in addition to the driver and sometimes a conductor. The name is a neologism of the Latin *omnibus*, which means “Transport for everyone”.

One of the precursors of the omnibus was the horse-drawn boat, historically a boat operating on a canal, pulled by a horse walking on a special path alongside the canal. This boat was used, for both public transport and freight, from ca. 1630 to 1850 and was invented in the Netherlands.

Besides transport by the horse-drawn boat, during the 19th century there was also an animal-powered streetcar: known as a horsecar. The first streetcar lines used horsecars and were an improvement on transportation by omnibus. One of their advantages was the low rolling resistance of metal wheels on iron or steel rails (typically grooved from 1852 on) allowing the animal – one or two horses depending on the size of the car – to haul a larger load for a given effort than the omnibus. However, in this case a railway (system) was needed.

The omnibus was used until the beginning of the 20th century when it was replaced by a motor-driven vehicle. When motorized transport proved successful after 1905, a motorized omnibus was for a time sometimes referred to as an *autobus*. The term **coach** appears in the formal names of many such firms in the United States, although most people still call them **bus lines**.

II. VEHICLE REGISTRATION

In most countries, data about the fleet and stock of buses, coaches and other motor vehicles will be available from the national vehicle register. With that data-source, which is owned by the government or a private organization, it will be possible to split up data according to several vehicle specifications. The central or national vehicle register will normally be an administrative register used for data about owners, and will contain technical information by number plate and by vehicle.

Fact box 4.2 – Dutch National Vehicle Register

In the Netherlands, the RDW, “Rijksdienst voor het wegverkeer”, is the organization which owns a database with fleet information and other technical information relating to all registered motor vehicles.

(As at 1 January 2008, the vehicle stock of the Netherlands was 10.067.576 motor vehicles).

III. GENERAL INFORMATION ABOUT FLEET STATISTICS

Participating countries have complete statistical data on their fleet of motor vehicles, based on primary or secondary sources for a common base year. For some variables, more or less information at a certain level is available.

To make use of all general and technical information of the fleet at any time, it would be very helpful to have access to the specific Vehicle Register, although this would naturally be tied to certain conditions. In some countries, tables and overviews of the fleet are presented periodically and automatically.

For this purpose, the information about buses and coaches is categorised as follows:

- (a) stock of buses and coaches
- (b) technical components of buses and coaches
- (c) bus and coach use per market segment
- (d) owner information

A. Stock of buses and coaches

Statistics on the vehicle stock usually cover all passenger road motor vehicles designed to seat more than nine persons (including the driver). At a more detailed level, four basic vehicle types may be distinguished: bus, minibus, trolley-bus and coach.

Fact box 4.3

Buses and coaches

For vehicles having a capacity exceeding 23 passengers in addition to the driver, there are three classes of vehicles:

- Class I:** vehicles constructed with areas for standing passengers, to allow frequent passenger movement;
- Class II:** vehicles constructed principally for the carriage of seated passengers, and designed to allow the carriage of standing passengers in the gangway and/or in an area which does not exceed the space provided for two double seats;
- Class III:** vehicles constructed exclusively for the carriage of seated passengers.

For vehicles having a capacity not exceeding 23 passengers in addition to the driver, there are two classes of vehicles:

- Class A:** vehicles designed to carry standing passengers; a vehicle of this Class has seats and shall have provision for standing passengers;
- Class B:** vehicles not designed to carry standing passengers: a vehicle of this Class has no provision for standing passengers.

Class I and **Class II** vehicles may be called “Buses”

Class III vehicles may be called “Coaches”

Class A and **Class B** vehicles may be called “Minibuses” or “Other”.

Source: Annex I of Directive 2001/85/EC.

The stock of buses and coaches will be measured at a single point in time, for example on 31 December each year.

Part A: Variables Vehicle Register

Variable:		Explanation:	
1.	Registration number	Unique number plate bus/coach	
2.	Vehicle Category - Type	M	Motor vehicles for the carriage of passengers
		N	Motor vehicles for the carriage of goods
		O	Trailers (including semi-trailers)

For example:

Table 1
Motor Coaches, Buses and Trolleybuses at 31 December (see Annex III, Page ...)

Fact box 4.4

Vehicle Category and Vehicle Type

Vehicle categories are defined according to the following classification:

Category M: motor vehicles with at least four wheels designed and constructed for the carriage of passengers.

Category M₁: vehicles designed and constructed for the carriage of passengers and comprising no more than eight seats in addition to the driver's seat.

Category M₂: vehicles designed and constructed for the carriage of passengers, comprising more than eight seats in addition to the driver's seat, and having a maximum mass not exceeding 5 tonnes.

Category M₃: vehicles designed and constructed for the carriage of passengers, comprising more than eight seats in addition to the driver's seat, and having a maximum mass exceeding 5 tonnes.

Category N: motor vehicles with at least four wheels designed and constructed for the carriage of goods.

Depending on a maximum mass divided in N₁, N₂ and N₃

Category O: trailers (including semi-trailers)

Depending on a maximum mass divided in O₁, O₂, O₃ and O₄.

Off-road vehicles (symbol G).

Source: Annex II to Directive 2007/46/EC.

B. Technical elements of buses and coaches

In the data register of all motor vehicles, technical information about a vehicle is related to a registration number or licence plate. It will be possible to prepare cross-referenced tables.

Part B: Variables Vehicle Register

Variable:	Explanation:	
1	Registration number	Unique number plate bus/coach
2	Year of construction	This variable can be used for two purposes: <ul style="list-style-type: none">• new bus – coach or second-hand• age of the vehicle
3	Date of first registration	Not necessarily the same as year of construction
4	Cylinder capacity	The cylinder capacity of the engine
5	Motor energy	Type of motor energy used by the vehicle
6	Capacity	<ul style="list-style-type: none">• Number of seats• Number of standing places
7	Engine power	Engine power expressed in horsepower or KW
8	Maximum laden vehicle weight	Total vehicle weight and its load
9	Unladen vehicle weight	Weight of the vehicle excluding its load
10	Length of buses/coaches	The length of buses and coaches is normally between 12,70 and 18,75 metres
11	Euro Emission code	Acceptable limits for exhaust emissions of new vehicles

For example:

Table 2

Motor Coaches, Buses and Trolleybuses at 31 December by Fuel Type (see Annex III, Page ...)

Table 3

Motor Coaches, Buses and Trolleybuses at 31 December by Age Group (see Annex III, Page ...)

C. Use per market segment

Transportation by bus or coach is possible in several different market segments:

1. Regular Transport:
 - (a) National Transport:
 - (i) Urban transport
 - (ii) Interurban Transport
 - (b) International Transport
2. Occasional Transport (or irregular transport):
 - (a) National Transport
 - (b) International Transport

The main question is whether, based on the motor vehicle registration, it is possible to categorise buses and coaches as one specific market segment?

Analyzing the technical vehicle information led to the following conclusions:

1. Buses or coaches can be used in all market segments, not specifically for one of the above-mentioned.
2. The motor vehicle register does not have a special 'variable' that determines a market segment for a particular bus or coach.
3. There is no difference in technical performance between buses or coaches used for regular or occasional transport, and those used for national or international transport.
4. Using buses and coaches for a particular kind of transport is determined by the companies and is not standard.

5. It may be possible to combine the length and weight of a bus or coach with a number of doors or capacity allocate a bus or coach to a certain market segment; but there are no rules and no legislation in this field.
6. In some countries it is possible to separate minibuses from buses and coaches.

D. Owner information

Information about ownership of motor vehicles (buses and coaches) is available in the (national) vehicle register. The ‘registration number’ is the key to other variables.

Part C: Variables Vehicle Register

	Variable:	Explanation:
1.	Registration number	Unique number plate bus/coach
13.	Chamber of commerce	Company number
14.	Type of ownership	Property of the motor vehicle: <ul style="list-style-type: none"> • commercial vehicle • private vehicle
15.	Owner vehicle	The owner of the vehicle is not always the driver of that vehicle: <ul style="list-style-type: none"> • name owner • address owner • postcode and place of residence

For example:

Fact Box 4.6

Motor coaches and buses in the Netherlands by province, as of 1st January

	2002	2004	2006	2008
Netherlands, total	11 091	10 995	11 344	11 326
by province				
Groningen	127	155	145	148
Friesland	1 213	1 019	1 143	919
Drenthe	167	144	132	161
Overijssel	503	517	585	580
Flevoland	49	50	55	48
Gelderland	825	839	1 031	943
Utrecht	477	477	921	1 208
Noord-Holland	3 799	3 596	2 692	2 509
Zuid-Holland	1 464	1 690	2 111	2 374
Zeeland	245	201	187	194
Noord-Brabant	1 625	1 388	1 309	1 249
Limburg	597	919	1 033	993

Source: RDW/CBS

Other proposals:

Number of buses and coaches by type (bus, coach, mini-buses)

Number of buses and coaches by class of maximum laden vehicle weight

Number of buses and coaches by euro emission code

Number of buses and coaches by capacity (seats and standing places)

Number of buses and coaches first registered and/or second hand

Fact box 4.7

Bulgaria

The following breakdown is available:

vehicle stock (total and active vehicles) – by ownership (own, leased and total).

vehicle stock, distributed by:

= type of carriage (urban, interurban) and number of seats;

= distance actually run (distributed in five groups) and number of seats;

= distance actually run (distributed in five groups) and fuel used.

CHAPTER 5

TRANSPORT INFRASTRUCTURE

Transport infrastructure consists of the fixed installations necessary for transport. Infrastructure could be regarded as the structural elements of an economy which enable the production of goods and services without themselves directly being part of the production process. In the past, infrastructure was typically supplied, owned and managed by local or central governments, although infrastructure may be developed and operated by private-sector or government enterprises.

Generally, it is possible to distinguish between network systems (for example, roads), point systems (for example, bus stations) and point-network systems (for example, bus lanes).

I. NETWORK

Buses and coaches use roads. This means that all information which is available on roads is also of interest in the specific case of transport by buses and coaches.

A. General information on road network

- Physical:
 - length of roads (km);
 - density of road network (km/km²)
- Monetary:
 - investment expenditure on roads (new construction, extension, reconstruction and renewal)
 - maintenance expenditure on roads
 - value of road network (gross and/or net)

both by road type: e.g. motorways, highways, regional roads, etc.

The most common and usually available indicator is the length of roads, often also available by road type.

Fact box 5.1 Length of Road Network (1 000 km in Germany as of 1 st January)						
Specification	1993	2000	2005	2006	2007	2008
Roads (other than local)	226.8	230.7	231.5	231.5	231.4	231.2
of which						
Autobahn system (motorways)	11.0	11.5	12.2	12.4	12.5	12.6
Federal roads	42.2	41.3	41.0	41.0	40.7	40.4
Länder roads	88.0	86.8	86.7	86.6	86.6	86.6
District roads	85.7	91.1	91.6	91.6	91.5	91.6
Local roads	413.0	na	na	na	na	na

Sources: Federal Ministry of Transport, Building and Urban Affairs, Federal Statistical Office of Germany.

B. Bus/coach specific information on road network

Of special interest in the context of passenger bus transport is the length (in km) of

- bus lanes or bus roads

as one part of the physical road network.

II. BUS/COACH SPECIFIC POINT-NETWORK SYSTEM

For regular services in some countries figures are available on:

- number of regular lines
- length of regular lines

Fact box 5.2 Length and number of lines in Germany: Short distance regular services as of 31 December 2004	
Length of regular lines by German Länder Number of lines	Bus lines
Length of lines	
Germany (km)	704 774
Of which:	
Baden-Württemberg	49 235
Bayern	153 630
Berlin	1 729
Brandenburg	46 581
Bremen	930
Hamburg	2 723
Hessen	136 953
Mecklenburg-Vorpommern	26 881
Niedersachsen	59 728
Nordrhein-Westfalen	82 071
Rheinland-Pfalz	24 326
Saarland	7 867
Sachsen	37 420
Sachsen-Anhalt	25 423
Schleswig-Holstein	25 680
Thüringen	23 597
Number of lines	22 456

Source: Federal Statistical Office of Germany.

Where necessary, it may be of some interest to separate the total length of lines into the length of urban lines and the length of interurban lines. It is also possible to distinguish between national and international lines.

III. POINT INFRASTRUCTURE

For regular services there appears to be a demand in some countries for figures on the number of

- stations,
- central terminals, and
- multimodal terminals (i.e. rail-bus/coach interchange, park and ride) .

There may be some interest, from an individual point of view (passenger, driver), but not from a statistical point of view, in information on the equipment of a station or terminal (e.g. passenger information system, ticketing system, video control, waiting environment, seating places, shops, toilets) or – for occasional services – the number of parking places/parking spaces in the target area and their equipment.

CHAPTER 6

ACCIDENTS

Bus and coach transport is in principle designed to transport significant volumes of people whether it involves urban buses operating within urban or suburban areas, or regional buses and coaches which link small and large cities and urban and rural areas within a particular region, or long-distance buses and coaches interconnecting regions, major built-up areas and also ensuring international transport. As average bus and coach capacity is approximately 40 – 50 people, there is therefore a potential danger of accidents that cause injury with serious consequences. Apart from the most tragic consequence, which is of course the loss of a human life, economic losses including health and hospital care also have to be considered.

Generally it could be stated that the number of bus and coach injury accidents as a proportion of the total number of injury accidents is not very high (around 1 per cent in the Czech Republic). However, as mentioned above, the number of fatalities and economic losses is higher in percentage terms. Bus and coach accidents may be (somewhat) similar to aviation accidents where, in a single accident, consequences are extensive.

It is obvious that the safety of this kind of public transport is of major concern for all involved. Good statistics provide a basis for possible measures on either national or international level.

For an evaluation and analysis of bus and coach injury accident statistics, the following indicators in particular are recommended. It should be noted at this point that data collected at international level usually relate to accidents resulting in injury or death. Most of the following basic indicators are available in the European countries:

- Number of injury accidents involving a bus or coach, divided into the number of accidents caused by bus or coach drivers and others, by urban bus and non – urban bus or coach, broken down by country of registration of a bus or coach;
- Consequences of these injury accidents, i.e. number of fatalities, injuries broken down by age class, driver, passengers, sex, and nationality;
- Date of injury accidents: hour, day of the week, month;
- Location of injury accident, i.e. inside urban area/outside urban area, broken down by motorways, main roads, other roads;
- Type of injury accident (single vehicle accident – no obstacle, obstacle, collision with another vehicle in motion, parked vehicle, collision with pedestrian, collision with domestic or wild animal, collision with train or tram);
- Type of collision, i.e. frontal collision, side-by-side collision, rear collision, lateral collision;
- Type of fixed obstacle, e.g. tree, wall, fence, rail gate;
- Weather conditions, i.e. fog or mist, rain, snow, sleet, hail, strong wind;
- Visibility, i.e. daylight or twilight, darkness;
- Cause of injury accident, i.e. speed, overtaking;
- Description of injury accident location, i.e. not at a junction, junction, crossroad, roundabout, T or Y junction;
- Seat belt use by driver (not obligatory for passengers);
- Alcohol or drugs (driver);

- Number of passengers carried;
- Bus or coach age;
- Age and sex of bus or coach driver;
- Possession of driving licence – how long (driver).

Some other derived indicators could be useful, such as:

- Number of fatalities/number of passengers transported – annually;
- Number of fatalities/ number of vehicle-kilometres by buses and coaches;
- Number of fatalities/number of inhabitants;
- Number of injury accidents/ number of vehicle-kilometres by buses and coaches;
- Number of injury accidents/number of buses and coaches.

Additional information on bus or coach driving licence requirements, or other information could be useful to have a better picture of overall statistics, i.e.

- requirements to obtain a driving licence for a bus or coach (age limit, health conditions, experience);
- number of bus drivers (broken down by age class, time of possession of driving licence, sex); and
- for countries where a point system exists, more detailed information could be included.

Fact box 6.1

Czech Republic

In 2007, there were 375 million passengers (9 518 million pkm) transported by regional and long-distance buses and coaches and 835 million passengers (5 545 million pkm) transported by urban buses. As far as bus and coach accidents are concerned, during the last six years bus and coach accidents as a proportion of the total number of road accidents in the Czech Republic have been around 1 per cent; the proportion of fatalities is somewhat higher – approximately 1.2 per cent. The worst situation was in 2003 when 19 people died in a single bus accident. The following tables show accident trends since 2002. The number of accidents relates to all accidents investigated by the police regardless of their consequences (fatalities or injuries).

Accidents with bus driver responsibility (number of killed and injured includes all road users)

Year	Number of accidents	Number of killed (30 days)	Number of injured	Share on total number of accidents (%)	Share on total number of killed
2002	1792	18	403	0.9	1.3
2003	1772	42	427	0.9	2.9
2004	1870	20	363	1.0	1.4
2005	2129	12	342	1.1	0.9
2006	2283	16	374	1.2	1.5
2007	2073	9	293	1.1	0.8

Source: Police Directorate of the Czech Republic

Consequences of accidents (regardless of responsibility) in buses and coaches						
Consequences	2007	2006	2005	2004	2003	2002
Number of killed	1	10	0	17	29	6
Number of bus drivers killed	0	3	0	5	6	2
Number of injured	557	510	547	500	565	510
Number of bus drivers injured	22	26	18	30	31	26

Source: Police Directorate of the Czech Republic

I. UNECE data collection

Data on road traffic accidents are currently collected by UNECE and published annually in “Statistics of Road Traffic Accidents in Europe and North America”. As far as bus and coach transport is concerned, the following are collected in the chapter “Persons killed or injured in road traffic accidents by category of user and age group”:

Killed drivers and passengers of motor coaches, buses, trolleybuses and tramcars –

Total and of which drivers

Injured drivers and passengers of motor coaches, buses, trolleybuses and tramcars –

Total and of which drivers

II. European Union Data collection

In the European Union, data on road accidents are compiled according to the Council Decision of 30 November 1993 on the creation of a Community database on road accidents (93/704/EC) available at

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31993D0704:EN:HTML>

Member States gather statistics on road accidents that occur within their territories and send these data to the European Commission, which creates and administers the CARE – European accident database.

CARE

CARE (Community Road Accident Database) currently contains highly disaggregated data on road traffic accidents since 1991 in 14 of the EU Member States (i.e. excluding Germany). This database contains **data on individual accidents** as collected by Member States in police databases. The data for Great Britain and Northern Ireland are managed separately. CARE is currently being enlarged to cover all 27 EU Member States, plus Switzerland, Norway and Iceland.

Besides these data, so-called "quick indicators data" are provided by Member States on a monthly basis. These include main accident indicators (number of accidents, number of killed and injured in traffic accidents every month).

Some selected aggregated data, as well as quick indicators data and a general description of CARE, are available on the public CARE website at http://ec.europa.eu/transport/road_safety/observatory/statistics/care_en.htm.

The CARE database deals only with the circumstances of accidents, not with their causes. To interpret the data it is also necessary to take into consideration some limits on data use due to differences in the definitions in various countries. Some of these differences and specifications cannot be completely removed when data are transferred from national databases into the CARE database. These relate, for instance, to the numbers of people killed, seriously injured and slightly injured, traffic participant types and vehicle types.

The CARE database is created from individual national accident databases by means of conversion rules (logical terms linking the variables and values of national and CARE databases). Thus, CARE is a set of records of all police-registered road traffic accidents (with injury) from Member States in a common structure. Naturally, not all items of the common structure contain entries for all countries. Some basic facts about the CARE database are also included:

Basic data classes are:

Accident data - collision type (frontal, rear, lateral, side-by-side, with pedestrian, animal, chain collision, single vehicle with parking vehicle, single vehicle with obstacle, single vehicle without obstacle), accident severity (with fatality, serious injury, slight injury, with injury), weather (dry, fog, rain, snow, sleet, wind), road type (inside urban area, outside urban area, motorway), junction (crossroads, four-way junction, three-way junction, roundabout, with railway, other and unknown), lighting (daylight, twilight, darkness with street lights, darkness without street lights); personal data (age, sex, driver, front passenger, rear passenger, pedestrian, injury severity - fatality, serious injury, slight injury, without injury);

Time data (year, month, day, hour);

Vehicle data (vehicle type - passenger car, **bus or coach**, heavy goods vehicle, light goods vehicle, road tractor, agricultural tractor, motorcycle, moped, bicycle); and

Country data (state code).

Basic output indicators are:

Number of persons killed (within 30 days, as well as according to national definition);

Number of injured total, serious and slightly, number not injured;

Number of accidents resulting in injury; and

Number of participating vehicles.

Defined variables CARE + 1:

1. Month
2. Date of month
3. Day of week
4. Hour
5. Age of participant
6. Age of driver
7. Age of passenger
8. Age of pedestrian
9. Sex of participant
10. Sex of driver
11. Sex of passenger
12. Sex of pedestrian
13. Injury severity of participant (fatality, serious injury, slight injury, injury, without injury, unknown)
14. Injury severity of driver (fatality, serious injury, slight injury, injury, without injury, unknown)
15. Injury severity of passenger (fatality, serious injury, slight injury, injury, without injury, unknown)
16. Injury severity of pedestrian
17. Type of participant (driver, passenger, pedestrian, unknown)
18. Type of passenger (front, rear, unknown)
19. Type of vehicle (agricultural tractor, bus, passenger car, taxi, moped, motorcycle, goods vehicle more than 3.5 t, goods vehicle less than 3.5 t, other motor vehicle, other non-motor vehicle, bicycle, road tractor, road tractor with semi-trailer, other, unknown)
20. Collision type (with animal, chain / rear, frontal, lateral, with parking vehicle, with pedestrian, single vehicle without obstacle / with obstacle, other, unknown)
21. Accident severity (with fatality, with injury, with serious injury, with slight injury)
22. Lighting (darkness without lighting, darkness without street lights, darkness with street lights lit, darkness with street lights unlit, daylight, twilight, unknown)
23. Natural lighting (darkness, daylight, twilight, unknown)
24. Street lights (without street lights, street lights lit, street lights unlit, unknown)
25. Weather (dry, fog / mist, rain, snow, sleet, strong wind, other, unknown)
26. Junction (yes, no, unknown)
27. Junction type (four-arms, level crossing, without crossing, roundabout, three-arms type T / Y, other junction, unknown)
28. Area type (inside urban area, outside urban area, unknown)
29. Motorway (yes, no, unknown)

Defined variables CARE + 2:

1. Registration country (home, other EEA [*European Economic Area = EU 27 + Switzerland, Norway, Iceland*], other / unknown)
2. Nationality (home, foreigner, unknown)
3. Vehicle age (0, 1-2, 3-5, 6-10, 11-15, >15, unknown)
4. Driving licence age (0, 1, 2, 3, 4, 5, >5, unknown)
5. Road surface condition (snow / ice, dry, slippery, wet, other / unknown)
6. Region / province (level NUTS 1, NUTS 2)
7. Speed limit (<30, 30-50, 51-80, 81-100, 110, 120, unknown)
8. Alcohol test (tested, not tested, refused, unknown)
9. Psychophysical circumstances (drugs / medicine / fatigue, sudden illness, other / unknown)
10. Alcohol level (BAC) (<0.5 g / l, >0.5 g / l, <0.8 g / l, >0.8 g / l, >1.5 g / l, unknown)

11. Movement of pedestrian (crossing, walking, unknown)
12. Carriageway type (dual, single - one way street, single - two way street, unknown)
13. Number of lanes (1, 2, 3, >3, unknown)
14. Manoeuvre of vehicle (straight ahead, reversing, stopping, overtaking, changing lane, turning left, turning right, U-turning, other, unknown)
15. Junction control (controlled, uncontrolled / unknown)
16. Safety equipment (seat belt, crash helmet, unknown)
17. Road markings (no, yes, unknown)
18. Hit and run accident (no, yes, unknown)
19. Accident type (see typological catalogue)

Some of the information concerning bus or coach accidents could probably be extracted from the CARE database for EU members. This needs to be further investigated. It would cover the following indicators (with further breakdowns):

Summary of main indicators concerning bus or coach accidents available from CARE database

Number of accidents involving bus or coach

Number of vehicles involved in these accidents

Number of fatalities total, in buses (and other vehicles involved), i.e. drivers and passengers and pedestrians

III. Proposed summary overviews on bus and coach safety

On the basis of the above-mentioned methodology, it is proposed to publish two summary overviews concerning injury accidents involving bus or coach injury accidents with bus or coach driver responsibility (number of killed and injured includes all road users) in the following table.

Country	Year	Number of injury accidents	Casualties	Number of casualties in injury accidents with buses or coaches involved			
				killed	total injured	seriously injured	slightly injured
			Total				
			Bus drivers				
			Bus passengers				
			Other vehicle drivers				
			Other vehicle passengers				
			Pedestrians				

CHAPTER 7

ENVIRONMENT

I. INTRODUCTION

There is a pressing need for methodologies to estimate fuel consumption and the emission of pollutants and of greenhouse gases (GHG) at national and international level. This chapter presents a straightforward method to estimate the absolute minimum indicators.

The environmental indicators concern fuel consumption and emissions of main pollutants and greenhouse gases (GHG), especially carbon dioxide emissions.¹⁶ In comparative studies the indicators are expressed in terms of units per passenger km or units per vehicle km.¹⁷ Carbon dioxide is a greenhouse gas that contributes to global warming. The transportation sector is one of the main contributors to man-made CO₂ emission.

Some users need the total fuel consumption and the total emission of the bus and coach sector (*see* fact box 7.2 for totals). The "building blocks" for the environmental unit indicators are traffic and transport volumes related to fuel consumption and emissions.

II. FUEL CONSUMPTION

Data on the fuel consumption of buses and coaches in general and for interurban (long distance) transport in particular are not easy to find. Financial statistics give the expenditure related to fuel, mostly diesel. These can be used to estimate the total volume of fuel. Detailed information per market segment is usually missing.

Fuel consumption can be expressed in total million litres or in energy content (teraJoules (10¹² joules) or petaJoules (10¹⁵ joules)). Derived indicators are: fuel consumption per vehicle kilometre or per passenger kilometre.

III. EMISSIONS

Developments in terms of reduction of fuel consumption and emissions are expressed in units per kilometre by fuel type and emission class of the vehicle. There is a strong correlation between emission class (e.g. EURO-class) and the age of the vehicle. In most countries the vehicle

¹⁶ Generally spoken there are two different groups of emissions:

Emissions of pollutants (which are harmful for the environment and our health) such as carbon monoxide CO, hydrocarbons HC, methane CH₄ (which is also a GHG) and oxides of nitrogen NO_x and even smoke (means particles suspended in the exhaust stream of a diesel engine which absorb, reflect, or refract light).

Emissions of greenhouse gases (GHG) (which are harmless for our health, but contribute to the global warming effects and increase the risk of climate change threats) such as carbon dioxide CO₂, methane CH₄, nitrous oxide N₂O, etc.

¹⁷ More or less all vehicles in service comply either to UNECE Regulations Nos. 83 (Emissions of pollutants) and 101 (Fuel consumption and CO₂ emissions) for passenger cars and UNECE Regulations Nos. 49 (Emissions of pollutants) and 24 (Smoke) for heavy-duty vehicles, buses and coaches. However, according to the test requirements mentioned in the above-mentioned Regulations the emissions from passenger car engines are measured and expressed in g/km (the fuel consumption in l/100km) and the emissions of heavy-duty vehicles, buses and coaches in g/kWh). The data regarding the emissions can be found for each type of vehicle engine family in the type approval documentation available at the type approval authority of each Contracting Party applying the Regulation concerned. The measurement procedure for the fuel consumption and CO₂ emissions from engines of heavy-duty vehicles, buses and coaches is not yet included in Regulation No. 49.

stock information contains the age of the vehicle. The assumption that age is a good proxy for the EURO-class makes compiling statistical data easier.

Fact box 7.1. Contribution of UNECE secretariat

In order to calculate an annual estimation of the average of emissions from road vehicles registered in a specific country and the energy efficiency, the following information is necessary:

- (a) composition of the vehicle fleet, including the type of vehicle engines (petrol, diesel, compressed natural gas, liquid petroleum gas, hydrogen and fuel cells, electric) as well as the level of engine emissions (EURO level);
- (b) mileage per vehicle and year (eventually the total consumption by fuel type);
- (c) number of passengers.

In most countries, the vehicle registration authority collects data on (a), the periodical technical inspection agencies on (b) and the public/private transport sectors on (c).

This will only provide a rough indication of vehicle emissions.

In the case of a more detailed calculation of emissions, additional data should be available on the Well-to-Wheel (WTW) analysis:

- (a) the Well-to-Tank (WTT) analysis: data by the fuel industry on the production of fuel (petrol, diesel, bio fuels, compressed natural gas, liquid petroleum gas, hydrogen) or the generation of electricity (renewable energies, nuclear power) in case of electric or hybrid vehicles;
- (b) the Tank-to-Wheel (TTW) analysis: data by the vehicle manufacturer on the normal use of the vehicle (engine emissions, power train efficiency, stop-and-go function, tyre rolling resistance, etc.); taking into account the real use of the vehicle by the drivers/consumers in real-life configurations.

In order to complete the WTW analysis, experts even request to take into account the Life Cycle Assessment (LCA) of each vehicle type, i.e. data on the environmental aspects by all actors in the vehicle development and production chain (e.g. according to standard ISO 14040/44) as well as for the End of Life phase (recycling and final disposal).

For further information, please consult the website of the WP.29/GRPE informal group on Environmentally Friendly Vehicles at: <<http://www.unece.org/trans/main/wp29/wp29wgs/wp29grpe/efv01.html>>.

Fact box 7.2

Emission by buses and coaches in the Netherlands

	1990	2000	2005	2006	2007*
	million kg				
CO Carbon monoxide ¹⁾	4.1	1.8	1.2	1.0	0.9
NMVO C Volatile organic compounds ²⁾	2.43	0.8	0.41	0.35	0.28
NOx Nitrogen oxide ³⁾	10.31	7.11	5.46	5.04	4.62
PM10 Particulate matter ⁴⁾	1.1	0.33	0.17	0.15	0.12
SO2 Sulphur oxide ⁵⁾	0.61	0.1	0.01	0.00	0.00
CO2 Carbon dioxide ⁶⁾	580	576	572	561	563
N2O Laughing gas/dinitrogen oxide	0.01	0.01	0.01	0.01	0.00
CH4 Methane ⁶⁾	0.1	0.03	0.02	0.01	0.01
CO Carbon monoxide ¹⁾	4.1	1.8	1.2	1.0	0.9
NMVO C Volatile organic compounds ²⁾	2.43	0.8	0.41	0.35	0.28
NOx Nitrogen oxide ³⁾	10.31	7.11	5.46	5.04	4.62
PM10 Particulate matter ⁴⁾	1.1	0.33	0.17	0.15	0.12
SO2 Sulphur oxide ⁵⁾	0.61	0.1	0.01	0.00	0.00
CO2 Carbon dioxide ⁶⁾	580	576	572	561	563
N2O Laughing gas/dinitrogen oxide	0.01	0.01	0.01	0.01	0.00
CH4 Methane ⁶⁾	0.1	0.03	0.02	0.01	0.01

Source: **Statistics Netherlands**

- 1) Toxic gas (detrimental to health).
- 2) Excluding methane. Smog generating and sometimes carcinogenic.
- 3) (NOx = NO and NO₂, calculated as NO₂). Causes acidification and generates smog.
- 4) PM10 = particulates with diameter smaller than 10 micrometers. Detrimental to health, penetrates deeply into the lungs.
- 5) SO₂ and SO₃, calculated as SO₂. Causes acidification.
- 6) Greenhouse gasses (causes the temperature of the earth's atmosphere to rise gradually).

Fact box 7.3

Unit emissions by buses and coaches in the Netherlands

(average emission per vehicle kilometre)

	2000	2001	2002	2003	2004	2005	2006	2007*
	grams/km							
CO Carbon monoxide	2.8	2.6	2.4	2.2	2	1.8	1.6	1.4
NOx Nitrogen oxide	11	10.6	10.1	9.5	9	8.6	8.1	8.1
PM10 Particulate matter	0.513	0.447	0.401	0.354	0.308	0.274	0.236	0.236
SO2 Sulphur oxid	0.153	0.058	0.027	0.027	0.027	0.014	0.005	0.005
CO2 Carbon dioxide	890	892	894	897	899	898	899	902
N2O Laughing gas/dinitrogen oxide	0.010	0.009	0.009	0.009	0.008	0.008	0.008	0.007
CH4 Methane	0.049	0.043	0.039	0.034	0.029	0.026	0.023	0.018

Source: **Statistics Netherlands**

IV. MODELLING

Environmental data are very often derived from other sources and studies. For example, to calculate carbon dioxide emission, input can come from traffic and transport studies and from

specific studies to determine the average emission per kilometre. Combining these data provides the total CO₂ emission for the group of vehicles studied.

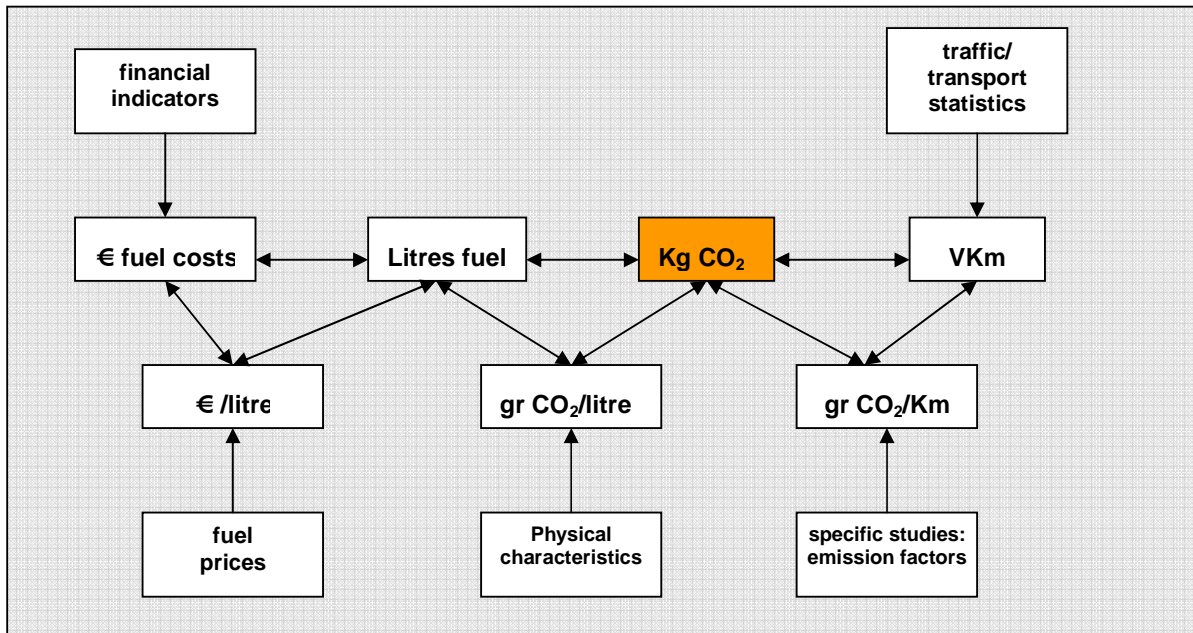
Figure 1 gives a theoretical overview of the relationship between the different indicators. The model describes the calculation of CO₂ emission, but it can also be applied for other emissions. First of all some parameters are needed, such as average fuel price (€ /litre), the carbon dioxide content of a litre of fuel (gr CO₂ /litre) and emission factors for buses and coaches.

Once we have obtained the total amount of CO₂, then the amount of fuel that is needed to produce this CO₂ can be calculated. We use the physical characteristics of an average litre of fuel. In this example, the CO₂ content of 1 litre of fuel (diesel) is used. Dividing the amount of CO₂ by gr.CO₂/litre (in the appropriate scale) gives the total fuel consumption in litres.

$$\text{VKm} \times \text{gr CO}_2/\text{KM} / 1000 = \text{Kg CO}_2$$

$$\begin{aligned} &\text{Kg CO}_2 \\ &\text{-----} \times 1000 = \text{Litres fuel} \\ &\text{gr CO}_2/\text{litre} \end{aligned}$$

Figure 1
Relationship between different indicators

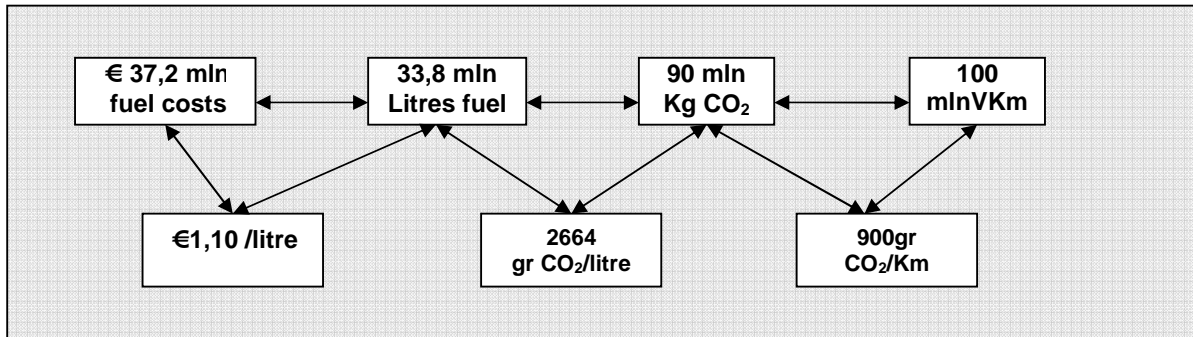


V. EXAMPLE

Applying this model to a fictitious situation where the traffic is measured (100 million vkm) and the parameters are given, it is possible to calculate the CO₂ emission (90 million kg), the corresponding volume of fuel (33.2 million litres) and the fuel costs (€ 36.5 million). However, if we consider that this scheme is based on 1,250 buses and coaches that cover 2,000 million passenger kilometres (pKm), we can calculate the following indicators:

45 gram CO₂ per pKm
 2 eurocent fuel costs per pKm
 80 000 km/vehicle/year
 72 tonnes of CO₂ per vehicle per year
 520 litres diesel per vehicle per week

Figure 2
Example using the model of figure 1¹⁸



VI. CONCLUSION

In order to be able to compare the energy use and emissions of buses and coaches with other land transport modes, it is necessary to collect some basic data. Vehicle kilometres are an essential indicator, as they provide a good starting point, in combination with the age and fuel consumption of buses and coaches, to calculate the emission of GHGs. Other characteristics of the use of vehicles are important for reporting to international organizations. Emissions per passenger km and emissions on national territory are easier to calculate if the details of the performance indicators are accurate. The method described above only provides a very rough indication of vehicle emissions and can be further refined.

¹⁸ Fuel price: estimated average price of 1 litre diesel: € 1.10

gr CO₂/litre Based on: Emission Facts. Average Carbon Dioxide Emissions Resulting from Gasoline and Diesel Fuel, United States Environmental Protection Agency (document EPA420-F-05-001) CO₂ emissions from a gallon of diesel = 2,778 grams x 0.99 (1 per cent is not oxidized) x (44/12) = 10,084 grams = 10.1 kg/gallon = 22.2 pounds/gallon. 1 US gallon = 3,785 L resulting in 2664 grams CO₂/Litre
 Emission factor is estimated based on internal calculations.

CHAPTER 8

ENTERPRISES

I. INTRODUCTION

Enterprise statistics are in great demand for economic analysis by a large number of users - the Commission services, the European Central Bank, national governments, and also private sector companies and financial markets. Enterprise statistics are one of the basic statistical tools for measuring and monitoring competitiveness and entrepreneurship. Enterprise statistics are mainly produced using the data reported by enterprises for statistical questionnaires or data from administrative registers collected for other purposes, e.g. taxation.

II. DATA COLLECTION ON ENTERPRISE STATISTICS

Several international organizations collect data on enterprise statistics. These data are generally less detailed, which makes it impossible to distinguish the data on bus and coach transport enterprises. Apart from bus and coach enterprise statistics, enterprise statistics may also include rail transport and transport via pipelines, or other modes of transport and communication.

III. PRODUCTION OF ENTERPRISE STATISTICS IN THE EUROPEAN UNION

In the European Union, enterprise statistics are produced, depending on the detail and periodicity of data, according to two main and related legislative acts:

- (a) Council Regulation (EC, Euratom) No. 58/97 of 20 December 1996 concerning **structural business statistics (SBS)** and its supplements No. 2700/98, No. 2701/98, No. 1614/2002, No. 2056/2002, No. 1669/2003. Hereinafter according to REGULATION (EC) No. 295/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 March 2008 concerning structural business statistics.
- (b) COUNCIL REGULATION (EC) No. 1165/98 of 19 May 1998 concerning **short-term statistics (STS)** amended by REGULATION (EC) No. 1158/2005 – concerning short-term statistics and by COMMISSION REGULATION (EC) No. 1503/2006 – implementing and amending CR No. 1165/98 concerning short-term statistics as regards definition variables, list of variables and frequency of data compilation.

IV. DETAILS OF SBS REGULATION

The unit of observation for most variables in annual statistics is the **enterprise**, unless they are regional statistics, in which case the observation unit is the **local unit**. The first reference year for annual statistics which are compiled according to Council Regulation 58/97 is the calendar year 1995. The first reference year for annual statistics which are compiled according to Regulation 295/2008 is the calendar year 2008.

Main variables produced annually are: number of enterprises, turnover, number of persons employed, production value, value-added at factor cost, total purchases of goods and services, purchases of goods and services purchased for resale in the same condition as received, personnel costs, wages and salaries, social security costs, gross investment in tangible goods, number of employees.

Number of enterprises, turnover, value added at factor cost, number of persons employed, gross investment in tangible goods (optional) are also produced by size classes. Size classes according to number of persons employed are: 1, 2-9, 10-19, 20-49, 50-249, 250 +.

Business demography statistics are also produced annually; these include detailed data on the population of enterprises, such as: population of active enterprises, number of births of enterprises, number of deaths of enterprises, number of enterprises newly born, etc.

Yearly transport statistics according to Regulation 295/2008 (from 2008 onwards) are produced at 4-digit level of NACE Rev.2; data for bus and coach transport enterprises are available.

Yearly transport statistics according to CR 58/97 are produced mainly at 3-digit level of NACE Rev.1.1. Bus and coach transport statistics are produced in the grouping 60.21 + 60.22 + 60.23. Other land transport without freight transport by road, which – in addition to bus and coach transport – also includes taxi operation and urban bus, tram and trolley transport.

The results of annual statistics must be transmitted within 18 months of the end of the reference calendar year. Preliminary results (turnover, number of persons employed) or estimates are transmitted within 10 months of the end of the reference calendar year.

V. DETAILS OF STS REGULATION

The quarterly produced variables are turnover and number of persons employed. The observation unit is the **enterprise**. The first reference period for quarterly statistics is the first quarter of 1998.

Quarterly transport statistics are produced at NACE 2-digit level. Bus and coach transport statistics are produced in the grouping Land transport and transport via pipelines which - besides bus and coach transport enterprises - also includes rail transport, taxi operation, and urban bus, tram and trolley transport, road freight transport and transport via pipelines.

The deadline for transmission of quarterly turnover data and number of persons employed is two months after the end of the reference quarter.

All of the variables are to be transmitted in unadjusted form. The turnover variable also has to be transmitted in working-day adjusted form. Variables are to be transmitted as an index or as absolute figures.

VI. AVAILABILITY OF SBS AND STS DATA AND METADATA

Enterprise statistics according to SBS and STS regulations are disseminated on the Eurostat website at <http://www.europa.eu.int/comm/eurostat> under the headings Tables and Data, domain **Industry, trade and services - horizontal view**. Methodological manuals and descriptions relating to statistics are available under the heading Methodology.

The SBS characteristics according to CR No. 58/97 are defined in Commission Regulation No. 2700/98 (<http://circa.europa.eu/irc/dsis/bmethods/info/data/new/2700-98en.pdf>). The definitions of the SBS characteristics according to Regulation (EC) No. 295/2008 have been updated slightly compared to the previous versions. European Union laws can be found at EUR-Lex webpage <http://eur-lex.europa.eu/en/index.htm>.

The detailed overview of the series produced according to CR No 58/97 can be found on the Eurostat webpage under the heading Methodology ([Structural business statistics - SDDS Summary Methodology](#)). Recent and detailed information on the statistical system and the SBS survey strategy of individual countries is available at: <http://www.europa.eu.int/comm/eurostat> under the heading Methodology / Special Data Dissemination Standard (SDDS) / Structural Business Statistics (http://europa.eu.int/estatref/info/sdds/en/sbs/sbs_nm.htm).

A Summary Methodology of different short-term statistics time series is available at: <http://www.europa.eu.int/comm/eurostat> under heading Methodology / Special Data Dissemination Standard (SDDS) / Industry, trade and services/Short-term business statistics: (http://europa.eu.int/estatref/info/sdds/en/ebt/ebt_base.htm). Detailed information on the statistical system and the STS survey strategy of individual countries is available at: <http://circa.europa.eu/Public/irc/dsis/Home/main> Short-term Statistics in catalogue Library / STS Methodology / STS Sources.

VII. IMPLEMENTATION OF NACE REV.2

In 2007, the new Statistical Classification of Economic Activities in the European Community, NACE Rev.2, was adopted.

The classification is available at: <http://www.europa.eu.int/comm/eurostat> under heading Methodology / Eurostat's Metadata Server (RAMON) / Classifications.

See also <http://circa.europa.eu/irc/dsis/nacepacon/info/data/en/index.htm>.

Land transport according to NACE Rev.1.1 and NACE Rev.2 is classified as follows:

NACE Rev.1.1		NACE Rev.2	
I	TRANSPORT, STORAGE AND COMMUNICATION	H	TRANSPORTATION AND STORAGE
60	Land transport; transport via pipelines	49	Land transport and transport via pipelines
60.1	Transport via railways	49.1	Passenger rail transport, interurban
		49.2	Freight rail transport
60.2	Other land transport	49.3	Other passenger land transport
60.21	Other scheduled passenger land transport	49.31	Urban and suburban passenger land transport
60.22	Taxi operation	49.32	Taxi operation
60.23	Other land passenger transport	49.39	Other passenger land transport n.e.c.
60.24	Freight transport by road	49.4	Freight transport by road and removal services
60.3	Transport via pipelines	49.5	Transport via pipeline

Short-term statistics according to NACE Rev.2 are to be produced for the first quarter of 2009 onwards and annual statistics for the calendar year 2008 onwards. Historical time series of short-term statistics will be recalculated according to NACE Rev.2 and disseminated at the same time as the data for the first quarter of 2009.

The historical annual data will not be recalculated according to NACE Rev.2. The annual data for calendar year 2008 will be produced and disseminated according to both NACE Rev.1.1 and NACE Rev.2.

VIII. CONCLUSION

A good source of enterprise statistics are the variables produced pursuant to the Council Regulations concerning structural business statistics and short-term statistics. The disadvantage is that these statistics are produced only for the member States of the European Union. Moreover, the statistics are produced only for certain activities and at a certain level of detail. While using the data collected and published according to the Council Regulations on enterprise statistics, it is important to remember that annual bus and coach transport statistics are available from the reference year 2008 onwards. For earlier years, these are available only for activity “other land transport”, including taxi operation and urban bus, tram and trolley transport. Short-term statistics are available for activity land transport and transport via pipelines, including – apart from bus transport

enterprises – also rail transport, taxi operation, urban bus, tram and trolley transport, road freight transport and transport via pipelines.

In addition to the variables collected according to the Structural Business Statistics (SBS) and Short-Term Statistics (STS) regulation, it has been possible to produce the supplementary indicators of enterprise statistics for domestic needs. To obtain Gross Domestic Product (GDP), both annual and quarterly data on expenses, stock, investments, etc. are collected frequently. Also the breakdown of activity groups, size groups etc. may vary according to national needs. Based on national needs, it is possible to produce the main variables also by type of transport service offered, by size classes, etc.

For those countries that do not produce enterprise statistics or do not follow the Council Regulations on enterprise statistics, the practices of different countries and the methodology of surveys could be monitored when introducing or improving the national survey.

Fact box 8.1
Annual enterprise statistics, activities I6021 to I6023*, 2006.

Indicator	Czech Republic	Germany	Estonia	Netherlands	Poland	Slovakia	Sweden
Number of enterprises	9 258	24 227	233	4 470	47 789	128	9 122
Turnover (million €)	885.6	14 927.2	101.8	2 848.1	2 874.9	266.3	5 585.1
Number of persons employed	46 848	292 406	6 131	c	148 702	14 827	58 826

* Other scheduled passenger land transport; taxi operation; other land passenger transport (NACE Rev.1.1)

Annual enterprise statistics, Germany, activities I6021 to I6023, 2006

Indicator	I6021 to I6023	I6021	I6022	I6023
Number of enterprises	24 227	3 225	18 638	2 364
Turnover (million €)	14 927.2	10 853.1	2 173.1	1 901.0
Number of persons employed	292 406	156 940	99 734	35 732

Source: Eurostat (20.02.2009)

Basic enterprise statistics data collection, Activities H4931 and H4939 (NACE Rev.2)

Variable	Total (H4931 and H4939)	Urban and suburban passenger land transport (H4931)		Other passenger land transport (H4939)	
		Urban bus transport	Tram, trolleybus, urban rail transport	Interurban	International*
Number of enterprises					
Turnover					
Number of persons employed					

* including cabotage and cross-trade transport

SUMMARY

The discrepancy between users' needs and available statistics is not easily solved. Therefore, we suggest narrowing the scope and using this context to create a maximum output without introducing any new questionnaires. In fact, grouping the existing information is already a big step in compiling statistics on buses and coaches.

The major problem is to obtain data on the market segment of regular long distance (interurban) transport by buses and coaches. Most data collections are based on total transport or on urban and suburban transport. Besides, the definition problem is hard to resolve. The definition of "long distance" differs depending on which data collections are considered. The tables that are produced should have an indicative character.

The field of statistics on buses and coaches is a cross-section through all transportation statistics. Some of the subfields are very poorly developed. However, some countries have very detailed statistics on subsets. This makes it difficult to present a general conclusion.

Aiming too high will stop the process, aiming too low will give no added value. Therefore, the specific section of the bus and coach industry involved in long distance interurban regular transport should be seen in the context of the whole industry. This means that, in some cases, only totals are available. An estimation methodology should be developed for this specific segment.

The attached pilot questionnaire focuses primarily on traffic, transport measurement and transport equipment. Accident data are already being collected, as shown in the chapter on accidents. Traffic indicators are a basic input for environmental indicators. At the moment, enterprise data for the bus and coach market segment cannot be derived. There are no plans to introduce greater detail into the NACE classification in the near future.

The following table indicates the minimum output that is currently possible without major changes in data collection methods.

Frequency: yearly

Market segments:

- (a) Regular (and special regular) and occasional
- (b) National and international
- (c) Urban (incl. suburban) and interurban services

These classifications can be combined in a different way

Starting with the regular/occasional perspective:

Table 1

Total bus and coach transport	Regular			Occasional	
	National		International	National	International
	Urban transport	Interurban transport			

If some subcategories are missing, subtotals can be inserted to make the table meaningful.

Table 2

Total bus and coach transport	Total national	Total international	Regular					Occasional		
			Total regular	International	National			Total occasional	National	International
					Total	Urban	Inter-urban			
(a+b+c+d)	(b+c+d)	(a+e)	(a+b+c)	(a)	(b+c)	(b)	(c)	(d+e)	(d)	(e)

There are other possible hierarchies (the column indicators correspond with those above):

Table 3

Total bus and coach transport	National		International		
	Regular		Occasional	Regular	Occasional
	Urban transport	Interurban transport			
	(b)	(c)	(d)	(a)	(e)

Table 4

Suggested basic indicators and variables

Subfield	Key indicators	Main classifications
Traffic and Transport measurement	Number of vehicle kilometres Number of passenger kilometres Number of passengers Number of seat kilometres	National/international
Transport Equipment	Number of buses and coaches Number of seats (total) Number of first registrations	Fuel type Age Emission code Vehicle type
Infrastructure	Number of terminals Number of regular lines Length of regular lines	
Accidents	Number of injury accidents involving buses and coaches Number of injuries Number of persons killed	Driver/passenger
Environment	Emission of greenhouse gases Fuel consumption	Emission type Fuel type
Enterprises	Number of enterprises Turnover Number of persons employed	

The end result depends on the outcome of the methodology questionnaire developed by this task force. Financial indicators and service quality indicators are poorly developed or absent in most UNECE countries, and are not regarded as achievable. Therefore, these indicators are omitted.

At this stage, it is difficult to make proposals for new tables. Therefore the suggested indicators and classifications in Table 1 represent the most feasible output. Annex III and some fact boxes in the previous chapters are examples of what is available now.

Annex I

DEFINITIONS

INFRASTRUCTURE

Road inside a built-up area

Road within the boundaries of a built-up area with entries and exits signposted as such.

Roads inside a built-up area often have a speed limit of 50 km/h. Excluded are motorways, express roads and other roads of higher speed traversing the built-up area, if not signposted as built-up roads. Streets are included.

Road outside a built-up area

Road outside the boundaries of a built-up area, which is an area with entries and exits signposted as such.

Urban area

Area within the administrative boundary or a set of administrative boundaries of a core city (settlement).

Urban area may be classified by size according to number of inhabitants:

10 000 to 49 999 – small

50 000 to 249 000 – medium

250 000 or more – large

Urban areas will comprise territorial units having a larger number of inhabitants, most of those, but not necessarily all, are living in built-up areas. Built-up areas may include villages and towns in rural districts.

TRANSPORT EQUIPMENT

Allowed bus/motor-coach passenger capacity

Maximum number of seated and standing passengers (excluding the driver) allowed by the competent authority of the country of registration

Buses

Passenger road motor vehicle designed to carry more than 23 persons (including the driver), and with provision to carry seated as well as standing passengers.

The vehicles may be constructed with areas for standing passengers, to allow frequent passenger movement, or designed to allow the carriage of standing passengers in the gangway.

Minibuses

Passenger road motor vehicle designed to carry 10-23 seated or standing persons (including the driver).

The vehicles may be constructed exclusively to carry seated passengers or to carry both seated and standing passengers.

Motor-coach or bus

Passenger road motor vehicle designed to seat more than nine persons (including the driver).

Statistics also include mini-buses designed to seat more than 9 persons (including the driver).

Motor coaches

Passenger road motor vehicle designed to seat more than 23 persons (including the driver) and constructed exclusively for the carriage of seated passengers.

Number of seats/berths in buses and motor coaches

Number of seats/berths, including the driver's, available in the vehicle when it is performing the service for which it is primarily intended.

In case of doubt, the highest number of seats/berths available should be taken into account.

Stock of buses or motor-coaches

Number of buses or motor-coaches registered at a given date in a country and licensed to use roads open to public traffic.

This includes buses or motor-coaches exempted from annual taxes or licence fees; it also includes imported second-hand vehicles. The statistics should exclude military vehicles.

ENTREPRISE

Costs

The amount of available resources spent by the road transport enterprise in relation to an operation or service, or a series of operations or services.

Employment

Average number of persons working during the given period in a road transport enterprise (including working proprietors, partners working regularly in the enterprise and unpaid family workers), as well as persons working outside the enterprise but who belong to it and are directly paid by it.

Gross value added

Gross output of the road transport enterprise, less the value of its intermediate consumption. Gross value added of domestic production of all road transport enterprises in a country is equal to their contribution to the GDP of that country.

It is understood that gross value added, in this context, is expressed in market prices.

Revenues

Amounts expressed in monetary units which are entered in the accounts as credit to the road transport enterprise.

Road passenger transport enterprise

Road transport enterprise offering and performing services in the transport of one or more persons (passengers), not including the driver, and whose main activity in the field of road transport, according to value-added, is road passenger transport.

Turnover

Total amount invoiced by the road transport enterprise during the period under review. This corresponds to market sales of goods or services supplied to third parties. Turnover includes all duties and taxes on the goods or services invoiced by the enterprise, with the exception of VAT invoiced by the unit vis-à-vis its customer. It also includes all other charges ascribed to the customer. Reduction in prices, rebates and discounts as well as the value of returned packing must be deducted, but not cash discounts.

Turnover does not include sales of fixed assets. Operating subsidies received from public authorities are also excluded.

Types of revenues

The main categories of revenues to be considered are:

-- Revenues from transport operations

This category includes goods and passenger traffic revenues.

-- Amounts received from the State or other public bodies

This category includes compensation receipts and other subsidies.

-- Other revenues

This category includes revenues not related to transport activities, e.g. financial revenues.

Types of costs

The main categories of costs being considered are:

-- Labour costs

Including wages and salaries of active staff, pensions, various social charges, etc.

-- Material and service costs

Including purchase of other material and services provided by third parties, but excludes energy consumption costs.

-- Energy consumption costs

-- Taxes

-- Financial charges

-- Other costs

Including amounts allocated to depreciation and provisions, etc.

TRAFFIC

Bus or motor-coach journey

A movement of a bus or motor-coach from a specified point of origin to a specified point of destination.

Cabotage transport by bus or motor-coach

National transport performed by bus or motor-coach registered in another country.

Cross-trade transport by bus or motor-coach

International transport performed by bus or motor-coach registered in a third country.

A third country is a country other than the country of loading/embarkation or than the country of unloading/disembarkation.

International transport by bus or motor-coach

Transport by bus or motor-coach between a place (of loading/embarkation or unloading/disembarkation) in the reporting country and a place (of loading/embarkation or unloading/disembarkation) in another country.

Such transport may involve transit through one or more additional countries.

National transport by bus or motor-coach

Transport by bus or motor-coach between two places (a place of loading/embarkation and a place of unloading/ disembarkation) located in the same country, irrespective of the country in which the vehicle is registered. It may involve transit through a second country.

Occasional services

Services which do not fall within the definition of regular services, including special regular services, and whose main characteristic is that they carry groups of passengers constituted on the initiative of the customer or the carrier himself.

Own-account transport operations

Operations carried out for non-commercial and non-profit-making purposes by a natural or legal person, whereby:

- the transport activity is only an ancillary activity for that natural or legal person,
- the vehicles used are the property of that natural or legal person or have been obtained on deferred terms by them or have been the subject of a long-term leasing contract and are driven by a member of the staff of the natural or legal person or by the natural person himself.

Place of embarkation

The place taken into account is the place where the passenger boarded a road vehicle to be conveyed by it.

A transfer from one road vehicle to another is regarded as embarkation after disembarkation.

Place of disembarkation

The place taken into account is the place where the passenger alighted from a road vehicle after having been conveyed by it.

A transfer from one road vehicle to another is regarded as disembarkation before re-embarkation.

Regular services

Services which provide for the carriage of passengers at specified intervals along specified routes, and passengers being taken up and set down at predetermined stopping points.

Road passenger

Any person who makes a journey by a road vehicle. Drivers of passenger cars, excluding taxi drivers, are counted as passengers. Service staff assigned to buses, motor coaches, trolleybuses, trams and goods road vehicles are not included as passengers.

Road passenger trip on public transport

The combination between the place of embarkation and the place of disembarkation of passengers conveyed by bus or tram.

A passenger transfer from one vehicle directly to another one of the same kind, regardless of the undertaking, shall if possible not be regarded as disembarkation / embarkation. Whenever during the transfer another mode of transport is used, this is to be regarded as disembarkation from a vehicle followed by a subsequent embarkation on another vehicle.

Road passenger transport link

The combination of the place of embarkation and the place of disembarkation of the passengers conveyed by road, whichever itinerary is followed.

Places are defined by using international classification systems such as NUTS (Nomenclature of Territorial Units for Statistics - Eurostat).

Special regular services

Regular services, organized by whomsoever, which provide for the carriage of specified categories of passengers to the exclusion of other passengers.

Urban road transport

Transport carried out on urban roads or tramways.

Only transport mainly or solely performed on urban roads is considered to be urban transport.

Use of transport capacity

Indicator of the use of the transport capacity.

The indicators can be calculated as the actual transported amount of goods or passengers as a percentage of the capacity of the vehicle measured in weight, volume, area of body or allowed number of seated or standing passengers (as defined in B.II.30a-d).

Taking into account the transported distance and gradually unloading during a journey, an alternative indicator can be calculated as the actual transport performance expressed as a percentage of the maximum possible transport performance for the actual journeys.

TRANSPORT MEASUREMENT

Road passenger-kilometre

Unit of measurement representing the transport of one passenger by road over one kilometre.

The distance to be taken into consideration is the distance actually travelled by the passenger.

Vehicle-kilometre

Unit of measurement representing the movement of a bus or motor-coach over one kilometre.

The distance to be considered is the distance actually covered. It includes movements without passengers.

ENERGY CONSUMPTION

Energy consumption by bus or motor-coach

Final energy consumed by buses or motor-coaches.

This includes final energy consumed by unloaded buses or motor-coaches.

Tonne of oil equivalent (TOE)

Unit of measurement of energy consumption: 1 TOE = 0.041868 TJ.

Conversion factors adopted by the International Energy Agency (IEA) for 1991 are the following:

--	Motor gasoline	1.070
--	Gas/diesel oil	1.035
--	Heavy fuel oil	0.960
--	Liquefied petroleum gas	1.130
--	Natural gas	0.917

The conversion factor used by the IEA for electricity is: 1 TWh = 0.086 Mtoe.

Alternative fuel

A type of motive power other than the conventional fuels, petrol and diesel.

Alternative fuels include electricity, LPG, natural gas (NGL or CNG), alcohols, mixtures of alcohols with other fuels, hydrogen, biofuels (such as biodiesel), etc. (This list is not exhaustive.) Alternative fuels do not include unleaded petrol, reformulated petrol or city (low-sulphur) diesel.

ACCIDENTS

Injury accident

An injury accident is any accident involving at least one bus or motor-coach in motion on a public road or private road to which the public has right of access, resulting in at least one injured or killed person.

A suicide or an attempted suicide is not an accident but an incident caused by a deliberate act to injure oneself fatally. However, if a suicide or an attempted suicide causes injury to another road user, then the incident is regarded as an injury accident.

Included are: collisions between road vehicles; between road vehicles and pedestrians; between road vehicles and animals or fixed obstacles and with one road vehicle alone. Included are collisions between road and rail vehicles. Multi-vehicle collisions are counted as only one accident provided that any successive collisions happen within a very short interval. Injury accident excludes accidents incurring only material damage.

Fatal accident

Any injury accident resulting in a person being killed.

Non-fatal accident

Any injury accident other than a fatal accident.

Casualty

Any person killed or injured as a result of an injury accident.

Person killed

Any person killed immediately or dying within 30 days as a result of an injury accident, excluding suicides.

A killed person is excluded if the competent authority declares the cause of death to be suicide, i.e. a deliberate act to injure oneself resulting in death.

For countries that do not apply the threshold of 30 days, conversion coefficients are estimated so that comparisons on the basis of the 30 day-definition can be made.

Person injured

Any person not killed, but who sustained an injury as result of an injury accident, normally needing medical treatment, excluding attempted suicides.

Persons with lesser wounds such as minor cuts and bruises are not normally recorded as injured.

An injured person is excluded if the competent authority declares the cause of the injury to be attempted suicide, i.e. a deliberate act to injure oneself resulting in injury, but not in death.

Person seriously injured

Any person injured who was hospitalized for a period of more than 24 hours.

Person slightly injured

Any person injured, excluding persons seriously injured.

Persons with lesser wounds, such as minor cuts and bruises are not normally recorded as injured.

Driver involved in an injury accident

Any person involved in an injury accident who was driving a bus or motor-coach at the time of the accident.

Passenger involved in an injury accident

Any person involved in an injury accident, other than a driver, who was in or on a road vehicle, or in the process of getting in or out of a road vehicle.

Accident with drivers reported under the influence of alcohol, drugs or medication

Any injury accident where at least one driver is reported to be under the influence of alcohol, drugs or medication impairing driving ability, according to national regulations.

Annex II

METHODOLOGY AND QUESTIONNAIRE

METHODOLOGY

This task force began its work by only addressing the area of long distance transportation of buses and coaches, but after a while it became obvious that all kinds of bus and coach transport should be included in its work. Discussions revealed that the knowledge about the actual range of the transport market for buses and coaches was limited and that it was difficult to gain an overview of the market as a whole. Also, the structure of this market is not fully known. Statistical data on these transport-related issues are necessary for policymaking. In addition, there is a need for common definitions, common standards and increased harmonization.

A first questionnaire was sent out to UNECE countries to see whether statistics were collected in this area. The first questionnaire is included in the end of this chapter (summary of answers is available at <http://www.unece.org/trans/main/wp6/transstatac6wdoc.html>).

Among the answers received from 24 countries, eight countries did not collect data in this area. In most countries that do collect data, the collection is regulated by law. There was a specific question about the definition of long distance transport. Two main definitions were used: either transport longer than 100 km or transport between countries.

Eight of the 16 nations that collected data in 2006 had surveys that were regulated by law. Ten of them had long-distance transport as a variable in their survey. Thirteen of them divided long distance transport into national and international trips. Eight of them divided it into regular and occasional transport. Eleven of them had urban transport as a variable in their survey and three nations had conducted these kinds of surveys only once.

Following the questionnaire asking whether or not statistics were collected in this area, the question was raised as to what kind of data were collected and in what way.

A new questionnaire was prepared taking the chapter “Users’ needs” as a starting point. This questionnaire consisted of a spreadsheet in which respondents were asked to indicate which questions they could answer. This second questionnaire is also included in the end of this chapter. The questionnaire was distributed to the countries which had participated in the task force group.

The five nations included in the task force group were asked to mark with an x in the spreadsheet which variables they collected in their surveys. The variables were sorted under six different main categories. The first main category, Transport/traffic indicators, was the category which the respondents were able to answer, especially as regards questions about national regular traffic. Questions about occasional traffic were also frequently marked in the sheet.

As to the second main category, Fleet statistics, most countries indicated that the collected figures represented a total, although hardly any of the countries were able to divide them into sub groups. Nearly the same result was achieved for the main category Enterprise statistics. The sub-groups of Fleet statistics showed the worst results. The response to the three other main categories was not so good. The best result for those three was the regular traffic in the main category Financial data, but as a whole very few of these category boxes were marked.

After analyzing which questions seemed relevant based on respondents' answers, another questionnaire was sent out to participating members of the task force group. Respondents were then asked to comment on the new version of the questionnaire. After taking these comments into consideration, the final version of the questionnaire was issued.

QUESTIONNAIRE ON STATISTICS REGARDING TRANSPORTATION BY BUSES AND COACHES

1.	<p>Is your organization doing a survey about transportation by buses and coaches? <i>If no, continue to question 6. If yes, is it regulated by law?</i></p>
2.	<p>Responsible organization? <i>Please insert the name of the organization, the name and contact details of the person responsible for the survey.</i></p>
3.	<p>What kind of transport is included? <i>Long-distance, urban, national, international, regular (scheduled), occasional, charter, tourism?</i></p>
4.	<p>What is the definition of long-distance transport?</p>
5.	<p>How is data collected and how often? <i>Please indicate the periodicity of the survey (monthly, quarterly, yearly) and response rate.</i></p>
6.	<p>Have there been any attempts to collect this data in the past? <i>To be answered if no current statistics is available. Please indicate the period of the last available data.</i></p>
7.	<p>Has any other organization performed or is performing a survey of this kind in your country? <i>If yes, please provide details of the organization and contact person if possible.</i></p>

Questionnaire on Statistics on Passenger Transport by Buses and Coaches

COUNTRY:						2008
1. <u>Bus, coach and minibus/coach movements</u> Vehicles registered in the reporting country <i>Vehicle-kilometres (Million)</i>						
0101000. total						
by area of transport and regularity of transport						
0101001. urban transport						
01011011. regular transport						
01011012. occasional transport						
0101002. interurban transport						
01011021. regular transport						
01011022. occasional transport						
by type and regularity of transport						
0102100. national transport within the reporting country						
01021001. regular transport						
01021002. occasional transport						
0102101. international transport within the reporting country						
01021011. regular transport						
01021012. occasional transport						
0102200. international transport outside the reporting country						
01022001. regular transport						
01022002. occasional transport						
0102201. road cabotage, cross-trade or transit outside the reporting country						
01022011. regular transport						
01022012. occasional transport						

COUNTRY:					2008
2. <u>Bus, coach and minibuses/coach journeys offered</u> Vehicles registered in the reporting country <i>Journeys offered (1000)</i>					
0201000. total					
by area of transport and regularity of transport					
0201001. urban transport					
02011011. regular transport					
02011012. occasional transport					
0201002. interurban transport					
02011021. regular transport					
02011022. occasional transport					
by type and regularity of transport					
0202100. national transport within the reporting country					
02021001. regular transport					
02021002. occasional transport					
0202101. international transport within the reporting country					
02021011. regular transport					
02021012. occasional transport					
0202200. international transport outside the reporting country					
02022001. regular transport					
02022002. occasional transport					
0202201. road cabotage, cross-trade or transit outside the reporting country					
02022011. regular transport					
02022012. occasional transport					

COUNTRY:					2008
3. <u>Bus, coach and minibus/coach seat kilometres offered</u> Vehicles registered in the reporting country <i>Seat-kilometres offered (Million)</i>					
0301000. total					
by area of transport and regularity of transport					
0301001. urban transport					
03011011. regular transport					
03011012. occasional transport					
0301002. interurban transport					
03011021. regular transport					
03011022. occasional transport					
by type and regularity of transport					
0302100. national transport within the reporting country					
03021001. regular transport					
03021002. occasional transport					
0302101. international transport within the reporting country					
03021011. regular transport					
03021012. occasional transport					
0302200. international transport outside the reporting country					
03022001. regular transport					
03022002. occasional transport					
0302201. road cabotage, cross-trade or transit outside the reporting country					
03022011. regular transport					
03022012. occasional transport					

COUNTRY:					2008
1. Passenger transport					
Vehicles registered in the reporting country					
<i>Passengers (1000)</i>					
0101000. total					
by area of transport and regularity of transport					
0101001. urban transport					
01011011. regular transport					
01011012. occasional transport					
0101002. interurban transport					
01011021. regular transport					
01011022. occasional transport					
by type and regularity of transport					
0102100. national transport within the reporting country					
01021001. regular transport					
01021002. occasional transport					
0102101. international transport within the reporting country					
01021011. regular transport					
01021012. occasional transport					
0102200. international transport outside the reporting country					
01022001. regular transport					
01022002. occasional transport					
0102201. road cabotage, cross-trade or transit outside the reporting country					
01022011. regular transport					
01022012. occasional transport					

COUNTRY:						2008
1. Passenger transport						
Vehicles registered in the reporting country						
<i>Passenger-kilometres (Million)</i>						
0201000. total						
by area of transport and regularity of transport						
0201001. urban transport						
02011011. regular transport						
02011012. occasional transport						
0201002. interurban transport						
02011021. regular transport						
02011022. occasional transport						
by type and regularity of transport						
0202100. national transport within the reporting country						
02021001. regular transport						
02021002. occasional transport						
0202101. international transport within the reporting country						
02021011. regular transport						
02021012. occasional transport						
0202200. international transport outside the reporting country						
02022001. regular transport						
02022002. occasional transport						
0202201. road cabotage, cross-trade or transit outside the reporting country						
02022011. regular transport						
02022012. occasional transport						
0102201. road cabotage, cross-trade or transit outside the reporting country						
01022011. regular transport						
01022012. occasional transport						

OVERVIEW OF FLEET STATISTICS

Fleet of buses, coaches and minibuses for certain countries by some variables at January 1st 2008										
			Countries							
			BE	CZ	ES	GE	LU	NL	PL	SK	S	etc.
Number of buses, coaches and minibuses										
Total										
<i>By type of fuel</i>										
DIESEL										
Buses, total										
<= 2 years										
2 => 5 years										
5 => 10 years										
> 10 years										
Coaches, total										
<= 2 years										
2 => 5 years										
5 => 10 years										
> 10 years										
Minibuses, total										
<= 2 years										
2 => 5 years										
5 => 10 years										
> 10 years										
PETROL										
Buses, total										
Coaches, total										
Minibuses, total										
ALTERNATIVE FUEL, total										
electricity										
lpg										
natural gas										
other										
<i>By capacity</i>										
Seat places										
Buses, total										
Coaches, total										
Minibuses, total										
Standing places										
Buses, total										
Coaches, total										
<i>By Euro Emission Code</i>										
Euro I										
Euro II										
Euro III										
Euro IV										
Euro V										
Euro VI										
Number of trolleybuses										

Annex III

AVAILABLE DATA

Table 1
Motor coaches, buses and trolleybuses at 31 December

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Albania	7612	8747	9227	10316	16806	20813	21026	21693	25066	..
Andorra	161	164	168	180	180	185	189	193	202	..
Armenia	..	..	..	..	..	..	..	..	..	..
Austria	9740	9718	9675	9834	9918	9902	9179	9231	9408	9301
Azerbaijan	12925	12053	13666	14941	16756	17275	17422	18781	20991	..
Belarus	36800	..	..	..	..	..	..	..	..	..
Belgium	14660	14667	14588	14673	14722	14676	14769	15060	15328	..
Bosnia and Herzegovina	1047	..	..	..	..	..	..	..	..	..
Bulgaria	41642	41202	42264	42721	43005	43566	43860	44348	36630	37776
Canada	64155	64261	68307	73174	77341	74086	75517	79875	77447	78064
Croatia	4596	4771	4814	4715	4637	4703	4731	4782	4811	4831
Cyprus	2801	2800	2754	2835	2949	3003	2997	3275	3199	3217
Czech Republic	21200	20755	19960	18981	18259	18384	21340	20627	19948	..
Denmark	13786	13779	13911	13909	13968	13954	13986	14132	14191	..
Estonia	6846	6602	6448	6336	6059	5542	5306	5493	5413	5194
Finland	8233	8450	9040	9487	9852	9769	10005	10358	10716	10912
France	82100	82000	84961	85668	85749	86954	85876	87101	88417	90055
Georgia	13700	14700	14800	18900	19800	22700	24100	25700	..	..
Germany	84954	84019	83285	84687	86656	86461	85880	86480	85508	83904
Greece	25096	25622	26320	27147	27459	27518	27650	27498	26780	..
Hungary	19381	18890	18795	17988	18100	18058	18114	18111	17619	17450
Iceland	1363	1483	1544	1621	1675	1711	1699	1711	1762	1899
Ireland	5535	7007	7194	7794	8247	8462	8486	8803	8980	9180

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Israel	14252	14713	14986	16805	18046	18780	11788	11631	11415	11779
Italy	78183	83612	85799	85762	87956	89858	91716	92701	..	..
Kazakhstan	39738	34130	29547	26146	24685	24436	24785	26004	..	..
Kyrgyzstan	..	..	..	..	..	..	..	..	..	..
Latvia	17603	18877	11829	11870	11807	11605	11475	11294	11051	10966
Liechtenstein	..	121	132	115	103	113	103	99	102	..
Lithuania	16026	15435	15679	16090	15543	15641	15842	16006	14853	15311
Luxembourg	915	944	945	984	1051	1122	1123	1176	1227	1270
Malta	967	1077	1117	1133	1141	1125	1134	1150	1003	..
Monaco	..	..	..	..	..	..	..	..	..	..
Montenegro	..	..	..	..	..	..	..	..	..	..
Netherlands	11334	10801	11006	11210	11374	11326	11382	11344	11234	..
Norway	33959	35171	36218	37039	36686	35667	34110	32374	30592	28783
Poland	85596	81788	80827	78958	82590	82500	83389	82769	82845	80175
Portugal	15681	16431	17513	18544	19780	20760	21387	..	..	..
Republic of Moldova	10278	11613	13327	13985	13167	15096	16183	16124	20112	..
Romania	44205	45015	46508	47305	48142	47724	40761	41947	..	..
Russian Federation	640848	640835	639732	645396	..	..	..	..	..	792088
Serbia	..	..	..	..	..	..	..	..	..	..
Slovakia	11582	11485	11515	11335	11149	10889	10834	10852	9202	9392
Slovenia	2406	2372	2327	2319	2259	2212	2189	2188	2257	..
Spain	48405	50035	51805	53540	54732	56146	56953	55993	55993	58248
Sweden	14753	14838	14924	14869	14417	14246	14013	13742	13363	..
Switzerland	37662	38508	39012	39692	40260	41342	42401	43629	44784	45785
Tajikistan	10214	8929	9777	9242	..	..	..	..	..	..
The former Yugoslav Republic of Macedonia	2442	2430	2478	2479	2498	2620	2497	2478	..	2269
Turkey	277672	298953	319856	333869	354339	358687	361797	368894	..	..
Turkmenistan	..	..	..	..	..	..	..	..	..	..
Ukraine	..	..	..	..	..	..	..	..	..	..

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
United Kingdom	162554	165820	166000	173358	177793	176968	177994	179691	182659	..
United States	694781	697548	715540	728777	746125	749548	760717	776550	795274	807053
Uzbekistan	..	..	..	..	..	..	..	..	..	..
Yugoslavia	13772	12022	12659	12520	9760	9895	8911	9144	9834	9825

Source: UNECE Transport Division Database.

Table 2
Motor coaches, buses and trolleybuses at 31 December by fuel type

	2000						2005					
	Petrol	Diesel	Electricity	LPG	Natural gas	Other	Petrol	Diesel	Electricity	LPG	Natural gas	Other
Austria	13	9789	116	..	..	..	6	9054	108	133	..	..
Belgium	214	14347	2	47	0	112	..	..	..	..	..	..
Croatia	40	4597	0	0	0	0	34	4797	0	0	0	0
Cyprus	153	2796	0	0	0	0	144	3073	0	0	0	0
Czech Republic	216	17966	727	0	0	77	..	..	..	..	..	..
Denmark	1579	12119	..	..	..	..	..	..	..	..	..	..
Estonia	2583	3476	137	..	..	..	914	4280	..	..	..	..
Finland	27	9743	0	7	..	34	33	10762	0	0	43	40
France	1273	83655	167	147	441	66	473	87561	174	191	1457	58
Germany	320	85545	105	..	..	..	196	82201	96	7	1277	127
Hungary	2355	15449	247	9	..	40	..	16581	..	..	..	..
Italy	1014	86391	270	72	141	68	..	..	..	..	..	..
Latvia	6948	4519	306	0	34	0	4584	6051	322	0	9	0
Lithuania	..	..	474	..	..	..	..	..	472	..	..	..
Netherlands	14	11116	..	..	..	..	..	..	..	..	..	..
Norway	3804	32882	..	..	..	..	2177	26500	9	93	..	4
Poland	8638	72898	234	820	..	..	4714	68769	608	1222	..	4862
Republic of Moldova	3392	1609	398	101	134	0	..	..	..	..	..	..
Slovenia	34	2216	0	9	0	0	..	..	..	..	..	..
Spain	964	53768	..	..	..	..	961	57287	..	..	..	..
Sweden	521	13114	..	..	..	..	..	..	..	..	..	..
Switzerland	17607	22573	31	..	..	49	14155	31201	32	..	..	..
The former Yugoslav Republic of Macedonia	483	1959	..	..	12	44	423	1813	..	33	..	..
United Kingdom	28684	143651	70	78	81	1	..	..	..	..	..	..

Source: UNECE Transport Division Database.

Table 3

Passenger-kilometres (millions) by motor coaches, buses and trolleybuses

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Albania	307	197	196	223	..	..	..	..	..	..	..	..	..
Armenia	697	717	1659	2375	1787	1020	841	784	1123	..	..	..	..
Austria	..	..	..	..	..	..	..	..	..	..	..	..	..
Azerbaijan	6258	5103	4285	3946	4344	5127	..	..	..	..	..	..	..
Belarus	..	12014	9308	..	..	..	..	..	..	..	..	..	..
Belgium	12440	12892	13068	13130	13278	13633	..	..	..	..	..	..	..
Bosnia and Herzegovina	..	20	112	508	..	..	..	..	..	..	..	..	..
Bulgaria	14167	12916	12288	10004	9383	9513	15486	14749	15370	16706	..	..	12006
Canada	..	..	..	..	..	..	..	..	22816	23234	21503	31704	31967
Croatia	3361	4041	4052	4266	4459	3964	3355	3331	3478	3557	3716	3390	..
Czech Republic	13617	12369	11763	16602	15611	15373	15444	16250	17591	16530	15315	14114	14587
Denmark	9502	9689	10610	11368	11211	9105	9127	9133	9031	8972	8978	..	..
Estonia	2292	2028	1728	1756	1894	2033	1899	2243	2720	2603	2573	2714	2938
Finland	8000	8000	8000	8000	8000	7800	7600	7700	7700	7700	7670	7605	7540
France	42000	42700	41600	42400	42000	42400	41600	43000	41300	42200	42700	44000	43900
Germany	..	..	..	..	..	..	..	..	..	..	..	..	..
Greece	5158	5566	5671	..	..	..	..	..	..	..	..	..	..
Hungary	..	..	..	18202	17377	17179	17793	18732	18616	18691	18898	17492	18027
Iceland	..	..	..	..	433	458	468	630	669	688	707	729	779
Italy	81447	..	..	..	..	..	..	..	..	..	..	..	..
Kazakhstan	..	14857	13843	10291	8620	6727	5014	5143	5415	5895	7383	..	..
Kyrgyzstan	3086	2070	2312	2647	3288	3862	4078	4597	4975	5027	5209	..	..
Latvia	2385	2434	2394	2018	2201	2451	2892	2746	2225	2855	3053	3288	3471
Lithuania	4522	4627	4169	4169	3601	2964	2665	2154	2833	3013	2987	3548	3690
Luxembourg	..	..	..	..	55	57	60	61	64	..	..	..	..
Netherlands	10675	10240	10629	12315	..	..	..	..	..	..	..	..	..
Norway	..	..	3752	4117	4248	4424	4424	4424	..	..	..	4231	4380
Poland	48735	46687	34024	33985	33129	34035	33250	31735	30997	29296	29996	30118	29314
Portugal	12284	11817	11268	11156	10462	11419	11481	11828	11166	9944	..	..	..
Republic of	2075	1908	2265	2109	1909	2036	2087	1835	1504	1934	2294	2616	..

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Moldova													
Romania	..	..	12343	12842	12557	10643	8848	8689	8998	8739	..	9438	11812
Russian Federation	228608	220532	214557	208122	206827	199505	200465	..	..	..	..	..	..
Slovakia	15639	14426	18240	17559	15913	14153	13284	10336	10319	9706	9099	9801	9224
Slovenia	2533	2415	2333	2184	2032	1947	1840	3502	3393	3339	3446	3218	3061
Spain	..	..	..	..	26598	28455	16718	18205	..	..	..	..	..
Sweden	..	8074	7919	7877	..	9100	9300	9300	9600	10100	..	..	..
Switzerland	..	..	..	..	..	4483	4513	4572	4707	..	..	..	..
Tajikistan	..	..	..	696	858	856	823	..	..	..	..	..	..
The former Yugoslav Republic of Macedonia	..	..	758	710	775	753	796	673	689	842	1051	..	1087
Turkey	86914	79170	..	..	..	..	..	..	..	..	..	..	..
Ukraine	73898	63114	53450	..	..	..	..	..	..	..	..	..	..
United Kingdom	44180	44260	44290	44180	43200	..	46000	47000	47000	47000	47000	48000	48000
United States	209139	218663	219127	223167	233547	239178	261537	259079	238462	233650	226583	..	..
Uzbekistan	..	17693	15098	14883	13995	12630	11278	10285	..	..	..	..	..
Yugoslavia	4689	3696	3524	4252	4091	4339	3055	3244	5769	5293	..	..	..

Source: UNECE Transport Division Database.

Table 4
Motor coaches, buses and trolleybuses at 31 December by age group

	2000				2004				2005			
	< or = 2 years	- 2 > or = 5 years	- 5 > or = 10 years	- > 10 years	< or = 2 years	- 2 > or = 5 years	- 5 > or = 10 years	- > 10 years	< or = 2 years	- 2 > or = 5 years	- 5 > or = 10 years	- > 10 years
Austria	1569	1576	2673	4100	1639	2050	2690	3029	1524	1960	2924	2893
Belgium	1662	2620	3900	6540	1529	2887	3974	6938	..	..	..	..
Croatia	197	370	891	3179	502	322	887	3100	562	392	956	2921
Cyprus	331	448	702	1468	172	493	691	1843	129	426	751	1911
Czech Republic	1437	2262	3138	11422	1830	2523	3777	11818	..	..	..	..
Denmark	2406	2112	5955	3495	2095	2316	3874	5906	..	..	..	..
Estonia	134	279	868	4778	183	269	603	4358	155	285	541	4213
Finland	1102	1487	1604	5618	998	1565	2772	5341	958	1481	3015	5424
France	10170	12173	20245	43161	10549	16690	21206	39972	10744	17000	21598	40713
Germany	12544	16683	28949	28480	10901	17203	24472	32932	10558	16400	24747	32199
Hungary	1449	1467	2475	12464	1684	2634	2914	10150	1588	2567	3368	9927
Iceland	362	173	368	772	374	335	234	819	218	237	449	995
Latvia	591	611	1888	8717	443	768	1282	8558	397	720	1431	8418
Lithuania	354	728	2230	12231	471	465	867	13050	726	666	1461	12458
Netherlands	1503	1701	3192	4978	1836	2332	2636	4420	..	..	..	..
Norway	3549	8910	14994	9233	1783	3384	13701	11724	2132	2835	11727	12089
Poland	..	..	..	..	5990	6719	10844	59292	3658	5644	13390	57483
Republic of Moldova	171	..	1423	4040	522	928	7458	11204	..	..	..	..
Spain	10807	8666	11931	23328	6338	10528	13280	25797	7737	9720	16056	24735
Sweden	2764	3185	3442	5026	2438	3514	4714	2697	..	..	..	..
Switzerland	4435	5966	9740	20119	5582	7599	9472	22131	5400	8012	9828	22545
The former Yugoslav Republic of Macedonia	83	149	216	2050	..	..	..	..	27	103	397	1742
United Kingdom	26455	39529	45236	61345	27058	35223	61107	54271	..	..	..	..

Source: UNECE Transport Division Database.

Table 5
Length of Road Network 2005 (km)

Countries	Motorways	Main or national roads	Secondary or regional roads	Other roads*
BE	1 747	12 585	1 349	136 559
BG	331	2 969	4 012	11 976
CZ	564	6 154	48 792	72 300
DK	1 032	641	9 690	60 894
DE	12 363	40 983	178 134	
EE	99	3 933	12 438	40 546
IE	247	5 168	11 645	79 447
EL	880	10 189	30 864	75 600
ES	11 432	13 983	140 231	
FR	10 804	25 182	359 957	610 000
IT	6 542	21 524	147 364	
CY	276	2 416	1 864	3 289
LV	0	6 949	13 233	49 647
LT	417	1 333	19 578	58 169
LU	147	837	1 891	
HU	636	6 556	23 490	158 760
MT	0	184	0	2 043
NL	2 342	2 836	7 743	121 297
AT	1 677	10 566	23 685	71 059
PL	552	18 254	28 406	206 569
PT	2 341	8 161	4 500	63 880
RO	228	15 705	63 970	
SI	569	972	4 853	32 091
SK	328	17 500	25 917	
FI	693	12 580	13 480	51 436
SE	1 684	15 353	82 958	325 388
UK	3 634	48 927	122 228	238 144
HR	792	6 725	10 544	10 375
MK	208	698	3 806	8 566
TR	1 775	31 371	30 568	285 632
IS	-	4 265	3 965	4 799
NO	270	27 274	27 048	38 541
CH	1 361	398	18 094	51 446

Source: DG TREN Energy & Transport in figures: Statistical pocketbook 2007/2008.

Notes: The definition of road types varies from country to country; the data are therefore not comparable. “Other roads” sometimes includes roads without a hard surface.

Table 6

Annual enterprise statistics, activities I6021 to I6023, 2006 (NACE Rev.1.1)

	Number of enterprises	Turnover (million €)	Number of persons employed
European Union (27 countries)	329 782	91 000.0	c
Belgium	2 069	1 816.4	33 306
Bulgaria	7 051	c	c
Czech Republic	9 258	885.6	46 848
Denmark	3 719	2 427.5	30 973
Germany	24 227	14 927.2	292 406
Estonia	233	101.8	6 131
Ireland	341	605.8	8 493
Greece	35 063	2 445.6	76 675
Spain	65 600	7 937.8	171 274
France	36 319	14 938.1	219 964
Italy	22 997	6 919.0	150 820
Latvia	696	158.2	14 842
Lithuania	1 247	247.5	18 632
Luxembourg	172	155.2	2 688
Hungary	9 232	1 062.0	53 026
Netherlands	4 470	2 848.1	c
Austria	4 918	3 175.5	47 271
Poland	47 789	2 874.9	148 702
Portugal	11 765	1 222.8	37 034
Romania	8 841	1 021.7	85 053
Slovenia	888	185.1	c
Slovakia	128	266.3	14 827
Finland	9 158	1 685.4	25 460
Sweden	9 122	5 585.1	58 826
United Kingdom	12 045	17 038.1	221 996
Norway	6 427	2 144.5	33 274

Source: Eurostat (20.02.2009)

Note: "c" stands for "confidential"
