

Community database on Accidents on the Roads in Europe (CARE) and the European Road Safety Observatory (ERSO)

The European Union Council decided on 30 November 1993 the creation of a Community database on road accidents (Council Decision 93/704/EC). This database known as CARE – (**C**ommunity database on **A**ccidents on the **R**oads in **E**urope) has as a main goal to identify and quantify road safety problems, evaluate the efficiency of road safety measures, determine the relevance of Community actions and facilitate the exchange of experience in this field. In 2003 EU introduced the European road safety action programme - Halving the number of road accident victims in the European Union by 2010: a shared responsibility, which among others proposed the establishment of the **E**uropean **R**oad **S**afety **O**bservatory (ERSO). The creation of a common independent gateway that will bring together EU accident and injury safety data as well as road safety information and support activities is the primary challenge of the ERSO.

The CARE database is considered today as the only existing disaggregated pan-European accident data set. At its original version it was comprised by the road accident data bases of the 15 EU member states. This European Community database has steadily grown within the period 2004-2008, within the framework of the co-funded SafetyNet EU Project, by progressively incorporating road accident data from 12 new EU member states (plus Norway and Switzerland).

The major difference and advantage of CARE in conjunction with other existing international databases is the high level of disaggregation, i.e. CARE comprises detailed data on individual accidents as collected by the Member States. This structure allows for maximum flexibility and potential with regard to analysing the information contained in the system and opens up a whole set of new possibilities in the field of accident analysis.

National data sets should be integrated into the CARE database in their original national structure and definitions, with confidential data blanked out. The Commission provides a framework of transformation rules allowing CARE to provide compatible data. CARE is developed as a Community database on road accidents resulting in death or injury (no statistics on damage - only accidents). In 2004, road accident data for only 14 EU Member States was available in CARE and only 22 variables (from CAREPLUS 1) could be used, along with the related values. Within the next years, more variables and values from CAREPLUS 2 (42 in total) were progressively available in CARE. The major effort in integration of the various national accident databases to CARE is by improving the compatibility of dataset. In case there is no match between the definition of variables of CARE and some Member State's (National databases) variables a transformation rule is applied.

At present, access to the CARE accident database of the European Commission is limited to three officially nominated organizations or bodies in each EU

Member State, usually being National Governmental Authorities, Universities or Research Institutes. The organizations that have the privilege of access can perform queries on the CARE database. However, some static reports (Annual Statistical Reports, Annual Basic Fact Sheets etc) based on data derived from CARE are available on the CARE website. A very important part is to make all these outputs available to end users. This will be achieved by publishing them on the European Road Safety Observatory- ERSO website (www.erso.eu), which was developed by the SafetyNet project. Additionally, these deliverables have also been published on the CARE public website of the European Commission.

International comparisons are frequently best conducted using risk evaluations rather than numeric accident comparisons. In this field the SafetyNet programme made a step forward by incorporating to ERSO Risk Exposure Data (RED). The Risk Exposure Data that were developed included: population, length of road network, vehicle fleet, drivers population vehicle x kilometres etc. This data were used in combination with the CARE accident data allowing for more accurate comparisons among countries.

Road Safety Performance Indicators (RSPI) is another form of comparison between countries, which was established within ERSO framework, similar to SUNflower methodology. Among others indicators included measurements of seatbelt usage rates, road speeds, alcohol and drugs in drivers etc.

CARE and ERSO are very helpful for Member States by guiding them to improve their national accident data bases and maintain them in good standards beside of course the scientific advantages. One of the late developments in SafetyNet programme was the proposal for a common road accident collection set based in CARE, but the introduction of this set is not binding. The set is known as CADaS (**C**ommon **A**ccident **D**ata **S**et). The main goal of this set is to improve compatibility of road accident data throughout Europe. The introduction of a common dataset can eliminate the need for extensive efforts in harmonization among Member States and standardize CARE. CADaS is defining the minimum need for standardized data elements for establishing a common accident data base. One of the main advantages of CADaS is its flexibility by making it possible for countries to adopt CADaS proposals in pieces ("a la carte"). CADaS is structured in a simple way without levels of hierarchy and its variables are divided in four distinctive categories: Accident, Road, Traffic Unit and Person (73 variables and 471 values).

Another recent development was the potential use of spatial data information from CARE data base. The use of Geographical Information Systems (GIS), can transform CARE to a real friendly-use data base and allow spatial analysis.

On International level (apart from EC) harmonisation of accident data at national level could be very beneficial for road accident analysis (see appendix for Assessment of International Road Accident Data files). This can be achieved by

establishing a common road accident collection set and methodology. Nowadays the only figures that could be considered comparable at international level are those referring to fatal accidents, since only these are considered reliable and have common definition. Figures relating to accidents and injuries cannot be considered neither reliable nor comparable at international level, due to different definitions used as well as underreporting.

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Sources:

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Appendix

Assessment of International Road Accident Data Bases

(Source: [1], 2004 reviewed)

FARS system- United States of America

The National Centre for Statistics and Analysis (NCSA) is an office of the National Highway Traffic Safety Administration (NHTSA), an agency in the Department of Transportation. NCSA is responsible for providing a wide range of analytical and statistical support to NHTSA and the highway safety community at large. The major data sources are NCSA's own Fatal Accident Reporting System (FARS) and the National Accident Sampling System (NASS). FARS was established in 1975.

The **Fatal Accident Reporting System** (FARS) of the United States of America contains data on all fatal road accidents within the 50 states, the District of Columbia, and Puerto Rico. The data system was to assist the traffic safety community in identifying traffic safety problems, developing and implementing vehicle and driver countermeasures, and evaluating motor vehicle safety standards and highway safety initiatives.

Data on fatal road accidents are gathered from the state's own source documents, and are coded on standard FARS forms and transferred electronically to the central FARS data base. The analysts obtain the documents needed to complete the FARS forms from various sources including the Police Accident Reports (PARS), State vehicle registration files, State driver licensing files, State Highway Department data, Vital Statistics, Death certificates, Coroner/Medical examiner reports, Hospital medical records, Emergency medical service reports.

The FARS file contains descriptions of each fatal accident reported. Each case has 125 different coded data elements (variables) that characterise the accident, the vehicles, and the people involved, containing more than 3.200 values (1.200 concern car industry).

FARS output services comprise a road accident statistics' yearbook, some Fact Sheets, a CD-ROM version containing reports and original data based on FARS and NASS-GES systems, and on-line access to the Fact Sheets and other information via the FARS Website at: <http://www-fars.nhtsa.dot.gov/>.

IRTAD Database- OECD Countries

IRTAD is an international database developed by OECD. It operates within the framework of the OECD Road Transport and Intermodal Linkages Research (RTR) Program, with BASt (Bundesanstalt für Straßenwesen) acting as database host and administrator. Most OECD countries are represented by national coordinating centers. IRTAD participation is also open to non-OECD countries.

IRTAD gathers data on traffic and road accidents from 28 out of the 30 OECD Member countries. The main part of the database, with 240 variables, includes aggregated data on injury accidents, road fatalities, vehicle population, network length, vehicle kilometrage. However, only 6 accident variables with 3 road safety units and 17 indices

are common for all OECD countries, providing 44 values. The results of data analysis are aggregated.

This information is available only to OECD Members, which are obliged to pay annual subscription. Apart from the two-page summary statistics publication available to everybody free of charge, IRTAD members receive twice per year updated statistics in off-line electronic form (disks) and have all year long on-line access to all statistics Tables (www.oecd.org).

ECMT Database

The European Conference of Ministers of Transport (ECMT) maintains a European road accident data file mainly for supporting political decisions within the framework of its activities. An annual publication with few but very interesting road accident statistics (2 variables containing 9 values in 16 Tables) concerning 41 ECMT Member countries, 5 associate countries (Australia, Canada, Japan, New-Zealand, USA), and 1 observer country (Morocco). This publication is available to everybody at a low price (www.oecd.org/cem).

UN - ECE Database

The Economic Commission for Europe of the United Nations (UN-ECE) issues an annual publication with an important number of road accident statistics (11 variables containing 57 values in 6 Tables) concerning 53 European countries. At the UN-ECE webpage (www.un.org) very interesting aggregated accident statistics can be found by age, road network and type of person for all countries (Tables and Figures).

WHO Database

The World Health Organisation (WHO) maintains a huge disaggregate data base on persons killed throughout the world (192 countries of which 50 in Europe) in which the cause (primary and secondary) of death is mentioned. One of the death cause categories is the road accident; disaggregate information for 5 variables containing more than 300 values, is available. A large number of values (more than 150) concern the road accident type. Information about every person killed in road accidents is correct but not always as detailed as supposed to be. The WHO issues an annual publication which is available to everybody. Pre-defined aggregate parts of the data base are available free of charge via Internet. For some special cases, access to disaggregate data is permitted under specific conditions. At the website of WHO (www.who.org) online queries concerning number of fatalities by death cause, by year, by age, and by country can be applied by users, allowing for aggregated statistical outputs.

IRF Database

The International Road Federation (IRF) is a non-governmental organisation issuing an annual publication on road transport statistics comprising also road accident statistics (8 variables in 1 Table) concerning more than 185 countries. This publication is free for the IRF members but is also available to everybody by purchasing it. (www.irfnet.org).

EC - EUROSTAT Database

The EC-Eurostat issues annually a transport statistics publication containing also information about road accidents (6 Tables containing 5 variables and 22 values). In the future, this publication will be introduced in the electronic services of the Eurostat for on-line and off-line consultation of the pre-defined Tables (www.europa.eu.int).

RSQI Database

The Road Safety Quick Indicator (RSQI) is an initiative of the Directorate General for Transport of the European Commission aiming to provide very recent trends on basic road accident numbers (number of accidents, persons killed and injured) based on provisional data. An eight-page publication is distributed only to the fifteen national administrations. This data file concerns trends only, over-passing thus data incomparability problems. On average, complete trends are available within five months after the end of the period concerned (www.europa.eu.int).