

## Transport and road accidents

The transport sector represents a complex framework, due to both its size and the wide range of themes (infrastructures, stock of vehicles, traffic of passengers and goods, safety) and the number of bodies involved, since the administrative responsibility is allocated among various institutions: the Ministry of Infrastructure and Transport, Regions, Provinces, Municipalities, etc. Moreover, the responsibility for transport statistics is not exclusively assigned to Istat: other institutions such as the relevant Ministry and the *Ferrovie dello Stato* (Italian State Railways group) have a strong and consolidated tradition in implementing statistics and provide indicators of considerable interest.

The *Maritime transport survey* is one of the oldest. The importance of the transport sector in the development of the country led to the awareness of the necessity to collect information in this field as early as the 19<sup>th</sup> century. The first figures, although still not a systematic collection of information, were acquired by the Ministry of Navy and later on by the Ministry of Finance. The figures on the rail network also date back to the early 1800s, while information on air transport began in the 1920s. All three areas have always been studied through census surveys, supported by the active participation of the various institutions involved in addition to the contribution made by Istat.

Information on transport performs an important function at European level, also due to the role that EU institutions play today in establishing policies in the sector. For this reason, in recent years statistics were regulated in a very detailed manner by European legislation, to ensure the necessary comparability between the information received from the Member States. Eurostat (the statistical office of the European Commission) specifies the primary demand for statistics on the flow of goods and passengers and obliges each Member State to produce and transmit the related data according to precise deadlines and quality standards.

The need to meet the obligations associated with the evolution of the European regulatory framework resulted in the launch of a process of deep transformation in transport statistics which led to the revision of the survey on road freight transport, the implementation of a new survey on air transport and the launch, in 2004, of a new survey on rail transport.

The tables presented in this section cover, as far as possible, the entire period from the end of the 19<sup>th</sup> century. With regard to transport over land, figures are presented on the composition and characteristics of infrastructures (road and rail network), number of vehicles, rail traffic for passengers and goods and road accidents. Regarding transport by sea, in addition to the size of the mercantile fleet the section describes the movement of ships, passengers and goods carried. Air transport is represented, as usual, in terms of arrivals and departures of aircraft, passengers and goods. Information on daily commuting for study or work, obtained from census and sample surveys, is also included.

### Land transport

The first figures relating to the rail network and the quantity of rolling stock date back to 1839. From 1867 onwards, the figures were produced by the *Commissariato Generale delle strade ferrate*, a department of the Ministry of Public Works, which published an *Italian railroad report*. Both the publication and the department itself changed name in the meantime, but the survey remained in charge of the Ministry of Public Works.

In 1905, the survey was in charge of *Ferrovie dello Stato* founded in the same year, which published a *Report on the performance of the Administration of Ferrovie dello Stato*. Rail network in that period included both the rail lines managed by *Ferrovie dello Stato* and by railways under concession agreement. Today, these lines represent respectively the national and regional rail networks. Prior to 1905 data were reported according to the breakdown between *Ferrovie dello Stato* and Railways under concession agreement, as it appeared in 1905.

In 1986 *Ferrovie dello Stato* became a public institution and since then it has provided information only on

the standard-gauge network, as no narrow-gauge lines were run after that date.

Figures on the rail network managed by Railways under concession agreement were provided by the Ministry of Transport (Ministry of Infrastructure and Transport from 1993); until 1980 the figures were collected by the Directorate-General for Road Traffic and Privately Operated Transport Services through a direct survey of "Public transport services in concession"; from 1980 to 1998, by the Directorate-general for Planning, Organisation and Coordination (POC) with a direct survey on Railways under concession agreement; since 1998, by the Statistics office of the Directorate-general of information, statistics and communication systems, through a direct survey of private concession railways. The figures on the rolling stock, however, have been provided since 1921 by the *Azienda autonoma ferrovie dello Stato* which became *Ente Ferrovie dello Stato* (State Railways Body) in 1985 and *Ferrovie dello Stato Spa* in 1992.

Regarding the road network, the figures for the period 1938-1984 were provided by ANAS (Italian National Autonomous Roads Corporation) and the Ministry of Public Works, which collected data on non-urban roads from Italian local authorities acting on behalf of Istat. From 1985 to 2001, the figures related to motorways owned by private operators (under concession contract) were provided by AISCAT, ANAS (for state highways) and the Ministry of Transport (for provincial roads). Since 2002 the figures on provincial roads have also included those for regional roads, following Legislative Decree no.112 dated 31<sup>st</sup> March 1998<sup>1</sup>, which is still being implemented, and which establishes the transfer of trunk road and motorways from state management to regional authorities, or in turn, by Regional legislation, to local authorities.

Information on motor vehicles, on the other hand, has always been provided by the Automobile club d'Italia (Italian Automobile Club, ACI), which manages the Public Motor Vehicle Register (PRA). Although the first motor vehicles date back to 1900, statistical information on those subject to vehicle excise duties is only available from 1914 onwards. In 1926, ACI changed its name to *Reale automobile club d'Italia* (Royal Italian Automobile Club - RACI) in consideration of the high patronage of King Vittorio Emanuele III, together with Benito Mussolini. After the adoption of the Constitution of the Republic in 1950, the club returned to its original name (ACI).

The figures refer to all motor vehicles subject to excise duties in any period of each year. Vehicles with special plates, such as those in the *Gestione raggruppamento autocarri* (GRA - State-owned truck pool Management Company) and the National Institute of Transport (INT), those equipped for mail transport or public transport and those who evade paying the excise duties for whatever reason are therefore excluded.

In 1983 excise duties became a tax on vehicle ownership, and the responsibility for collection, assessment, recovery, repayment and administrative cases (following Legislative Decree no. 504 dated 30<sup>th</sup> December 1992) passed to regional authorities, although only with effect since 1<sup>st</sup> January 1999.

### *Warnings for time series comparisons*

- In 1959 three-wheeled trucks, which were previously classed among trucks, were included with motorcycles.
- Up until 1984, the figures on motor vehicles, provided by the Italian Automobile Club (ACI), refer to vehicles paying excise duties; therefore, those for which no excise duties were paid for whatever reason are not included. In 1983 the duties became a tax on vehicle ownership, becoming a regional automobile tax with Legislative Decree no. 504 dated 30<sup>th</sup> December 1992, effective since 1993; the responsibility for collecting, assessing, recovering, repaying and managing administrative cases for these taxes only passed to regional authorities on 01<sup>st</sup> January 1999. The regional automobile tax applies to both vehicles registered with the Public Motor Vehicle Register (PRA) and on those not required to register, for example mopeds.
- Since 1985, the figures on motorcycles have not included mopeds.
- Up until 1994, the figures on the rolling stock were according to inventories. Since 1995, they have referred to the rolling stock actually available in each reference year.
- In 2002, the figures referring to part of trunk road were attributed to provincial roads, following the introduction of Law no. 59 dated 15<sup>th</sup> March 1997 and Legislative Decree no. 112 dated 31<sup>st</sup> March 1998 on the transfer of responsibility for road network management and administration to local authorities.

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<sup>1</sup> Legislative Decree no. 112 dated 31<sup>st</sup> March 1998 "Transfer of administrative functions and duties from the State to the Regions and Local Authorities, in implementation of title I of Law no. 59 dated 15<sup>th</sup> March 1997".

## Travel to school, university or workplace

Information on children of crèche, preschool, students and employed who leave home to travel to crèche, school, university or work are collected both in the multipurpose sample survey entitled “Aspects of daily life” and in the General population census. The survey “Aspects of daily life”, performed annually from 1993 onwards is part of the system of multipurpose household surveys, a coherent data collection system designed to monitor the main social phenomena systematically.<sup>2</sup> The survey in question is generally performed in the last two weeks of November, but since 2005, the survey calendar has been modified, moving the survey period to January-February each year.

The figures on commuting to school or workplace from census data have been available since 1971, thanks to the introduction of a specific section in the questionnaire dedicated to commuting for study or working purposes by the population that commutes daily from their place of usual residence.<sup>3</sup> The items on commuting represent one of the novelties of the 1971 census. In fact, at European level, the interest in commuting began to be shown and, following international recommendations, information on place of work, or the place in which employed persons carry out their working activities, on the transport means used and the time needed to arrive at work or school was collected during the census. These figures, when compared with the addresses of the place of work or study, guaranteed the acquisition of information on the movements of workers and students never before drawn from census data.<sup>4</sup> The following census also required information regarding the time when lessons or work began. Ten years later, a specific section for codifying the census area of the place of work or study was introduced in the questionnaire. Since this was not an obligatory field, only some municipalities, with the prior authorisation of Istat, collected additional information on the travel of those usually residing within their territory. Once again, in 2001, the figures on commuting were among the most eagerly awaited. The construction of the matrix for inter-municipal mobility and the definition of Local Work Systems made the collection of information on daily commuting for study or working purposes become crucial.<sup>5</sup>

The range of topics set in the 15<sup>th</sup> General population census was close to that already tested in 2001, with the exception of the item on the time needed to go to the place of work or study, which requires a detailed indication of the travelling time in minutes (in 2001 5 classes of time intervals were provided) and a different position of the question on the place of study or work, directed in 2011 to all people who study or work and not only to commuters, in line with what required by Eu regulations. In contrast to 2001, the address of the place of study or work was acquired through optical reading to make *a posteriori* geocoding of the census tract possible.

The tables presented in this section refer to the transport means used for commuting. Please note that the results obtained from the multipurpose survey are not directly comparable with those derived from censuses. In addition to the differences due to the nature of the two surveys, the main reason for the difference is the method adopted to collect data on the transport means used: in censuses the respondent indicates the main transport means used in terms of distance travelled, while in the multipurpose survey it is possible to indicate all forms of transport used for a single journey. From this point of view, the difference between the two sources has increased over time, as the figures drawn from the multipurpose survey show a growing tendency to use a combination of several transport means for journeys to school or work.

## Road accidents

The survey concerning road accidents, launched on 01<sup>st</sup> January 1934 by RACI (Royal Italian Automobile Club) was performed without interruptions until 1942, when it was suspended due to the war. After the war, in 1948, a specific commission was set up by the Italian National Statistical Institute to review the statistics on road accidents, with the aim of initiating a new survey, which began in 1949. Since that year, Istat has collected statistical information on road accidents, with the collaboration of ACI, through a monthly survey of the entire range of road accidents on the national territory. When the new survey began it was not possible to acquire a complete range of information, and the data series published here

<sup>2</sup> For information on the “Aspects of daily life” multipurpose survey, please refer to: [Households](#).

<sup>3</sup> For information on General population censuses, please refer to: Population.

<sup>4</sup> Please note that for the 1971 census the figures relating to mobility refer to the results of a sample of 20% of census forms, while in the following ones figures relate to the total number of forms collected.

<sup>5</sup> For further information on the census contents, see Mastroluca S., Verrascina M., *L'evoluzione dei contenuti informativi del censimento della popolazione*, in “I censimenti nell'Italia unita. Le fonti di stato della popolazione tra il XIX e il XXI secolo”, Istat. 2012. Annali di statistica, serie XII, vol. 2, anno 141. Roma: Istat.

therefore run since 1952.

The survey on road accident is a complex process, the result of the joint activity of several institutions: Istat, ACI, the Ministry of the Interiors, Traffic Police, *Carabinieri* Local Police and the Municipal statistical offices of provincial Capitals. Since 2007 some statistical Offices have also participated in the survey from some Regions and Provinces that have signed specific agreements with Istat for the decentralisation of data collection processes, the checking of coverage and the subsequent submission of the computerised data to Istat.

Following the signing in December 2007 of the first “Memorandum of Understanding for the coordination of activities for the statistical survey on road accidents” between Istat, the Ministry of the Interiors, the Ministry of Defence, the Ministry of Transport, the Conference of autonomous Regions and Provinces, the Union of Italian Provinces and the national Association of Italian Municipalities, some Regions,<sup>6</sup> represented by the competent statistical Office, adhered to an experimental decentralisation to local authorities of the collection and monitoring of information on road accidents in the relevant territories.

The survey’s field of observation is formed by the entire range of road accidents reported to a police authority, taking place on the national territory during the course of a calendar year, which caused injuries to people (deaths within 30 days or injuries). The survey has been restructured several times, most recently in 1991, when Istat adapted the definition of road accident to international definitions, interrupting the recording of road accidents that do not result in damage to people (with consequent reduction of the amount of work for the public Authorities responsible for data collection). Since 1991, therefore, the field of observation has covered all road accidents that happened on roads or squares open to traffic in which standing or moving vehicles (or animals) were involved and which resulted in injuries to people. This definition does however exclude collisions which did not result in injury to people (those that did not take place in areas open to public traffic, i.e. in areas such as courtyards, service stations, vehicle deposits, railways or areas exclusively reserved for tram or rail transport, etc.) and collisions in which vehicles were not involved.

The survey unit is the single road accident; the units of analysis are road accidents and the vehicles, with their specific technical characteristics, and the people involved in the accident (deaths or injuries). The survey refers to the moment in which the accident took place. Information regarding details of the accident, its causes or relevant circumstances, in addition to the consequences for people and objects involved, are therefore collected with reference to that moment. The survey is carried out once the authority that dealt with the event, such as Traffic Police, *Carabinieri* or Municipal Police has compiled the Istat Ctt/Inc form (or sent the file containing the information required). The main variables recorded are the date and place of the accident, the public authority recording the event, the area or location of the accident (if in a town centre or outside the inhabited area), a description of the accident, the type of vehicles involved, the circumstances which caused the accident and the consequences to people or vehicles.

### *Warnings for time series comparisons*

- Since 1991, Istat has harmonised the concept of road accident to international definitions. Therefore, the recording of accidents that do not result in damage to people was suspended. In comparing results over time, a fall in the number of accidents should therefore be taken into consideration following the exclusion of accidents without injuries.
- On 01<sup>st</sup> January 1999, Istat extended the period necessary for counting fatalities from seven to thirty days. The rise in the number of fatalities recorded in the years immediately following 1998 is therefore affected by this widening of the window of time in the definition.

## **Maritime transports**

In the period 1861-1868, maritime statistics were entrusted to the Ministry of the Royal Navy. Later, up to 1880, these duties were performed by the General Statistical Division of the Ministry of Agriculture, Industry and Commerce. From 1881 to 1935, they were taken over by the Ministry of Finance, while since 1935 Istat has been responsible for conducting the survey of maritime transport.

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<sup>6</sup> The following Regions adhered: Piemonte, Lombardia, Emilia-Romagna, Toscana, Puglia, Friuli-Venezia Giulia Veneto, Liguria, Calabria and the autonomous provinces of Bolzano and Trento. In the regions of Umbria, Campania, Basilicata and Marche data collection, survey monitoring and surveyor training are conducted by local Istat offices.

The survey is a census covering the arrivals and departures of ships and the movement of goods and passengers embarked and disembarked from Italian ports to Italian and foreign ports. Since 1947, the figures have been collected using a paper form, and Istat relies on collaboration with the Customs Authorities and Harbourmaster's Offices to conduct the survey.

The organisation of the survey was slightly modified over the years, despite the changes in the field of observation and the variables in analysis and classification; the survey forms, in fact, have been adapted to extend or eliminate information deriving from changes in technology and the economy, associated with the type of ship and goods together with the methods of goods packing. The questionnaires are sent annually by Istat to Customs offices in the various ports, which distribute them to the respondents (ship captains, shipping agents, forwarding agents and carriers), who compile the statistical declaration for each arrival or departure (forms I.501 and I.502 respectively) which is then returned to the local customs authorities who collect the data and submit them to Istat each month for checking. The figures collected are subject to validation and checking procedures that, since 2000, are performed in compliance with Eu statistical methodology. In fact, in 2000 the survey was restructured to adapt it to European Directive EC/64/95 concerning maritime transport, which defines the guidelines for standardisation of information collected in Eu Member States in order to establish a detailed and reliable starting information allowing comparison between Member States. Since 2013, the maritime transport survey has profited from an online data collection through an acquisition website for the uploading of e-questionnaires.

Regarding the field of observation, since 2000 this form is composed by "navigation for commercial operations", i.e. the movement of goods and passengers ships in transit on Italian ports, on routes travelled partially or entirely by sea, under payment of passage or by hire. Before 2000, "navigation for large-scale fishing", "recreational boating" and "navigation for other services" were also included in the field of observation, which also covered recreational boats such as sailing vessels, later excluded due to the small number of commercial movements performed by this type of ship. In 2000 fishing boats and factory ships used for processing fish, drilling and exploration vessels, tugboats (unless barge-carriers), push-boats and dredgers, research and exploration vessels, military ships and all embarkations used exclusively for non-commercial purposes were also excluded. In 1997, on the other hand, ferries and hydrofoils to and from Reggio Calabria-Villa San Giovanni and Messina were included for the first time.

The survey unit, however, has always remained the ship, or any construction suitable for maritime transport, equipped with its own methods of propulsion, meeting the crew and equipment requirements and provided with the documents necessary for navigation.

The figures on the size and tonnage of the sea-going ships (mercantile fleet) are provided by the Ministry of Infrastructure and Transport, which collects the information through Harbourmaster's Offices, belonging to the former Ministry of Merchant Shipping, which became part of the current Ministry in 1993.

#### *Warnings for time series comparisons*

- Since 1939 the tonnage of the mercantile fleet provided by the former Ministry of Merchant Shipping, has referred to the gross tonnage, while up until 1938 it referred to net tonnage.
- In the years 1943-1945 Istat suspended the survey on maritime transport due to the war. The former Ministry of Merchant Shipping also suspended all surveys for the same reason in the years 1943-1944.
- Since 1997, ferries and hydrofoils operating in the Messina straits (Villa San Giovanni-Messina, Messina-Villa San Giovanni) were included in the survey. This extension caused a considerable rise in the number of journeys and passengers recorded in coastal shipping.
- Up to 2000 "navigation for large-scale fishing", "recreational boating" and "navigation for other services" were included in the field of observation, and were excluded after this date.
- Since 2000, coastal shipping (national ports of origin and destination) was measured using a method of data check that allowed identification and correction of many missing responses with a consequent rise in the number of journeys and passengers and the quantities recorded.
- Since 2005, the tonnage of ships for inward flows published by Istat has referred to gross tonnage, while before this date the figures referred to net tonnage; since the same year, Istat has used the Lloyd's international register, which uses international standards to define tonnage, for assigning gross tonnage to the ships arrived; therefore, the "tonnage" variable presents higher values from this date onwards.

## Air transport

The survey on air transport records the movements of Italian and foreign aircraft within national airports and the relative load carried (passengers, goods and airmail). Up until 1959, the survey was performed by the Ministry of Defence and Italian Air Force in collaboration with the statistics offices in the individual civil aviation airports and border police offices. In the years from 1960 to 1996, Istat conducted the survey in collaboration with the Ministry of Transport; in the years from 1987 to 1996, the Institute also relied on the collaboration of *Civilavia*. The figures published by Istat for the years 1997-1999 were provided by ENAC (1999), *Civilavia* (1998), *Civilavia* and *Alitalia* (1997).

Since the year 2000, Istat has performed the survey on air transport in compliance with the guidelines set out in European Regulation EC/437/2003. The survey is conducted in collaboration with the Italian Civil Aviation Authority (ENAC) in all commercial airports, while the field of observation included airports with at least 15,000 passenger units per year.

The survey is conducted as a census and collects information on the transport of passengers, goods and airmail, flight stages, seats available and the movement of aircrafts. In particular, it refers to the movements of commercial civil aviation, scheduled and charter flights (charter and air taxi services), and movements of general commercial aviation (aerial photography, publicity and air-ambulance services, etc.) and to the movements of non-commercial general aviation (private, training or positioning flights, etc.). State flights are not included in the field of observation. The unit of measurement is individual airports. The survey is conducted on a monthly basis. Since 2000, the figures have been provided by the airport management companies online, using the methods indicated by Istat. The information collected are validated, in compliance with the statistical methodology defined and agreed within the Eu.

The units of analysis are the goods and airmail transported on board, the movements of aircrafts, the passengers transported from Italian airports to Italian or foreign airports. Since 1999 the figures on goods provided by airport management companies have not recorded data relating to airmail separately, including these in the total goods transported per aircraft; data on airmail, therefore, are only estimated from 2000 onwards.

### *Warnings for time series comparisons*

- International air services began in 1928.
- From 1933 to 1939, aircraft movement and traffic in Eastern African airports were included in the survey.
- The survey was suspended in the years 1940-1946 due to the war.
- For the year 1947, the figures only refer to the period from April to December.
- From 1947 to 1950, the figures cover both commercial and non-commercial between airports and local flights.
- From 01<sup>st</sup> June 1951 to 30<sup>th</sup> June 1952, the figures only refer to flights between airports (commercial and non-commercial); while from 01<sup>st</sup> July 1952, the figures only cover commercial traffic.
- Since 1952, the figures on passengers, baggage and goods have included both paid and unpaid transport. Since the same year, airmail has also included newspapers.
- Since 1956, goods have also included baggage.
- Since 1999, the figures on goods provided by the airport management companies have not made any distinction between figures for airmail, which is included in total goods transported per aircraft. The figures recorded after that date are therefore estimates.