
Copenhagen Airports
CPH
COPENHAGEN
CPH
2003
COPENHAGEN
AIRPORTS A/S
ENVIRONMENTAL
REPORT 2003

Contents

Management statement

With 17.7 million passengers in 2003, Copenhagen Airport retained its position as Scandinavia's largest airport. The total number of passengers, however, fell by 3.1% compared with 2002. The decline was mainly seen in the number of passengers in domestic traffic and international charter traffic. The total number of takeoffs and landings fell by 3.0% in the same period. The fall in the number of operations has contributed to a significant reduction in total noise impact originating in airport activities in 2003 compared with 2002. The decline in noise impact is also due to the out-phasing by cargo airlines of the most noisy aircraft types, which are typically used at night.

In order to limit noise in residential areas northwest of Copenhagen Airport, use of the crossing runway (12-30) is banned at night-time. Shortly after New Year 2003, some 1,000 passengers had to stay overnight at the airport as a result of this ban, since an extraordinary winter situation made it impossible for aircraft to take off from the two main runways. Responding to a request from Copenhagen Airports A/S (CPH), the Danish Transport Ministry in July 2003 authorised CPH to dispense from the ban in extreme situations so that, exceptionally, the crossing runway can be used at night under sudden, critical weather conditions.

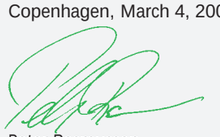
In 2003, CPH and the National Environmental Research Institute implemented a study of obnoxious smells in the airport surroundings. The study found that deviations occasionally occur from a recommended threshold value for smells up to three kilometres from the airport. The impact of obnoxious smells from aircraft is assumed to be lower than previously due to aircraft engine improvements in recent years. This development is expected to continue.

CPH in 2002 adopted an energy policy aimed at reducing energy consumption over a three-year period by 10% compared with the 2001 level. The goal has been achieved after only two years. The significant reduction in energy consumption is attributed to increased consumption control and increased focus on stricter management of adjustable plants.

In 2003, CPH initiated an Environmental Impact Assessment (EIA) study in order to meet increasing interest in traffic out of Roskilde Airport. As the planning authority, The Greater Copenhagen Authority (HUR) implements the study. HUR expects to adopt an amendment to the regional plan that includes the EIA report in the middle of 2005.

The 2003 Environmental Report contains an auditors' statement that is included at the end of the report.

Copenhagen, March 4, 2004



Peter Rasmussen
Deputy Chief Executive Officer

Environment in CPH

The environmental impact of an airport

The special characteristic of an airport is the union of passengers and aircraft. This union releases a chain of activities that may affect the environment.

Aircraft arriving at the airport emit noise and affect air quality. Once an aircraft is parked at a stand, it needs to be emptied of passengers, luggage and cargo and then cleaned. While the aircraft waits for the next departure, an entire range of activities takes place. Several facilities, including maintenance and engine testing units, take care of these activities.

Prior to departure, passengers board, luggage is loaded, and the aircraft is fuelled. Under certain meteorological conditions it is necessary to de-ice the aircraft prior to takeoff since ice formation on the aircraft has an impact on manoeuvrability and increases the weight of the aircraft. The aircraft activities may involve noise and impact on air quality, soil and water.

Maintenance of the three runways, aprons and other airport areas requires a series of activities that have an impact on the environment. The runway system must be maintained and cleared of ice and snow in the winter. Grass-covered areas must be nursed and pavements must be cleaned.

The airport also has numerous technical plants that may affect the environment. These plants include storage for aircraft fuel, maintenance facilities, energy supply for runway lights and a location for fire drills. The activities can impact on air, soil and water quality.

The terminals are the hub of a series of activities which take place between the arrival and departure of passen-

The relationship between CPH and other companies at the airport

Aircraft activities	Runway activities	Terminal activities
Takeoff and landing, aircraft taxiing to terminals. De-icing, wash and aircraft maintenance. Catering and cargo.	Maintenance of runways, aprons and other areas, including snow clearance.	Passenger activities in the terminal area, including restaurants, shops, toilets and offices.
Input	**Input**	**Input**
Glycol for aircraft de-icing	Runway de-icing agents	Water for passenger areas
Aircraft fuel	Electricity for lighting	Electricity and heating for passenger areas
Water	Herbicides	Water for restaurants, shops, etc.
Electricity and heating	Fuel for CPH's vehicles	Electricity and heating for restaurants, shops, etc.
	Fuel for other vehicles	
Output	**Output**	**Output**
Wastewater	Surface water	Wastewater
Collected glycol	Waste	Waste
Noise	Air quality	Air quality
Air quality		
Oil and fuel spill		
Waste		

CPH's responsibility | CPH monitors and controls | Responsibility of lessees and operators

gers. The servicing of airport passengers involves the consumption of energy and water for heating, cleaning and other activities in the three terminals. The terminal activities also produce wastewater and waste that needs to be removed.

At the same time, the airport activities create jobs and thereby contribute greatly to society. Copenhagen Airport has major local and regional importance due to the number of jobs resulting directly and indirectly from the activities of the airport. About 22,000 people work in the many companies operating in the airport.

Environmental work

Copenhagen Airports A/S is listed on Copenhagen Stock Exchange and owns and operates airports in Copenhagen and Roskilde. CPH makes infrastructure, buildings and service facilities available for the many companies operating their businesses at the airports.

In addition to the impact of CPH's activities, the environment around the airport is also affected by the activities of the other companies. In accordance with CPH's environmental approvals, CPH monitors parts of these impacts, primarily noise and air quality. The responsibility, however, rests with the individual company. The monitoring results of CPH are reported to the environmental and civil aviation authorities, and these authorities carry out further procedures with the individual company.

CPH environmental policy indicates the general framework for environmental attention as an integrated part of the company's operations.

The environmental policy establishes that CPH as an environmentally responsible company, CPH is operated and developed with a view to continually improving environmental results.

These results must be achieved through constant attention to environmental considerations in all decisions; preventive actions and the use of cleaner technology; increased environmental awareness among employees and partners, as well as through open dialogue about relevant environmental issues.

The environmental impact of CPH's airports in Copenhagen and Roskilde is regulated by the environmental authorities through terms established in environmental approvals. The most important approvals are the general approval of the Environmental Protection Agency regarding noise and air pollution in connection with air traffic, and the environmental authorisation of other activities by Copenhagen County.

These approvals were given on the basis of an Environmental Impact Assessment (EIA) implemented in 1997 regarding the extension of Copenhagen Airport. They include requirements on operations and future extensions.

The individual departments at CPH are responsible for observing the environmental approvals and current legislation. CPH's environmental division provides consultancy, takes care of the contact to environmental authorities, and co-ordinates the internal-control measures of the airport.

During the preparation of the EIA report, the most important environmental impacts of the activities at Copenhagen Airport were mapped and their consequences analysed. Based on this, CPH prepared a series of action plans that have been implemented gradually. The development of the environmental impact is followed closely with a view to implementing corrections if necessary.

The development of the environmental impact is described on the following pages. A table in the back of this report shows the development in environmental data over a five-year period.

Environmental impact of aircraft activities at Copenhagen Airport

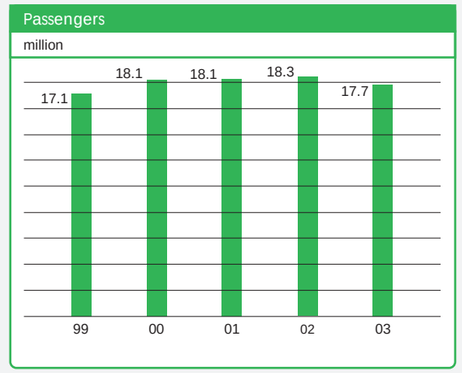
Noise

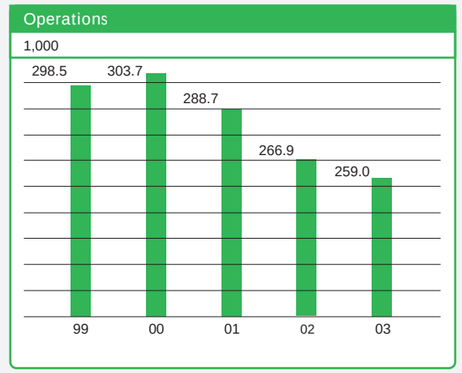
Noise is a primary factor in the total environmental impact of airports. Noise impact mainly occurs on takeoff and landing, but noise from aircraft on the ground also affects the residential areas around Copenhagen Airport. The development of noise factors is being constantly monitored, and new measures are introduced in order to limit noise.

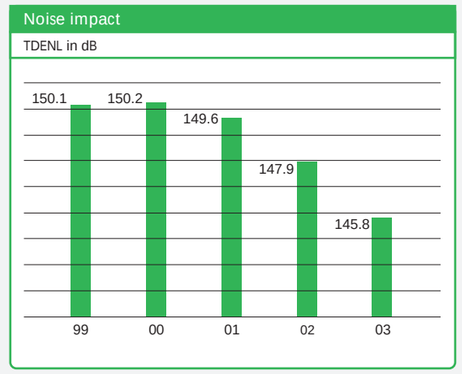
Noise monitoring shows that the noise impact around Copenhagen Airport has been significantly reduced since 1996. According to the framework established by the environmental authorities regarding the environmental impact of the airport on its surroundings, there will be a 5 dB reduction in noise impact from air traffic in the years from 1996 to 2005. Each year, the so-called TDENL value (Total-Day-Evening-Night-Level) is calculated. It describes the total sound energy from all departing and landing aircraft over an average 24-hour period.

In 2003, the noise impact, calculated according to the TDENL method, decreased by 2.1 dB to 145.8 dB compared with 2002. The TDENL value has been reduced by 7.0 dB compared with the 1996 level. The major decrease in noise impact is partly due to the decline in the total number of operations from 266,894 in 2002 to 259,002 in 2003. The cargo airlines' replacement of older modified aircraft types, which primarily operate in the night period, with less noisy aircraft are also a contributing factor to the decrease. The total number of cargo operations fell in 2003 by 22.2% compared with 2002. In the same period, the departure weight of cargo operations fell by 25.8%.

The choice of runway for takeoffs and landings is significant with regard to noise impact. Takeoffs and landings are carried out against the wind since, for security reasons, aircraft wings must have the highest possible speed in relation to the surrounding air. The use of runway system is therefore dependent on the actual direction of the wind. The runway system in Copenhagen Airport is organised with two main runways (04L-22R and 04R-22L), which are used as much as possible, and the crossing runway (12-30), which is only used for safety reasons during special weather and wind conditions. The regulations for the use of the runways specify that,







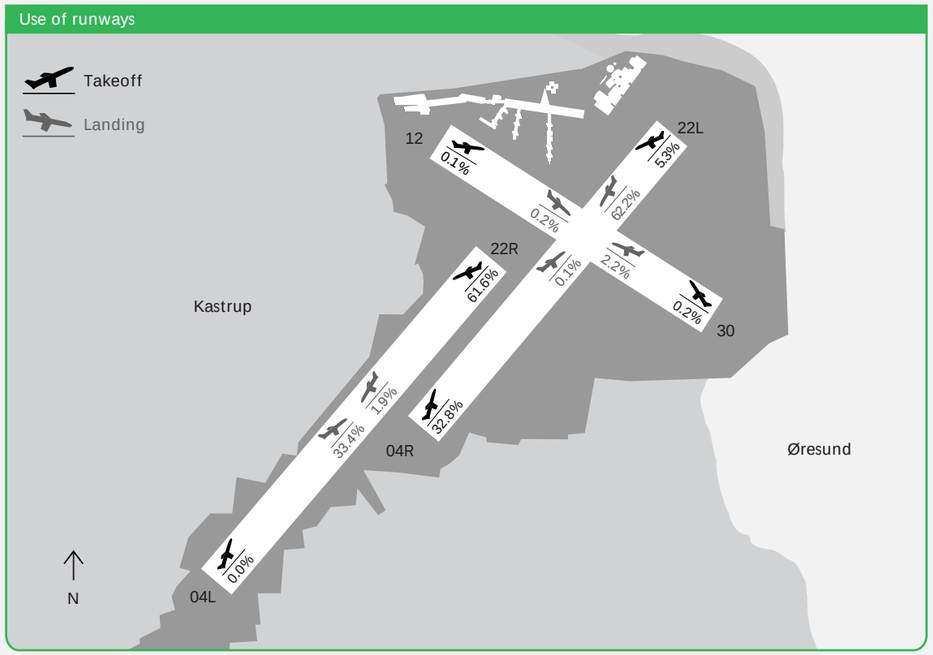
whenever possible, aircraft should avoid passing over residential areas.

In 2003, the distribution of traffic on the main runways did not differ significantly from the normal pattern as seen over a ten-year period. The use of the crossing runway with takeoff on runway 12 and landing on runway 30 has been significantly lower than could be expected for a normal year. As a result, the residential areas northwest and south of the airport have been less affected by aircraft noise from the crossing runway than usual.

During the night period (23:00-06:00), CPH's noise monitoring system logs all noise events above 85 dB. Takeoffs and landings at night may not exceed a maximum A-weighted noise level of 85 dB in six measuring points in residential areas around the airport. All takeoffs at night are subject to an approval procedure with a view to ensuring the observance of the permitted noise level.

The Danish Civil Aviation Administration assess logged noise events in order to determine whether the aviation legislation has been observed. In 2003, seven noise events were found to exceed 85 dB, a slight drop compared with eight events in 2002. Six of the seven events were caused by takeoffs, and one was caused by a landing aircraft. Logged noise events above 85 dB from takeoffs and landings constitute less than 0.1% of all aircraft operations at night.

Use of runways



Night period maximum noise levels from takeoff and landing

		1999	2000	2001	2002	2003
86 dB(A)	number of noise events	10	2	7	5	2
87 dB(A)	number of noise events	5	2	2	0	2
88 dB(A)	number of noise events	1	1	1	1	0
89 dB(A)	number of noise events	0	3	2	0	2
90 dB(A)	number of noise events	0	0	1	0	1
>90 dB(A)	number of noise events	0	0	0	2	0

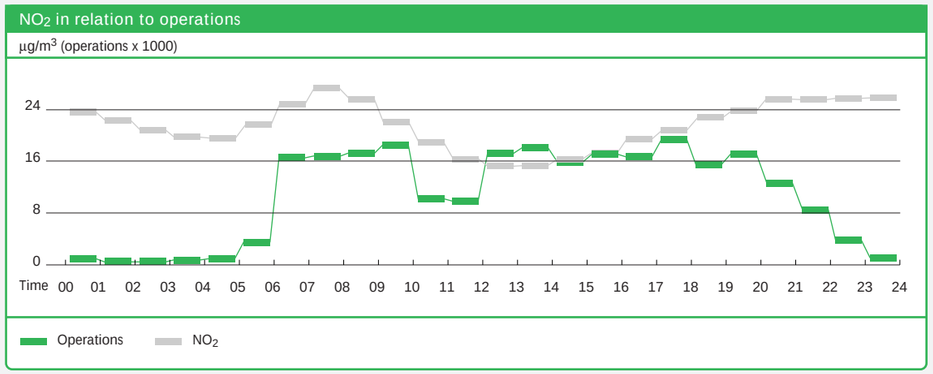
Repairs and maintenance of aircraft are performed regularly in order to maintain high safety standards. The testing of aircraft engines for this purpose contributes to noise in the airport surroundings. In order to minimise the nuisance, provisions have been introduced allowing engine run-ups that is necessary for the punctual execution of scheduled departures, but with the greatest possible consideration for the environment. Engine testing must be carried out in designated areas and cannot take place between 23:00 and 05:00.

In 2003, engine testing occurred 1,593 times, including 745 instances of engine run-up and 848 instances of engine idle-run. The number of engine testing is basically unchanged compared with 2002, although the number of engine run-ups (at a higher effect than idle-run) has increased by 30%. The number of deviations of the engine testing provisions reported to the environmental authorities is unchanged compared with 2002. Six events were reported, corresponding to 0.4% of all engine-testing incidents.

Air quality

In the middle of 2000, CPH established permanent air quality monitoring. The system consists of three monitoring stations distributed across the airport area. The results of the monitoring shows that the levels of NO_2 and PM_{10} are around half of the limit values established by the EU. The PM_{10} level increased in 2003. The increase was caused by unusually high dust concentrations in the whole region in early 2003. This is confirmed through comparison with other measurements in the region. The level of NO declined while the NO_2 level increased.

A previous study of air quality as well as the continual monitoring since 2000 have shown that there is no definite correlation between air quality and aircraft operations. The most significant airport-related impact of local air quality can be attributed to road traffic around the airport terminal area, including traffic on the motorway system.



In 2003, CPH and the National Environmental Research Institute implemented a study of obnoxious smells in the airport surroundings. The study assessed how much smell each individual aircraft emits. Subsequently, the dissemination of smell to the surroundings from all aircraft on selected days was assessed using a dispersion model.

The study shows periodical deviations from a recommended limit value for smells up to three kilometres from the airport. The impact of obnoxious smells from air traffic is assumed to be smaller than previously since aircraft engines have been considerably improved in recent years. This development is expected to continue.

Oil and fuel spill

Aircraft fuel is stored in tanks at the fuel storage facility, which is operated by the Brændstoflageret company, Københavns Lufthavn I/S. The total storage capacity is 4,140 m³. Brændstoflageret receives jet fuel via an underground pipeline from the company's own pumping station at Prøvestenen. From the storage tanks, the jet fuel is distributed to aircraft stands primarily via pipelines to pit wells from which the aircraft can be refuelled with a hose. In 2003, 120,000 fuelling operations involving a total volume of 845 million litres of fuel took place at Copenhagen Airport.

Despite great care, spills are unavoidable. CPH cleans all oil and fuel spills when aircraft and vehicles are refuelled. Due to fire safety, fuel spills are washed away to sewer and the fuel is collected in the nearest fuel separator. Oil spills are typically cleaned using an absorbing material combined with subsequent washing with soapy water that is applied and collected.

In connection with cleaning, the spills are logged in order to establish the total volume and number of spills.

A total of 289 spills were logged in 2003, and the total volume of the spills was 3,008 litres, compared to 3,337 litres in 2002. Of the total number of spills, 85 were fuel spills with a total of 1,422 litres and the remaining 204 were oil spills (hydraulic and engine oil) of 1,586 litres. The volume and number of fuel spills should be seen in relation to the total consumption of 845 million litres of fuel. This means that the fuel spills constitute about one litre per 600,000 litres of fuel used.

Aircraft de-icing

Ice formation affects the manoeuvrability of the aircraft and increases its weight, and therefore aircraft need to be de-iced before takeoff in the winter period and under certain meteorological conditions. Temperatures and air humidity are essential factors, but cold jet fuel inside the tank of a landing aircraft may also cause ice on the wings.

Handling companies at the airport perform de-icing on three special platforms by spraying the aircraft with a mixture of hot water and glycol immediately before takeoff.

The platforms have a total area of 31,500 m² and are designed to collect precipitation and the de-icer that drips off the aircraft. The collected fluids are transported to municipal purification plants where they are re-used to accelerate biological decomposition in the plants.

In certain periods, the collected glycol concentrations are very weak due to coincidence of precipitation and de-icing. In co-operation with Copenhagen County, CPH has successfully spread out the weak glycol concentration on a special area of the airport with a view to biological decomposition. Soil samples taken after the de-icing season show that the glycol has been decomposed.

In order to reduce the volume of glycol used, preventive anti-icing is performed whenever possible. The glycol is sprayed on the aircraft upon arrival and thus prevents ice formation on the aircraft while it is parked at the stand. On average, 200 litres of glycol are used for one de-icing, while only 6 litres are used for one anti-icing.

Glycol consumption depends on meteorological conditions and has ranged between 294 m³ and 763 m³ in the past five years. In 2003, consumption was at 490 m³. A total of 302 m³ of glycol was collected in the same period.

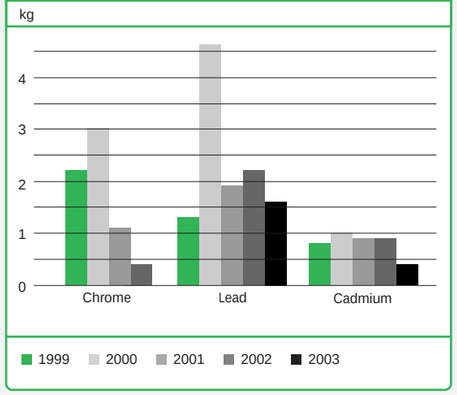
Environmental impact of runway activities at Copenhagen Airport

Surface water

Rainwater from paved areas is discharged into the Øresund through CPH's surface water system. The many activities at the airport involve discharge of pollutants that may impact the environment of the Øresund. The quality of the surface water is monitored at 12 measuring stations placed on the coast and at outflow to "Hovedgrøften". 24-hour samples are analysed periodically for a range of pollutants.

As part of efforts to minimise the discharge of pollutants such as fuel, 120 oil separators have been placed in the airport areas. They are monitored on a monthly basis according to an established procedure and emptied according to need. The oil separators are always checked after oil or fuel spill.

Surface water – discharged heavy metals



In the middle of 2002, the airlines established provisions for the collection of wash water from aircraft cleaning, since it was no longer permitted to discharge uncleaned aircraft wash water to CPH's surface water system due to the contents of heavy metals. The plants have been operating during all of 2003 and have resulted in a significant drop in heavy metals in the surface water.

Due to a major drop in the consumption of runway de-icer sand (5% urea) from 2001 to 2002, the average concentration of nitrogen in the surface water dropped significantly in the same period. However as a result of an increase in the amount of discharged surface water in 2002, the reduction of nitrogen was not seen until 2003.

In early 2003, CPH renovated the existing site for fire drills and erected an aircraft model for simulating fires in an aircraft. For the environment, the renovation means reduced consumption of fuel and of materials for fire extinguishing. The process wastewater is currently being cleaned through carbon filters and sent to the surface water system. CPH and Dragør Kommune are investigating the viability of discharging the process wastewater to the municipal wastewater system.

Runway de-icing

Copenhagen Airport has 50 different vehicles for snow removal, including 22 large snow-clearing machines. It takes 20 minutes to de-ice the entire airport area in frosty weather. When it snows, it takes about 25 minutes to clear each runway.

CPH has established an early ice warning system that can predict snow, sleet and glaze with great precision. The system means that the need for preventive de-icing can be predicted one hour before precipitation sets in. Only 50% of the amount of de-icer, which must be used after the glaze has formed, is used as a preventive measure. Using a friction tester, it is measured how icy the runways are, ensuring fast turnout.

For runway, taxiway and stand de-icing, CPH uses sand and a formiate-based de-icer in liquid and solid form. Less than 5% urea is added to the sand in order to increase the effect. Formiate in the shape of granulate is used in heavy glazes. The advantage of granulate is that it permeates the glaze and dissolves the ice, making it easy to remove mechanically.

The consumption of runway de-icer is dependent on the weather conditions in the individual years. In 2003, the consumption was 924 tonnes of formiate and 28 tonnes of sand, which is more than the 830 and 12 tonnes used in 2002.

The consumption of de-icer affects the results of CPH's monitoring of the surface water that is discharged in the Øresund. During the winter, the content of BI_5 is higher. BI_5 is a measure of the oxygen consumption for biological decomposition of the substances in the surface water.

Fuel consumption

Fuel plants in the northern and western sections of the airport supply diesel and petrol to CPH's 364 vehicles. All vehicles have sensors that monitor their individual consumption.

Petrol consumption constitutes about 10% of the total fuel consumption.

In 2003, petrol consumption declined from 68 m^3 to 63 m^3, while diesel consumption rose from 609 m^3 to 711 m^3. Diesel is primarily consumed by vehicles used for area maintenance, including de-icing and cleaning of runways and the consumption depends on the need for using the snow-clearing equipment.

Diesel is also used for a number of stand-by power plants that supply emergency power to runway lights and other vital elements in order to continue the smooth operation of air traffic. The use of these generators included three hours in September 2003 when major parts of Eastern Denmark were hit by power failure.

Herbicides

For safety reasons, security fences, runways and taxiways must be kept clear of grass and weeds. Weed control is primarily carried out mechanically. CPH uses herbicides only in areas where machines cannot be used. One such area is along the security fence, where the grass cannot be mowed without damaging the fence.

In 2003, 120 litres of herbicides were used. This represents a modest increase compared with 2002. The increase was smaller than expected since the focus of recent years on reducing consumption has meant that grass, in particularly, has become a problem on the runway system. The consumption was less than expected due to pavement renovation on existing taxiways in several places, and because the taxiways were extended in the summer of 2003. These works eliminated the need for weeding. CPH will continue its focus on limiting herbicide consumption.

Environmental impact of terminal activities at Copenhagen Airport

Energy consumption

The terminal areas of Copenhagen Airport have the highest energy consumption. The energy is used for lighting in buildings, at aprons, stands, taxiways and runways and for ventilation, room heating and comfort cooling in terminal buildings.

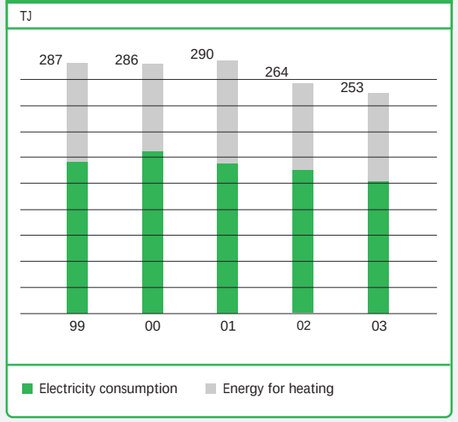
Heating in the terminal areas is based on district heating from Tårnby Kommune. Heating of the remaining part of the airport is primarily based on natural gas. Electrical heating is used to a very limited extent in outlying, temporary technical buildings. In 2003, energy consumption for heating increased slightly compared with 2002. The number of degree-days was higher in 2003 than the previous year. Adjusting for degree-days, the energy consumption shows a decline since 2002.

In 2002, CPH adopted an energy policy. An important target was a 10% reduction in energy consumption over a three-year period starting at the 2001 level. The target was to be achieved by supporting all financially feasible energy-saving measures and encouraging energy-friendly planning and energy-friendly purchases.

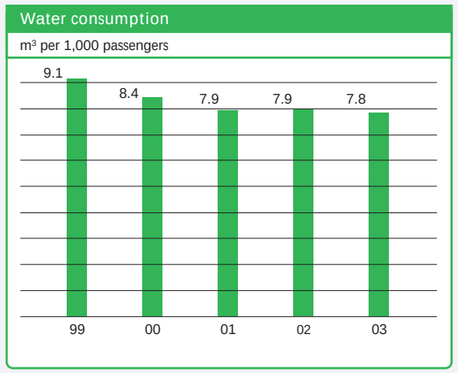
Total energy consumption at CPH – adjusted for degree-days – decreased a full 12.4% in 2003 compared with 2001. This means that the energy-saving target has been reached in just two years. The decline can be ascribed to increased monitoring of energy consumption through the installation of new meters in the airport and increased focus on optimal management of adjustable plants.

The meters are connected to a central monitoring and logging system, and the consumption development is monitored regularly with a view to identifying new energy-saving opportunities. New energy-saving targets and new focus areas are expected to contribute to further positive developments in energy consumption at Copenhagen Airport.

Total energy consumption



Water consumption



Water consumption

A broad range of activities consumes water. CPH's water consumption mainly comes from the three passenger terminals, which are frequented by 50,000 people on a daily basis. Airlines, catering companies and other lessees at the airport are responsible for their own water consumption.

In the late 1990s, CPH reduced water consumption significantly. Consumption in relation to number of passengers has stabilised at the 2001 level. In 2003, the water consumption per 1,000 passengers was at 7.8 m³.

Wastewater

Wastewater from the airport's terminal and maintenance facilities is discharged to purification plants in Tårnby and Dragør. Before discharge, CPH each month takes out wastewater samples for analysis of content of several substances by external laboratories. Amounts of water are logged continuously, and data is gathered in CPH's central monitoring system.

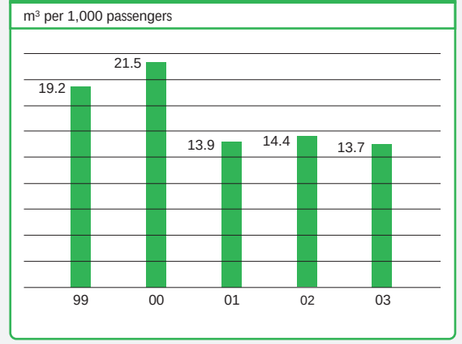
In 2003, a total of 242,228 m³ of wastewater was discharged from airport and airport user activities. The amount corresponds to 13.7 m³ per 1,000 passengers, a reduction compared with 14.4 m³ per 1,000 passengers in 2002.

In recent years, special focus has been placed on reducing the content of heavy metals. Airlines have established plants for the collection of aircraft wash water since source tracing analyses have shown that water from aircraft wash contains considerable amounts of heavy metals. These initiatives have had an effect on the contents of both heavy metals and detergents in the wastewater and resulted in a reduction in 2003.

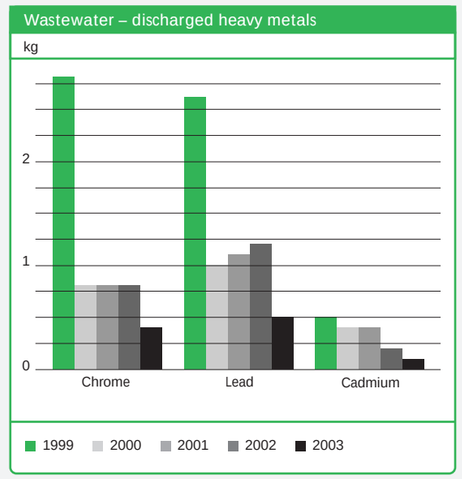
Waste

At Copenhagen Airport, waste is generated from two main areas: waste from aircraft and waste from the ground. Airlines are responsible for waste from aircraft while CPH is responsible for removing waste from the three passenger terminals, CPH's maintenance facilities and administration buildings. CPH has established a container area for waste sorting in fractions.

Wastewater



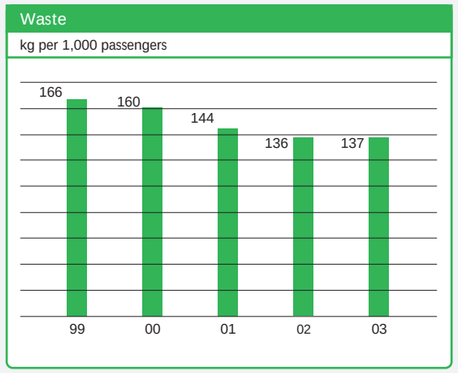
Wastewater – discharged heavy metals

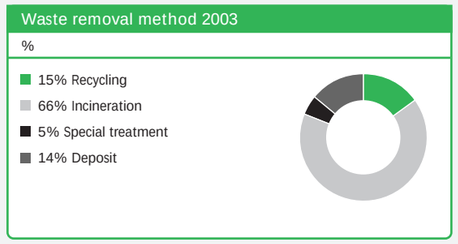


The total amount of waste fell by 2% compared with 2002. The number of passengers decreased by 3% in the same period. This means that the amount of waste per 1,000 passengers increased from 136 kg to 137 kg.

The proportion of recyclable waste increased compared with 2002, both in real amounts and as a percentage of the total amount of waste. Recyclable waste is primarily cardboard, paper, iron and metals. The amount of waste for incineration has stabilised on the 2002 level. Waste for incineration is primarily mixed combustible materials from offices, shops and general passenger areas.

The amounts of waste for disposal and special treatment have dropped by 9% and 16%, respectively. The main reason is that both fractions increased dramatically in 2002 and have now just returned to their normal levels. The largest fraction for disposal is waste swept from the streets from the vacuuming of stands and other areas. Waste for special treatment is mainly water with a small content of oil and/or soap.





Environmental impact of Roskilde Airport

Noise

A consequence of considerable growth in air transportation in the 1960s was an acute need for the provision of further airport capacity in the metropolitan area and efficient relief of Copenhagen Airport. The result was the establishment of Roskilde Airport in 1973 after numerous feasibility studies, which had the purpose of optimising location and layout of the airport in relation to expected noise nuisance.

At the opening in 1973, the projection was that the airport could be fully utilised, corresponding to 200,000 operations, including 25,000 operations with aircraft types over 10 tonnes.

Roskilde Airport is used as a regional airport for Zealand and the Copenhagen metropolitan area for general aviation and training flights. The airport is primarily used by smaller aircraft in the 1,000-2,000 kg weight classes.

In 2003, there were 90,658 operations at Roskilde Airport, a decline compared with 98,416 takeoffs and landings in 2002. The runway system in Roskilde Airport has been established with main runways 03-21 and 11-29. In 2003, the distribution on the main runways did not significantly deviate from the normal use of the system over a ten-year period.

Aircraft engine testing contributes to noise in the airport surroundings, and various measures have been introduced in order to minimise the noise nuisance. Engine run-ups have been referred to special testing areas and can, in principle, only be performed in the period between 07:00 and 18:00. In 2003, there were 179 incidents of engine testing. Reports to the environmental authorities concerning deviations from the rules involve two events, corresponding to 1.1% of all engine testing incidents.

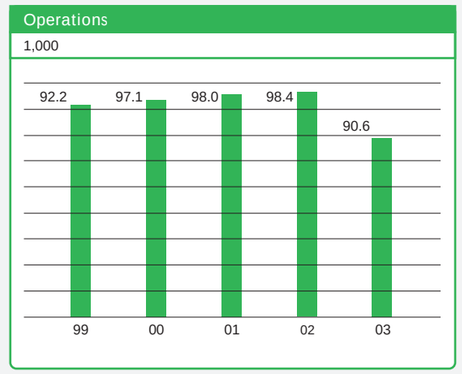
In 2003, CPH initiated an Environmental Impact Assessment (EIA) study in order to meet increasing interest in traffic out of Roskilde Airport. As the planning authority, The Greater Copenhagen Authority (HUR) implements the study. HUR expects to adopt an amendment to the regional plan that includes the EIA report in the middle of 2005.

Energy and water consumption

Energy consumption for heating rose 9% in 2003. Taking variations in outdoor temperatures into account, the energy consumption is still slightly higher than in 2002. Total electricity consumption increased by 11%. This increase is primarily attributable to the introduction of air conditioning in the airport administration areas. Water consumption increased from 3,992 m^3 in 2002 to 4,567 m^3 in 2003, representing a rise of 14%. However, seen over a five-year period, water consumption has been reduced by 20%.

Waste

The waste from Roskilde Airport primarily consists of ordinary household-like refuse generated from the passenger terminal, administration building and maintenance facilities. The estimated annual volume is below 40 tonnes in 2003.



Working environment

Safety work at CPH is organised in a safety organisation consisting of a main safety committee and three safety committees reporting to the COO level. The three safety committees cover administration, operations and Roskilde Airport.

CPH's working environment policy and objectives provide the framework for the working environment efforts. In general, the policy states that CPH wishes to promote a good working environment concentrating on co-operation between employees and management as well as on prevention of and reduction in the number of industrial accidents and industry-related diseases.

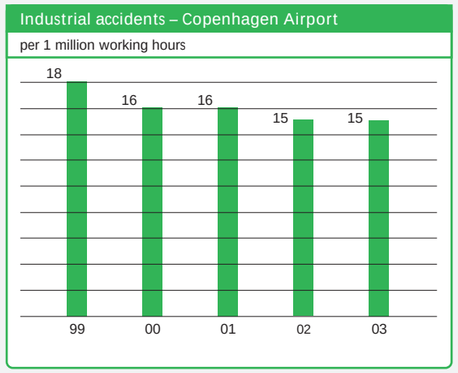
2003 saw the first thorough implementation of semi-annual working environment inspections by the safety groups. During inspections, the groups assess the working environment at the individual places of work. These rounds have given rise to numerous improvements and contributed to making the safety groups visible. Special focus has been an evaluation of the chemical working environment and updating of workplace instructions. The safety organisation and middle management in operations have been introduced to concepts and methods to handling the psychological working environment.

In connection with the SARS epidemic in the spring of 2003, major efforts were made to protect employees against infection in case patients with SARS were to arrive at Copenhagen Airport.

The frequency of industrial accidents in 2003 was 15. On average, accidents involved 10 days of sick leave. No industrial accidents were reported at Roskilde Airport in 2003.

The breakdown below of industrial accidents in 2003 corresponds to the focus areas of the Danish Working Environment Service in 2004.

In 2003, 26% of industrial accidents were due to manual handling. 21% were caused by falling to the same level, while 5% were caused by falling to another level. Collisions with objects caused 23% of the accidents, 7% were caused by contact with sharp objects and, finally, 18% were due to other causes.



Accounting policies

The Environmental Report of CPH describes the development of the environmental impact from operation, maintenance and extension of the airports of Copenhagen and Roskilde.

An Environmental Impact Assessment (EIA) of the extension of Copenhagen Airport from 1996 and Copenhagen Airport's environmental approvals from 1997 form the basis of the selection of environmental factors assessed to be of significance for CPH's activities. The Environmental Report describes the development of these environmental factors since they constitute the impacts that CPH is responsible for and monitors and controls.

The data in the report is based on regular compilation from the individual areas at the airport. They have been collated in a central database for further calculation. Data is provided in one of the following ways:

- Externally documented loggings
- Internal loggings
- Calculated data
- Estimated data

The environmental report has been prepared in accordance with the following accounting policies:

Traffic development and noise

Traffic development is calculated on the basis of data in CPH's traffic statistics system and includes all operations by aircraft type, takeoff weight, use of runway, and time. Total noise impact at the airport from takeoffs and landings is calculated using the TDENL method and is calculated on the basis of each operation including aircraft type and time of day.

The number of noise events resulting from nocturnal flights to and from Copenhagen Airport is monitored and logged by CPH' noise monitoring system. The number of engine testing incidents, including the number of engine idle-run incidents and deviations from rules on engine testing, are stated in this environmental report on the basis of reports received from the airlines.

Air quality

The air quality at Copenhagen Airport is monitored and logged by CPH's air quality monitoring system. The system also collects meteorological data.

Oil and fuel spills

The number of oil and fuel spills is calculated as the number of reports filed by Security, Fire Service or other in-house and third party sources. The calculation of the volume of spills is subject to uncertainty as it is rarely possible to measure the exact volume of a spill.

De-icing

The volume of glycol used for de-icing aircraft is calculated by the companies handling de-icing. The content of collected glycol is registered for each removed truckload and is adjusted for tank contents before and after. The consumption of de-icers for runways and taxiways is calculated based on volumes purchased adjusted for inventory change.

Surface water

The volume of surface water discharged is calculated on the basis of the effect of CPH's pumps for outlet U5 and from the volume of precipitation reported by the Danish Meteorological Institute (DMI) for other discharges. The water quality is determined on the basis of analyses of periodical water samples carried out by a third-party laboratory.

Herbicides

The consumption of herbicides is calculated on the basis of volumes purchased adjusted for inventory change.

Ressources and energy

Each type of consumption is calculated on the basis of volumes purchased/registered, less quantities sold to other companies at the airport. The heated area is estimated on the basis of the BBR Register. Diesel consumption includes fuel for emergency power generating units.

Wastewater
The volume of wastewater discharged is registered by means of online meters connected to CPH's central tracking system (CTS). Water quality is determined on the basis of analyses of periodical water samples carried out by a third-party laboratory.

Waste
Most data on waste is collated from weighing slips or monthly statements from recipients of the waste. In some cases it is not possible to calculate the quantity of the waste since the weight or volume is not registered. In those cases, the weight is estimated.

Working environment
The number of industrial accidents is the number of accidents reported per year causing one or more days of sick leave. The industrial accident frequency is calculated as number of industrial accidents per one million working hours.

Auditors' Statement

To the Shareholders of Copenhagen Airports A/S

Basis of Statement
Copenhagen Airports A/S has entered into an agreement with PricewaterhouseCoopers for submission of a statement on the Company's Environmental Report for 2003.

The Environmental Report is the responsibility of Copenhagen Airports A/S Management. Our responsibility is to submit a statement on the Environmental Report based on our work.

Objective and Scope
We planned and performed our work in accordance with Danish and international Auditing Standards (RS/ISA 100) with the agreed objective of achieving a moderate level of assurance

- that the Environmental Report is consistent with the Company's activities for the financial period;
- that the Report has been documented and stated in accordance with the criteria described under significant accounting policies and that monitoring and reporting procedures have been organised appropriately to ensure reliable reporting on regulated environmental issues.

Our audit included, based on an assessment of materiality and risk, accounting analyses, inquiries, test review of data and underlying documentation, including verification of compliance with significant accounting policies and their consistency with the Company's activities. Furthermore, in the area "energy" selected by us we reviewed the internal control and registration system to ascertain its supporting capability of ensuring reliable reporting.

We believe that the work performed provides a reasonable basis for the following conclusion.

Conclusion
We hereby state that we did not during our review note any matters to disprove

- that the environmental data reported by Copenhagen Airports A/S in its Environmental Report for 2003 are consistent with the Company's activities for the financial period;
- that the Report has been documented and stated in accordance with the criteria described under significant accounting policies, and that monitoring and reporting procedures have been organised appropriately to ensure reliable reporting on regulated environmental issues.

Copenhagen, March 4, 2004

PricewaterhouseCoopers
Statsautoriseret Revisionsinteressentskab

Jens Otto Damgaard
State Authorised Public Accountant

Birgitte Mogensen
State Authorised Public Accountant

Glossary

BI_5
Oxygen consumption of the biological process measured over 5 days.

COD
Chemical Oxygen Demand, a method of analysis to determine the content of organic matter in water.

CPH
Copenhagen Airports A/S.

dB
Decibel; logarithmic unit of sound measurement.

Degree days
The degree-day figure for the year is the sum of all degree days of the year. The degree-day figure for a day is calculated as 17 degrees centigrade less the mean temperature of the day if less than or equivalent to 17 degrees centigrade. Otherwise the degree-day figure is 0.

De-icing
Removal of ice and snow from paved areas at the airport or removal of ice from aircraft wings.

Detergents
Added to washing and cleaning agents to lower the surface tension of water.

Engine testing
Testing of aircraft engines during inspection and repairs. Testing can either be performed at engine run-up (start and running of the engine at higher effect than idle-run) or idle-run (start and running of the engine at idle-run effect).

Formiate
Chemical used for de-icing runways and taxiways.

GJ
Giga Joule, 10^9 Joule.

Glycol
Agent used for de-icing aircraft. Copenhagen Airport uses propylene glycol.

Handling
The handling of passengers, luggage, cargo etc.

NO
Nitric oxide.

NO_2
Nitrogen dioxide.

Operation
Term used in airport statistics to designate a takeoff or landing.

Particles
Carbon in emission gases from diesel engines.

PM_{10}
Particles with a maximum diameter of 10 µm.

Stands
Aircraft parking spaces during stays at the airport, with or without passenger loading bridges.

Taxiways
Paved stretches between runways and aircraft stands.

TDENL method
Total-day-evening-night level; method used by the Danish Environmental Protection Agency for continuous control of noise impact expressed as a single number. Based on calculation of DENL (an average A-weighted sound pressure level (day-evening-night-level) calculated on a 24-hour basis with the addition of 5 dB for noise events between 19:00 and 22:00 and 10 dB for noise events between 22:00 and 07:00).

TJ
Tera Joule, 10^{12} Joule.

Total N
Total nitrogen content.

Total P
Total phosphate content.

Urea
Nitrogen-based de-icer.

Environmental data

Environmental data

	Unit	1999	2000	2001	2002	2003
KEY FIGURES – COPENHAGEN AIRPORT						
Passengers	total	17,050,629	18,119,752	18,136,274	18,272,173	17,714,007
Operations	total	298,533	303,713	288,739	266,894	259,002
ENVIRONMENTAL IMPACT OF AIRCRAFT ACTIVITIES AT COPENHAGEN AIRPORT						
Noise impact	TDENL in dB	150.1	150.2	149.6	147.9	145.8
Night period maximum noise levels from takeoff and landing						
86 dB(A)	total	10	2	7	5	2
87 dB(A)	total	5	2	2	0	2
88 dB(A)	total	1	1	1	1	0
89 dB(A)	total	0	3	2	0	2
90 dB(A)	total	0	0	1	0	1
>90 dB(A)	total	0	0	0	2	0
Use of runways						
04L Takeoff/landing	% breakdown	0.0/29.4	0.0/25.2	0.1/35.2	0.0/41.3	0.0/33.4
04R Takeoff/landing	% breakdown	31.7/2.2	25.0/0.1	35.1/0.1	41.1/0.2	32.8/0.1
22L Takeoff/landing	% breakdown	6.1/62.4	4.9/69.0	5.0/58.4	3.9/52.1	5.3/62.2
22R Takeoff/landing	% breakdown	61.5/2.4	69.4/2.9	59.0/2.1	52.6/1.6	61.6/1.9
12 Takeoff/landing	% breakdown	0.1/0.3	0.2/0.4	0.5/1.0	2.1/0.4	0.1/0.2
30 Takeoff/landing	% breakdown	0.6/3.3	0.5/2.4	0.3/3.2	0.2/4.3	0.2/2.2
Weight breakdown, aircraft types						
0-29 tonnes	total	108,070	107,199	93,883	89,827	94,831
30-49 tonnes	total	20,119	18,943	14,275	15,629	14,163
50-69 tonnes	total	128,081	135,038	137,287	114,235	93,514
70-119 tonnes	total	27,268	27,457	28,259	34,349	45,124
120-299 tonnes	total	13,598	13,273	13,599	11,734	10,140
> 300 tonnes	total	1,397	1,803	1,436	1,120	1,230
Engine testing	total	1,801	1,865	1,604	1,579	1,593
Of which idling	total	1,015	1,000	936	1,006	848
Deviations	total	31	23	8	6	6

	Unit	1999	2000	2001	2002	2003
Air quality						
NO_2	µg/m³			22	19.4	21.5
PM_{10}	µg/m³			19	20.9	23.2
NO	µg/m³			9.7	7.8	7.2
Oil and fuel spill						
0-9 litres	total	118	149	152	172	184
10-49 litres	total	117	106	103	71	95
50-249 litres	total	32	17	15	12	10
> 250 litres	total	5	2	1	1	0
Aircraft de-icing						
Glycol consumption	m³	586	294	763	313	490
Collected glycol	m³	331	144	444	215	302

	Unit	1999	2000	2001	2002	2003
ENVIRONMENTAL IMPACT OF RUNWAY ACTIVITIES AT COPENHAGEN AIRPORT						
Discharge of surface water	m³	2,417,840	2,204,550	2,475,828	3,427,392	2,736,071
Surface water – discharged agents						
Total-N	kg	11,303	11,408	11,463	10,289	5,834
Total-P	kg	792	773	877	1,193	409
Bl_5	kg	144,218	178,943	73,046	53,873	46,719
Total hydrocarbons	kg	52	133	160	90	222
Zinc	kg	95	160	89	137	129
Chrome	kg	2.2	3.0	1.1	0.4	0.0
Copper	kg	24	33	21	35	24
Nickel	kg	7	7	9	10	10
Lead	kg	1.3	4.6	1.9	2.2	1.6
Cadmium	kg	0.8	1.0	0.9	0.9	0.4
Consumption of runway de-icing						
Formiate	kg	784,546	270,000	1,195,000	830,358	923,565
Sand (5% urea)	kg	237,750	101,000	120,000	12,000	28,000
Fuel consumption						
Petrol	m³	76	67	71	68	63
Diesel	m³	737	633	772	609	711
Consumption of herbicides	litres	90	100	40	110	120

	Unit	1999	2000	2001	2002	2003
ENVIRONMENTAL IMPACT OF TERMINAL ACTIVITIES AT COPENHAGEN AIRPORT						
Electricity consumption	TJ	174	186	172	163	151
Energy for heating	TJ	113	100	118	101	102
Energy consumption per 1,000 m²	TJ	0.59	0.49	0.58	0.49	0.50
Water consumption	m³	155,964	152,641	143,112	143,537	138,662
Water consumption per 1,000 passengers	m³	9.1	8.4	7.9	7.9	7.8
Discharge of wastewater	m³	327,298	390,317	251,558	263,681	242,228
Discharge of wastewater per 1,000 passengers	m³	19.2	21.5	13.9	14.4	13.7
Wastewater – discharged agents						
Total-N	kg	24,475	23,688	21,857	21,003	21,930
Total-P	kg	3,343	3,010	3,432	3,376	2,864
COD	kg	236,316	189,519	180,176	194,698	168,736
Detergents	kg	2,315	1,564	1,358	2,064	1,470
Oil and grease	kg	11,381	17,493	15,891	10,200	9,452
Zinc	kg	89	73	86	54	44
Chrome	kg	2.8	0.8	0.8	0.8	0.4
Copper	kg	13	13	16	12	10
Nickel	kg	2.9	1.2	1.4	1.5	1.1
Lead	kg	2.6	1.0	1.1	1.2	0.5
Cadmium	kg	0.5	0.4	0.4	0.2	0.1
Waste volume	tonnes	2,830	2,908	2,608	2,491	2,432
Waste removal method:						
Recycling	%	14.3	17.4	16.3	13.8	14.7
Incineration	%	61.5	61.3	69.2	64.9	66.0
Special treatment	%	4.5	5.1	2.5	6.1	5.2
Deposit	%	19.7	16.2	12.0	15.2	14.1
Waste volumes per 1,000 passengers	kg	166	160	144	136	137

	Unit	1999	2000	2001	2002	2003
ENVIRONMENTAL IMPACT OF ROSKILDE AIRPORT						
Passengers	total	29,309	33,598	35,618	49,278	43,220
Operations	total	96,214	97,165	98,039	98,416	90,658
Weight breakdown, aircraft types						
0-999 kg	total	9,158	6,541	5,896	6,934	9,659
1000-1999 kg	total	80,050	83,503	84,378	83,445	74,485
> 2000 kg	total	7,006	7,122	7,765	8,037	6,515
Use of runway						
03 Takeoff/landing	% breakdown	6.8/7.0	3.7/4.1	7.4/7.8	7.5/7.8	9.2/9.7
11 Takeoff/landing	% breakdown	24.0/28.5	26.1/32.6	23.3/30.2	32.0/38.9	25.8/33.5
21 Takeoff/landing	% breakdown	47.3/42.3	43.7/36.4	42.9/34.4	40.1/32.1	40.9/32.4
29 Takeoff/landing	% breakdown	21.9/22.2	26.5/26.9	26.4/27.6	20.4/21.2	24.1/24.4
Engine testing	total	-	-	-	-	179
Of which idling	total	-	-	-	-	13
Deviations	total	-	-	-	-	2
Electricity consumption	GJ	2,475	2,509	2,763	2,687	2,977
Energy consumption for heating	GJ	3,284	2,712	3,228	2,706	2,953
Energy consumption per m²	GJ	1.49	1.23	1.47	1.23	1.34
Water consumption	m³	5,676	5,703	5,847	3,992	4,567
WORKING ENVIRONMENT – CPH						
Industrial accidents – Copenhagen Airport	per 1 million working hours	18	16	16	15	15
Industrial accidents – Roskilde Airport	per 1 million working hours	19	0	0	18	0
Employees	total	1,449	1,399	1,388	1,347	1,352

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