



Key data on sustainability at Lufthansa  
**Issue 2008**

# Balance

Company/Social responsibility/Environment/Corporate citizenship



## At a glance

### Key business performance data<sup>1</sup>

		2007	2006	Change
Revenue	million €	22,420	19,849	+ 13.0%
of which traffic revenue	million €	17,568	15,354	+ 14.4%
Profit/loss from operating activities	million €	1,586	1,078	+ 47.1%
Net profit/loss for the period	million €	1,655	803	+ 106.1%
Operating result	million €	1,378	845	+ 63.1%
Capital expenditure	million €	1,378	1,929	- 28.6%
Cash flow from operating activities	million €	2,862	2,105	+ 36.0%
Total assets	million €	22,320	19,461	+ 14.7%
Shareholders' equity	million €	6,900	4,903	+ 40.7%

### Key personnel data

		2007	2006	Change
Number of employees (on December 31, 2007)		105,261	94,510	+ 11.4%
of these, in Germany		64,434	62,538	
of these, outside Germany		40,827	31,972	
Staff costs <sup>1</sup>	million €	5,498	5,029	+ 9.3%
Revenue/employee <sup>1</sup>	€	222,467	212,196	+ 4.8%
Staff costs/revenue <sup>1</sup>	percent	24.5	25.3	- 0.8PP
Average age	years	40.3	40.2	+ 0.2%
Part-time ratio, absolute	percent	26.8	25.7	+ 1.1 PP
Part-time ratio, men	percent	14.3	13.7	+ 0.6 PP
Part-time ratio, women	percent	43.8	42.6	+ 1.2 PP
Share of women in management	percent	15.0	12.9	+ 2.1 PP

@ <http://responsibility.lufthansa.com>

@ Order your copy of our Annual Report 2007 at <http://www.lufthansa-financials.com>

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<b>Environmental data</b>		2007 <sup>2</sup>	2006 <sup>3</sup>	Change <sup>4</sup>
<b>Resource consumption</b>				
Fuel consumption	tonnes	6,926,389	6,940,587	-0.2%
Fuel consumption, specific, passenger transportation	l/100 pkm	4.32	4.38	-1.4%
Fuel consumption, specific, freight transport	g/tkm	226	182	+24.0%
<b>Emissions</b>				
Carbon dioxide emissions	tonnes	21,818,126	21,890,614	-0.3%
Carbon dioxide emissions, specific, passenger transportation	kg/100 pkm	10.88	11.05	-1.5%
Nitrogen oxide emissions	tonnes	100,834	99,808	+1.0%
Nitrogen oxide emissions, specific, passenger transportation	g/100 pkm	49.8	50.5	-1.4%
Carbon monoxide emissions	tonnes	15,609	15,658	-0.3%
Carbon monoxide emissions, specific, passenger transportation	g/100 pkm	8.6	8.4	+2.5%
Unburned hydrocarbons	tonnes	2,007	1,902	+5.5%
Unburned hydrocarbons, specific, passenger transportation	g/100 pkm	1.0	1.0	+3.6%

<b>Transport performance data</b>		2007 <sup>2</sup>	2006 <sup>3</sup>	Change <sup>4</sup>
Size of active fleet (on December 31, 2007) <sup>5</sup>		514	497	+17
Number of flights <sup>6</sup>		744,786	735,072	+1.3%
Passengers carried <sup>6, 7</sup>		63,103,335	68,060,661	-7.3%
Freight and mail carried	tonnes	1,805,204	1,758,968	+2.6%
Seat kilometers offered, SKO <sup>6</sup>	million pkm	168,227	191,115	-12.0%
Freight tonne kilometers offered, FTKO	million tkm	14,158	11,717	+20.8%
Tonne kilometers offered, TKO	million tkm	30,954	30,430	+2.0%
Passenger kilometers transported, PKT <sup>6, 7</sup>	million pkm	139,357	158,284	-12.0%
Freight tonne kilometers transported (incl. third-party performance), FTKT	million tkm	9,345	7,637	+22.4%
Tonne kilometers transported, TKT	million tkm	23,321	23,254	±0%

1 Source: Lufthansa Annual Report 2007.

2 For the reporting year 2007, data presented in Balance refers to the following companies: Lufthansa Passenger Airlines (Lufthansa Passenger Airline and Lufthansa Regional: Lufthansa CityLine, Air Dolomiti, Eurowings, Contact Air, Augsburg Airways), Lufthansa Cargo (including charter where Lufthansa Cargo bears the risk) and SWISS (effective July 1, 2007).

3 For the reporting year 2006, data presented in Balance refers to the following companies: Lufthansa Passenger Airlines (Lufthansa Passenger Airline and Lufthansa Regional: Lufthansa CityLine, Air Dolomiti, Eurowings, Contact Air, Augsburg Airways), Lufthansa Cargo, Condor Flugdienst GmbH, Condor Berlin GmbH, Thomas Cook Airlines UK and Thomas Cook Airlines Belgium.

4 Changes over the previous year can be compared only to a limited degree, as the group of consolidated companies changed significantly in 2007 compared with 2006 (also see chapter "About this report" on page → 5).

5 Aircraft operated by the Group, also see overview "Group fleet" on page → 33.

6 Scheduled flights only.

7 On the basis of all passengers aboard, including award travelers (e.g. Miles & More) and traveling employees, excluding crews.

Dear Readers,



The crane again soared to new record heights last year, achieving the best result in the history of our company. This encouraging development was considerably boosted by our joining forces with SWISS. Last year, almost 63 million passengers flew with the airlines of the Lufthansa Group, and we are off to another extremely successful, promisingly positive start in 2008 as well.

While there is every necessity for economic success, we at Lufthansa are always aware of our special responsibility for protecting the environment. Environmental care has been, is and always will be one of Lufthansa's key corporate goals. In its core business activities, Lufthansa counts on a concept that rests on four pillars:

Firstly, we drive forward technical innovation and carry out consistent fleet modernization. We have launched the largest fleet renewal program in the history of our company, while our development and maintenance wing, Lufthansa Technik, is working on fuel-saving solutions for our existing fleet. Secondly, we promote the optimization of airport infrastructure and ground processes. The same is true for the infrastructure in the air in order to avoid having to fly detours and holding patterns. While this area continues to hold the greatest savings potential, we remain dependent on political decisions – as is the case for the discussions that have been going on for the last 48 years regarding the implementation of Europe's largest environmental protection project, the Single European Sky. A unified airspace above Europe would yield CO<sub>2</sub> savings of at least 12 percent. Thirdly, we work everyday to optimize our operating processes and measures, which also makes a discernible contribution to reducing fuel consumption and CO<sub>2</sub> emissions. And fourthly, we employ economic incentive systems such as emissions-related landing fees. By applying this catalogue of measures, we respond to our customers' wishes for worldwide mobility, we create new jobs – about 10,000 of them since 2006 – and we improve our environmental balance sheet long-term.

However, our passenger business is not the only area that focuses on sustainability. All our business segments – whether we are talking about Catering, MRO, IT Services or Logistics – can point to numerous successes in this area and work continuously on developing new energy-saving, resource-conserving concepts.

At Lufthansa, we will continue to give environmental protection the highest priority, as we would like to remain the airline you trust regarding issues of sustainability as well!

A handwritten signature in black ink, appearing to read 'W. Mayrhofer', written in a cursive style.

**Wolfgang Mayrhofer**

Chairman of the Executive Board and CEO  
Deutsche Lufthansa AG

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## About this report

The goal of this report is to provide stakeholders and other interested publics with comprehensive information about the Group's activities, progress and goals in the areas of economy, social responsibility, environment and corporate citizenship. *Balance 2008* is based on data from the financial year 2007.

This report is divided into four main chapters.

- The chapter **Our business** focuses on Lufthansa's economic development, as economic success provides the basis for our sustainable business activities. Additionally, readers gain an overview of the Group's different business segments, its fleet and its transport performance. The feature "Personalized customer dialogue as a factor of success" is devoted to Customer Relationship Management and gives comprehensive information about Feedback Management as it is applied in the Passenger Transportation business segment.
- The Lufthansa Group employs more than 100,000 people worldwide. The chapter **Social responsibility** presents key figures on personnel management in 2007 and informs readers about such topics as diversity, training and continuing education, employability, job safety and health care as well as the challenges of demographic changes. In the feature "Success driven by flexibility," you can find out how Lufthansa consistently develops its own custom-made work-time management to strike an ever-better balance between the individual life concepts and needs of its employees and the operations-related requirements of flexibility. This approach also contributes to a long-term improvement of the Group's competitiveness in the job markets of the future.
- The chapter **Environment** provides information on the topic of environmental care at Lufthansa and illustrates the measures the Group applies to reduce kerosene consumption, the CO<sub>2</sub> and noise emissions of its passenger and cargo aircraft fleet, and to conserve energy and water.
- The chapter **Corporate citizenship** highlights the Group's social and cultural activities as well as its numerous environmental sponsorship projects. In this issue, special attention is given to the aid organization "Cargo Human Care," founded by employees of Lufthansa Cargo in cooperation with German physicians to provide medical care to the poorest of the poor in Kenya.
- Given the full consolidation of Swiss International Air Lines effective July 1, 2007, the current issue contains an additional chapter about the activities of the new Lufthansa Group company.

### Scope of consolidation

The group of consolidated companies changed significantly in 2007 compared with 2006. On April 2, 2007, Lufthansa completed the sale of its stake in Thomas Cook. As mentioned above, the integration of SWISS into the Lufthansa Group was completed on July 1, 2007. Since then, Lufthansa has fully consolidated SWISS in its Group accounts.

**Lufthansa Regional includes:**

Lufthansa CityLine  
 Air Dolomiti  
 Eurowings  
 Contact Air  
 Augsburg Airways



The data used for calculating transport performance, kerosene consumption and emissions were drawn from the following companies for the reporting year 2007: Lufthansa Passenger Airlines (Lufthansa Passenger Airline and Lufthansa Regional), Lufthansa Cargo (including charter where Lufthansa Cargo bears the risk) and SWISS (from July 1, 2007).

Due to these comprehensive changes in the portfolio, the comparability of the figures for the reporting year 2007 with those of the previous year is limited.

There are also different approaches in comparison with the Annual Report 2007 in calculating passenger numbers: The economic performance indicators in the Annual Report are based on the number of revenue passengers. By contrast, this Sustainability Report takes into account all passengers aboard – including traveling employees and passengers taking advantage of Miles & More award tickets. The reason: Every traveler that boards an aircraft affects the environment.

**Methodology of calculations****Kerosene in absolute terms**

The calculation of kerosene consumption is based on actual flight operations, according to the so-called “gate-to-gate” principle. This includes all phases of a flight – from taxiing on the ground to flying detours and holding patterns in the air.

**Emissions in absolute terms**

The calculation of emissions from flight operations is based on the actual transport performance (i.e. actual load factors) and the actual absolute quantity of kerosene consumed during the year in review. In this context, each aircraft-engine combination that exists in the fleet is considered separately, and the corresponding values are calculated by means of computer programs provided by the respective aircraft and engine manufacturers. The annual average flight profile of each subset in the fleet is then fed into these programs. This allows us to determine emissions in relation to flight altitude, distance flown, thrust and load. This approach is necessary for nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO) and unburned hydrocarbons (UHCs) in particular. CO<sub>2</sub> emissions do not require special calculation methods, as they are generated in a fixed relationship to the quantity of kerosene burned. The combustion of one tonne of kerosene generates 3.15 tonnes of CO<sub>2</sub>.

**Specific consumption and emission values**

Calculating specific consumption and emissions entails expressing absolute values in relationship to transport performance. For example, the ratio “liters per 100 passenger kilometers” (l/100 pkm) is calculated on the basis of actual load factors, distances actually flown (great-circle distances) and the kerosene actually consumed.

**Freight transport on passenger aircraft**

The transport of cargo on passenger aircraft raises a particular question in calculating specific consumption and emissions values: How are the respective shares of fuel consumption distributed between passengers and freight? One answer to this question is to allocate consumption values according to respective payloads (i.e. passenger plus baggage on the one hand and freight on the other). At the end of the 1990s, Lufthansa introduced an additional weighting factor, which takes a passenger aircraft’s infrastructure such as seats, galleys and toilets into consideration. This makes the carriage of cargo on passenger aircraft comparable with that on all-freight aircraft. Transporting freight on cargo aircraft is more efficient than on passenger aircraft, as the latter are heavier by definition, given the aforementioned additional infrastructure. This weighting factor has no influence on the overall kerosene consumption, only on the distribution of consumption values between passengers



and freight. It does have the effect, however, of increasing the specific consumption for passengers in an artificial manner, while that for freight carried is lowered.

Lufthansa promoted the introduction of this weighting factor jointly with Air France. However, during the subsequent period no further airline adopted this calculation method, which made it a special solution in an international context. Against this background and the integration of SWISS into the Lufthansa Group, Lufthansa decided to abolish the weighting factor for the reporting year 2007. As a result, the specific consumption and the specific CO<sub>2</sub> emissions for cargo carried on passenger aircraft increased in 2007 when compared with the year before (see "Environmental data" on page → ii).

### Evaluation and validation of data and information

#### Environmental management system

The data used in this report were collected by means of Lufthansa's environmental management system. This system also determines the methods for data verification and its transmission to the division Group Environmental Issues. The basis for data collection is Lufthansa's own database for sustainability.

#### Accuracy

The figures shown in tables are rounded due to considerations of presentation. However, values indicating changes from the previous year always refer to precise figures. For this reason, it is possible that a specific value may remain the same from one year to the next, while a relative change is indicated.

#### Publication dates of this report

*Balance*, the Sustainability Report of the Lufthansa Group, is published once a year in a German and an English edition. The German edition of the previous year's report was published on July 3, 2007, the English edition on August 2, 2007.

#### Additional information on the Internet

In addition to this report, Lufthansa also informs readers on the Internet about activities in the area of sustainability within the Lufthansa Group and also provides more detailed environmental data from the individual business segments.

→ <http://responsibility.lufthansa.com>

#### Disclaimer in respect of forward-looking statements

The data included in this report has been collected and processed with the utmost care. Nevertheless, errors in transmission can not be ruled out entirely.

Information published in this report with regard to the future development of the Lufthansa Group and its subsidiaries consists purely of forecasts and assessments and not of definitive historical facts. Its purpose is exclusively informational, identified by the use of such cautionary terms as "believe," "expect," "forecast," "intend," "project," "plan" or "estimate". These forward-looking statements are based on all discernible information, facts and expectations available at the time. They can, therefore, only claim validity up to the date of their publication.

Since forward-looking statements are by their nature subject to uncertainties and imponderable risk factors – such as changes in underlying economic conditions – and rest on assumptions that may not or divergently occur, it is possible that the Group's actual results and development may differ materially from those implied by the forecasts. Lufthansa makes a point of checking and updating the information it publishes. It can not, however, assume any obligation to adapt forward-looking statements to accommodate events or developments that may occur at some later date. Accordingly, it neither expressly nor conclusively accepts liability, nor gives any guarantee for the actuality, accuracy and completeness of this data and information.



## The Lufthansa Group

## Corporate profile

Deutsche Lufthansa AG is an aviation company with international activities and a presence in almost all important markets worldwide. The strategic business segments Passenger Transportation and Logistics concentrate Lufthansa's core competencies. They are reinforced and complemented by the business segments MRO (Maintenance, Repair, Overhaul), IT Services and Catering. The Lufthansa Group includes over 400 subsidiaries and associated companies. The Lufthansa brand – honored as best corporate brand in the context of the competition “Best Brands 2008” organized by Germany's Society for Consumer Research – has always been a synonym for innovation, reliability, quality and safety. At the end of 2007, the company counted 105,261 employees and currently ranks as one of Germany's largest employers. Corporate headquarters is in Cologne. Frankfurt, Munich and Zurich are the important hubs in the airline's worldwide route network. In addition, Hamburg, Dusseldorf and Berlin are important locations for the Group. At Lufthansa, environmental awareness is a basic part of our corporate culture. For economic and ecological reasons alike, Lufthansa continuously invests in new, fuel-efficient aircraft.

<b>Passenger Transportation</b> 2007		changes compared to 2006
Revenue	15,956 million €	+18.4%
Operating result	826 million €	+102.0%
Number of employees on Dec. 31	47,230	+23.0%



→ [www.lufthansa.com](http://www.lufthansa.com)

<b>Logistics</b> 2007		changes compared to 2006
Revenue	2,736 million €	-3.8%
Operating result	136 million €	+65.9%
Number of employees on Dec. 31	4,607	+0.2%



→ [www.lufthansa-cargo.com](http://www.lufthansa-cargo.com)

### Passenger Transportation business segment

The Group's strategic business segment is Passenger Transportation. The company's airlines have leading positions worldwide. They include the Lufthansa Passenger Airlines, SWISS (which has been fully consolidated since July 1, 2007), Germanwings and the equity investments in British Midland and SunExpress. Lufthansa is characterized by a comprehensive product portfolio, which addresses each market segment with custom-made offerings. In December 2007, Lufthansa acquired 19 percent of the shares in JetBlue Airways Corporation. It has thus become the first European carrier to hold a significant equity stake in a U.S. airline. At the end of 2007, this business segment's fleet comprised 494 aircraft.

### Logistics business segment

Within the Group, Lufthansa Cargo AG is responsible for the air freight business. Measured by the quantity of freight transported, the company ranks number two among the internationally important freight carriers. The wholly-owned Lufthansa subsidiary operates 19 MD-11F cargo aircraft and also utilizes the freight capacities of Lufthansa passenger aircraft; additional freight capacities are chartered as the need arises. Lufthansa Cargo offers a broad range of services in the airfreight segments “Standard” and “Express,” which it complements with special shipments. In 2007, the airline's route network comprised about 360 destinations worldwide. In cooperation with Shenzhen Airlines and the German Investment and Development Association, Lufthansa Cargo founded the Chinese cargo airline Jade Cargo International. It serves destinations in Asia and Europe from the prosperous business location Shenzhen. Moreover, Lufthansa Cargo and DHL Express jointly founded the cargo carrier AeroLogic. Starting in spring 2009, the company is set to operate its own intercontinental freighter fleet, consisting of 11 new Boeing 777-200LRs, from its hub in Leipzig. Lufthansa Cargo AG has its headquarters in Kelsterbach near Frankfurt.

**Maintenance, Repair and Overhaul (MRO)**

2007		changes compared to 2006
Revenue	3,571 million €	+ 4.6%
Operating result	293 million €	+ 18.1%
Number of employees on Dec. 31	18,892	+ 2.5%



→ [www.lufthansa-technik.com](http://www.lufthansa-technik.com)

**IT Services**

2007		changes compared to 2006
Revenue	679 million €	+ 4.1%
Operating result	23 million €	- 53.1%
Number of employees on Dec. 31	3,102	- 6.6%



→ [www.LHsystems.com](http://www.LHsystems.com)

**Catering**

2007		changes compared to 2006
Revenue	2,396 million €	+ 5.2%
Operating result	100 million €	+ 100.0%
Number of employees on Dec. 31	30,101	+ 5.4%



→ [www.lsgskychefs.com](http://www.lsgskychefs.com)

**MRO business segment**

With a market share of 15 percent, Lufthansa Technik AG is the world's leading provider of maintenance, repair and overhaul (MRO) services for civil aircraft. The Hamburg-based wholly-owned Lufthansa subsidiary offers a broad service portfolio in maintenance, repair and overhaul of civil aircraft to more than 600 customers worldwide. The Technik Group, which comprises 28 companies, is subdivided into six production divisions: Maintenance, Overhaul, Engines, Components, Landing Gear and VIP Jets. While the most important center for overhaul, logistics and development is located in Hamburg, the largest maintenance operations in Germany are located in Frankfurt, Munich and Berlin. In January 2008, Lufthansa Technik inaugurated the first phase of the new maintenance hangar for the Airbus A380 in Frankfurt. Lufthansa Technik also offers comprehensive services at its European operations in Ireland, Hungary and Malta. To take specific advantage of the growth potential in emerging countries in Asia, the company has operated the joint-venture Ameco Beijing in cooperation with Air China for 18 years, and it has run a large operation in the Philippines since 2000.

Lufthansa Technik is the world's first company in the MRO industry to hold an integrated certification in accordance with ISO 14001 (quality), EMAS (environment) and OHSAS 18001 (job safety).

**IT Services business segment**

Lufthansa Systems AG is one of the world's leading IT service providers for the airline and aviation industry. The system integrator looks after more than 200 customers worldwide and offers the entire spectrum of services based on information technology. These services range from consulting, development and implementation to the operation of future-oriented IT solutions. The business segment includes the divisions Airline Management Solutions, Passenger Airline Solutions, Airline Operations Solutions, Industry Solutions and Infrastructure Services. Taking advantage of its IT platform strategy, Lufthansa Systems was again able to expand its excellent market position in the course of the reporting year. Numerous third-party airlines count on the competence of Lufthansa Systems. The company with headquarters in Kelsterbach, near Frankfurt, maintains locations in Germany and 17 subsidiaries abroad.

**Catering business segment**

LSG Sky Chefs is the worldwide leader in providing solutions for airline catering and in-flight management. LSG Sky Chefs has a worldwide market share of about 30 percent and supplies nearly all international airlines, numerous no-frills airlines and regional carriers. About 200 LSG Sky Chefs operations in 49 countries are at the ready to provide more than 300 carriers with meals, beverages and other in-flight services. In addition, the Group operates airport lounges and retail outlets at airports. As a competent response to the growing trend among airlines to outsource in-flight management, procurement and logistics, LSG Sky Chefs and Kühne + Nagel, the worldwide leader in logistics services, founded the joint-venture "SkylogistiX" in fall 2007. LSG Sky Chefs has its headquarters in Neu-Isenburg, near Frankfurt.

**Lufthansa service and finance companies**

The Lufthansa Group complements its five business segments with service providers in the finance and service industry sectors. Among others, these include the Lufthansa Commercial Holding GmbH (LCH), the Lufthansa AirPlus Servicekarten GmbH, the Lufthansa Flight Training GmbH, and financial companies such as Delvag Luftfahrtversicherungs-AG, Albatros Versicherungsdienste GmbH and Delvag Rückversicherungs-AG.

## Corporate Governance

## Principles of Strategy of the Lufthansa Group

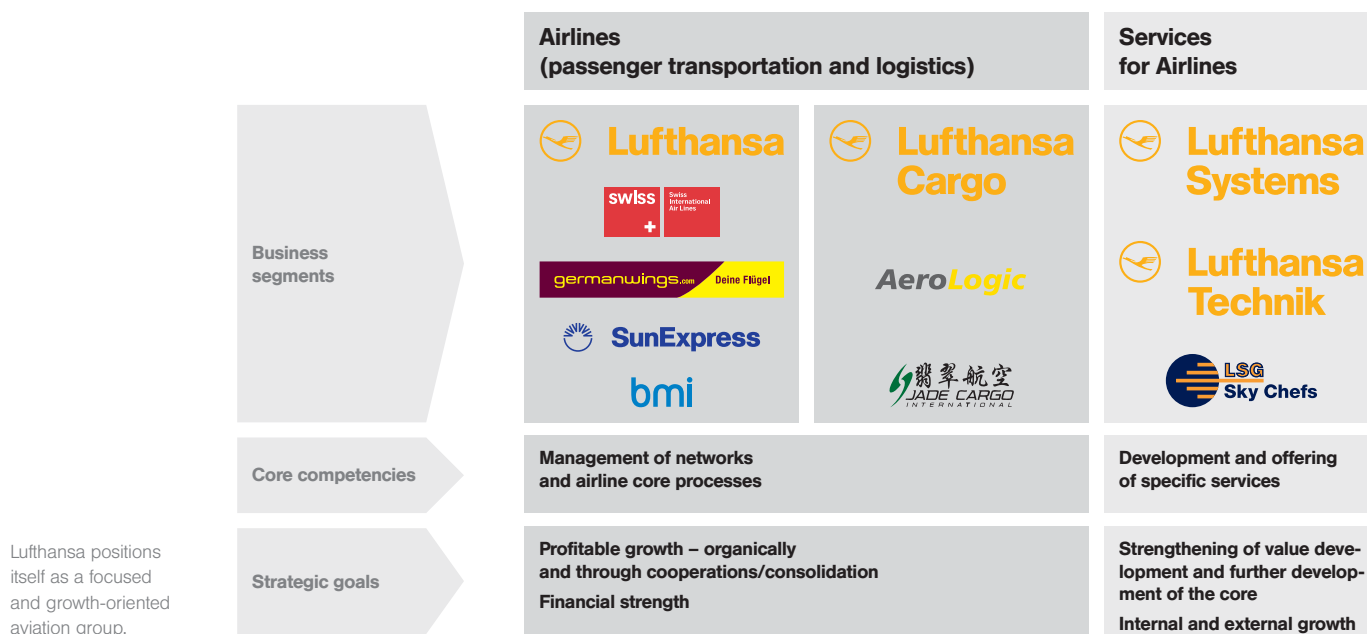
Flying is one of mankind's oldest dreams. Today, this dream has nearly become a self-evident part of daily life. To help to make this dream come true for as many people as possible, Lufthansa has taken an active role in the development of the air transport industry ever since its founding. The ability to develop future-oriented, innovative ideas and to translate them into new products will remain an important driving force in the future to increase the Group's attractiveness to our customers.

### Focused aviation group

Lufthansa has evolved from a monolithic company with structures guided by functions to a successful global corporation with a number of distinct business segments. Today, the company's strategy positions Lufthansa as a focused aviation group with an emphasis on passenger transportation. With regard to competencies and values, the Passenger Transportation business segment is of strategic value for the Group, and we intend to strengthen it further and expand its profitability. Profitable growth supported by the respective core competencies is also developed in a targeted manner in the other business segments. The relevance of these business segments within the Group's portfolio is determined by the degree to which they can act as service providers with regard to key factors of production and infrastructure, thus strengthening or complementing the ability of Passenger Transportation to further develop and build its competitiveness. This, as well as their dependence on the core business, determines their development and long-term presence in the Group.

### Profitable growth and financial strength

The Group's main goal is long-term profitable and value-adding growth. For this purpose, the position of the airline and its partners is being strengthened and expanded in the "stronghold Europe." At the global level, the Group offers the largest network by acting in coordination with Star Alliance. To secure our strategy of growth and to maintain strategic options for action, we also aim to stabilize our financial strength.



Lufthansa positions itself as a focused and growth-oriented aviation group.

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## **Our values are the basis for reaching our goals**

### **Focus on customer benefits**

The customer is the focal point of our business activities. We consistently tailor our services to customers' needs and offer specific products under the Lufthansa premium brand. Using our multi-product approach, we offer our customers mobility à la carte – from Budget to First Class – at tried-and-tested Lufthansa quality. All our efforts are service-oriented and synonymous with quality, innovation, competence and reliability.

### **Accent on core skills**

We consistently align our activities with our core skills. Those skills encompass management of flight networks, airline core processes such as operating processes on the ground, as well as the provision and maintenance of infrastructure and production factors.

### **System partnerships set the pace**

Intensive system integration strengthens our competitive advantage over other locations, airlines and alliances. We cooperate closely with major partners, suppliers and infrastructure providers in integrating and optimizing our core processes.

### **Attractive working environment**

Our staff is integral to our success. We offer them good working conditions, commensurate incentives for personal development and an energizing, international corporate culture. That makes us an attractive employer for qualified, motivated and service-minded personnel.

### **Long-term profitability**

In the interests of our investors, we strive for sustainable and pacesetting value creation in the aviation business. That goal is furthered by sound risk and financial management.

### **Social responsibility**

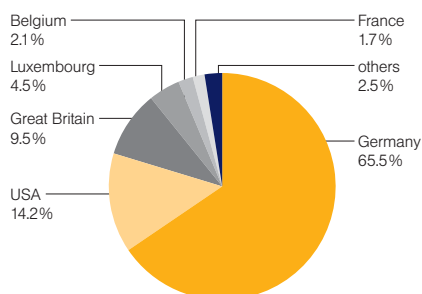
We are committed to maintaining a balance. Environmental protection, sustainable development and long-term support for social projects are in equal measure prime objectives of our corporate policy.



Sustainability is an integral part of our corporate culture, and its management is organized as depicted above.

#### Shareholder structure by nationalities

on 31.12.2007, in percent



## Value-oriented corporate policy

The Lufthansa Group pursues corporate policies which aim at profitable and sustainable growth while striking a balance between economic, ecological and social goals. That "responsibility" is not just lip service at Lufthansa is proven by the intense dialogue with the Group's stakeholders (see also page → 15).

### Management and corporate structures

Lufthansa is a German stock company with headquarters in Cologne. The company employs the dual management structure ordinarily followed in Germany, consisting of an Executive Board and a Supervisory Board. While the Group's Executive Board is solely responsible for steering the company, the Group's Supervisory Board elects, monitors and advises the Executive Board. The basis for the organization of the Lufthansa Group's management and monitoring structures is formed chiefly by the German Stock Corporation, the Codetermination and Capital Market Acts, as well as the Articles of Association and the company-specific Corporate Governance Code.

Deutsche Lufthansa AG fulfills two functions: It is not only the ultimate parent company but also the largest operating company within the Group. The Group's five business segments are individually responsible for their respective operations and results, and they report directly to the Group's Executive Board. Their management teams are continuously monitored by the respective supervisory bodies.

### Shareholder structure

According to the standards of Deutsche Börse, the free-float quota was at 100 percent for Lufthansa shares at the end of 2007. Among the largest shareholders are AXA Group, Barclays Global Investors and Dr. Lutz M. Helmig. The share of German shareholders stood at 65.5 percent on December 31, 2007. To maintain international air traffic rights and its air transport operating license, Lufthansa must be able to demonstrate at any time that the majority of company shares is owned by German interests.

For more detailed information on the shareholder structure, please see the Annual Report 2007 on page → 26.

### Corporate Governance

Responsible company management in line with the rules of effective corporate governance is a substantial part of Lufthansa's identity. The efficient and transparent structures and processes implemented by the company reflect this approach splendidly. Furthermore, Lufthansa places the greatest importance on open and clear corporate communications in order to respond to demand for information from shareholders, employees, customers and interested publics – thus preserving and strengthening their trust in the Group.

Against this background, the Lufthansa Group welcomes the German Corporate Governance Code. On December 5, 2007, the Executive and Supervisory Boards passed an updated unqualified Declaration of Compliance. In addition, the Group also fulfills the majority of voluntary suggestions of this standard, which is accepted around the world. Furthermore, during the Supervisory Board's September meeting, the Executive and Supervisory Boards formed the Nomination Committee recommended in 2007 by the German Corporate Governance Code. This committee met in December 2007 for the first time.

## Compliance

Adhering to social guidelines and standards in everyday corporate life is a self-evident duty. No additional regulations are needed for this purpose, which is why Lufthansa has no Code of Conduct of its own. We give our particular attention to ensuring a corporate culture that guarantees adherence to regulations and to creating a framework of conditions that promotes this approach. Our Compliance Program, which was introduced in September 2004, also serves this purpose. Its goal is to give employees specific information, familiarize them with important legal regulations and anchor these in their daily work. The Lufthansa Compliance Program currently comprises the building blocks Competition, Capital Markets, Integrity and Corporate Compliance.

While Competition Compliance is geared above all to employees who deal with issues related to competition in their daily work, Capital Markets Compliance addresses issues concerning insider law and ad-hoc publicity. Since 2006, Lufthansa has guarded against corruption with its newly introduced program module Integrity Compliance, which among other things includes guidelines for dealing with invitations, gifts and other forms of attention. Moreover, as an additional preventative measure against economic crimes and to protect its reputation and assets, Lufthansa named an ombudsman on December 1, 2007. Finally, Corporate Compliance links all existing company regulations and creates a connection to other compliance-relevant areas.

Given the issue's importance, Lufthansa set up a Compliance Office in its central legal department on October 1, 2007. Furthermore, Compliance Officers were named at the Group companies, who ensure the Group-wide adherence to the Compliance Program and report undesirable developments to the Compliance Office. The Compliance Officer regularly reports to the Review Board of the Supervisory Board.



### Principles of the "UN Global Compact"

#### Human rights

1. Businesses should support and respect the protection of international human rights within their sphere of influence and
2. make sure their own corporations are not indirectly linked to human rights abuses.

#### Labor

3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
4. eliminate all forms of forced and compulsory labor;
5. effectively abolish child labor; and
6. eliminate any discrimination in respect of employment and occupation.

#### Environment

7. Businesses should support a preventative approach to environmental challenges;
8. undertake initiatives to promote greater environmental responsibility; and
9. encourage the development and diffusion of environmentally friendly technologies;

#### Anti-corruption

10. Businesses should work against corruption in all forms, including extortion and bribery.

## Ethics at Lufthansa

All activities of the Group and its employees are in accordance with the basic principles of human community. Lufthansa also documents this aspiration through its memberships in numerous organizations, which oblige the Group to practice ethical business conduct and respect human rights.

In 2002, Lufthansa became the first airline worldwide to adhere to the universal principles of the UN Global Compact. The goal of this initiative, launched by former UN Secretary-General Kofi Annan, is to convince companies with international activities to adopt ethically responsible conduct with regard to human rights, labor, the environment and the fight against corruption and to promote the principles of the Global Compact in an active manner. In addition, Lufthansa is also a member of the International Chamber of Commerce (ICC Deutschland), Transparency International and Deutsches Netzwerk Wirtschaftsethik e. V., to name but a few.

Beyond this, the Group has not only implemented the suggestions of the ICC commission "Business in Society," but it also adheres to the 16 principles of environmental management spelled out in the ICC's "Charter for Sustainable Development." These include, for example, an environmentally-oriented management approach as a priority goal, training for employees with regard to environmental issues, and impact assessment and research studies to record and reduce the effects of products, procedures, emissions and wastes. Moreover, Lufthansa adheres to the ICC's "Conduct Guidelines to Combat Corruption in Business Dealings."

→ [www.icc-deutschland.de](http://www.icc-deutschland.de)

→ [www.unglobalcompact.org](http://www.unglobalcompact.org)



### **Responsibility for employees and society**

Economic success and socially responsible conduct are not contradictory for Lufthansa. This concept applies here as well, as only those companies that react appropriately to changes in the social, economic and political framework can survive long-term in the market. Therefore, the identification and development of options to increase flexibility play an important role in enabling the company to compensate for economic swings both across the Group and in individual subsidiaries. At the same time, this allows us to accommodate the preferences of our employees even better than before.

### **Risk management**

The basis for the strategic evolution of the Lufthansa Group is its financial stability. To secure its growth strategy and implement it profitably, Lufthansa always ensures that its investment activities are financially secured. In addition, the company operates an effective Risk Early Warning and Management System and is thus able to control opportunities and risks in a reliable fashion as they arise. Risk management at Lufthansa focuses on operational risks as well as financial and economic risks.

Safe flight operations are one of the key promises associated with the Lufthansa brand. The Group honors this promise with extraordinarily high safety standards – both in training its crew members and maintaining its aircraft. Regular training helps ensure that all processes and procedures in the operative business function smoothly.

On the economic side, Lufthansa needs to assess risks related to capacities and utilization as well as in the areas of strategy, labor agreements, information technology, financing and treasury. To manage these risks, Lufthansa counts on appropriate control mechanisms and management techniques adapted to specific risks. The analysis of risks, including options available for limiting and handling them, is anchored in strategy development and thus flows into operative Group planning. For example, Lufthansa limits the risk of rising costs resulting from changes in fuel prices, interest rates and foreign exchange rates by applying systematic security management.

On behalf of the Group's Supervisory Board, the Risk Management Committee ensures that the company continuously identifies and evaluates risks across the boundaries of functions and processes. The most important instrument at the committee's disposal is the "risk landscape," which documents all significant risks. Lufthansa revised the risk landscape comprehensively in 2007. Its structure is now guided even more closely by the process of risk management, which comprises identifying, steering, communicating and controlling. In addition, an Opportunities and Risks Report, which was first introduced last year, allows the Group to track opportunities and risks including their effect on the result over the course of the entire year.

For more detailed information on risk management, please see the Annual Report 2007 from page → 101.



## Stakeholder dialogue



## Trust is the basis for success

Guiding a company in a responsible manner is only possible by maintaining a dialogue with its stakeholders. For this reason, Lufthansa actively seeks a constructive and critical exchange with those stakeholder constituencies who are open and willing to help shape the future in sustainable ways. The Lufthansa Group understands the integration of stakeholder groups in corporate decision-making processes as a continuous process. The company not only conducts this dialogue on various levels but also incorporates the insights it gains from this exchange into its actions.

In 2007, numerous meetings with a broad range of stakeholder constituencies took place:

### Stakeholder dialogue

Stakeholder group	Facts
<b>Customers</b>	<p>Meetings of the Customer Advisory Boards (event-related).</p> <p>Active customer dialogue, regular worldwide customer surveys with the most renowned institutes.</p> <p>Customer Satisfaction Survey 2007: The Customer Profile Index reached 7,434 points in 2007 – another record high and an increase of 140 points compared with the previous year.</p>
<b>Employees</b>	<p>Daily communication via the Lufthansa intranet, weekly employee newspaper "Lufthanseat," additional internal publications for specific target audiences.</p> <p>Employee dialogue: including Town Meetings and Open Door Executive Board (members of the Executive Board in discussion with employees).</p> <p>Works meetings.</p> <p>Employee development discussions.</p> <p>Employee Survey 2007 at Lufthansa Technik and Lufthansa Flight Training, Employee Feedback Management (EFM) in 2008 at Deutsche Lufthansa AG.</p>
<b>Shareholders and analysts</b>	<p>Corporate presentations at bank events and share forums.</p> <p>Continuous expansion and improvement of the information offered to shareholders and analysts. All information and the speeches given by the Chief Executive Officer and the Chief Financial Officer are published on <a href="http://www.lufthansa-financials.com">www.lufthansa-financials.com</a>.</p> <p>Monthly "Investor Info."</p> <p>Conferences and telephone conferences with participation of members of the Executive Board.</p> <p>Investors' Day at the Lufthansa Aviation Center at Frankfurt Airport for the fourth time in a row.</p> <p>Road shows and investors' conferences with participation of members of the Executive Board and representatives of Investor Relations in Europe and the USA. In 2007, about 400 individual and group discussions were held with institutional investors and analysts.</p>
<b>Neighbors and local communities</b>	<p>Regular discussions with representatives of governments of German Länder, mayors and neighboring communities as well as authorities at the hubs in Frankfurt and Munich.</p> <p>Parliamentarian evenings at the level of German Länder and federal level (Berlin).</p> <p>Discussions and forums concerning the topic of airport expansion.</p> <p>Invitations to interested people and institutions from the surrounding area to visit the Lufthansa Base in Frankfurt.</p> <p>"Lufthansa Taster Days" at Lufthansa Technik for pupils from six schools located in communities close to Frankfurt Airport.</p>
<b>Science and education</b>	<p>Cooperations with partners from science and education.</p> <p>Educational initiative "Lufthansa Experience Knowledge" in cooperation with the Ministry of Education and Cultural Affairs of the state of Hesse.</p>
<b>Politicians and authorities</b>	<p>In 2007, participation of members of the Group's Executive Board and/or Executive Board in: parliamentary evening Brussels (air transport and climate protection), Tourism Committee of the German federal parliament (sustainable tourism), parliamentary evening Berlin/Deutsches Verkehrsforum (climate protection in air transport), climate protection congress of the CDU/CSU group in the Bundestag (German federal parliament), Econsense annual conference (corporations and climate protection), Royal Aeronautical Society, London, Aspen Institute.</p> <p>In addition, active participation at management level in numerous political, public events (e.g. Hessian Climate Protection Forum, Transport Committee of the German Lower House of Parliament, Dräger Stiftung Washington).</p>
<b>Suppliers and contractual partners</b>	<p>Partnership-oriented business relations, based on an honest and binding dialogue.</p>
<b>NGOs</b>	<p>Active dialogue, support for national and international environmental and species-protection organizations, support for a number of aid projects.</p>

## Panorama

### Lufthansa Cargo coordinates “e-freight” in Germany

Lufthansa Cargo will work even more closely with the International Air Transport Association (IATA), the worldwide association of airlines. Since March 2008, the Lufthansa subsidiary has been coordinating the second test phase of the global IATA initiative “e-freight” in Germany and is driving all relevant processes forward. The goal of “e-freight” is a paper-free, computer-supported form of air freight transport, which offers cargo airlines numerous advantages. This way, they benefit not only from significantly simplified processes and higher data quality, but also from improved customer service at lower costs. But above all, the digitalization of air freight management allows a considerable reduction in the worldwide volume of freight documents, which currently could fill 39 Boeing 747-400 freighters a year. The starting signal for the “e-freight” project was given in 2004 in the context of the IATA initiative “Simplifying the Business;” the first pilot phase followed in 2007 in five markets.



### Lufthansa again on the Dow Jones Sustainability Index

Performance pays off: Following its listing in 2006/2007, Lufthansa again qualified in 2007/2008 for the Dow Jones Sustainability World Index (DJSI World) – as one of only four airlines worldwide. The index, which is supervised by the Swiss company SAM Sustainable Asset Management Indexes GmbH, lists those 10 percent of companies in an industry who are seen as leaders in sustainability issues. In addition, Lufthansa achieved an appreciable increase over 2006/2007 with regard to the three assessment dimensions: economy, environment and social responsibility. The Group received top grades in the categories network management, efficiency and environmental reporting. Overall, Lufthansa achieved its highest total score since its first listing in 1999.

Moreover, Lufthansa was listed in SAM’s “Sustainability Yearbook 2008.” This publication is considered the most comprehensive reference work worldwide for the evaluation of corporate sustainability performance. Only the top 15 percent from 57 industry sectors are included. With the publication of the 2008 edition, the SAM Group introduced a classification system that ranks the companies listed in the yearbook. Here, Lufthansa received not only the distinction “SAM Gold Class,” but was also honored as “Sector Mover.” This rating is reserved for those companies that have achieved the most significant progress with regard to sustainability in their industry sector.

In addition to the DJSI World, Lufthansa is also listed on the FTSE4Good and ASPI indexes as well as in the Ethibel investment register.



### Training course Aviation Professional celebrates its 50th anniversary

In 2007 Lufthansa celebrated a very special anniversary: 50 years of training courses for Aviation Professionals. More than 1,500 junior employees have trained for this multifaceted profession since 1957. The three-year training period is above all characterized by its pronounced practice orientation. Be it marketing, finance or accounting, network management, check-in or aircraft handling: there is hardly a functional area that the professionals-to-be do not get to know in detail. More than half of the graduates are currently employed by the Group. And since 1996, the company has offered this training course steeped in tradition in combination with the university study course Aviation Management, which leads to a Bachelor of Science degree.



## Lufthansa Technik inaugurates new hangar for the Airbus A380

In January 2008, following a 20-month construction period, Lufthansa Technik inaugurated the first 25,000-square-meter section of its new A380 maintenance hangar at Frankfurt Airport. Effective immediately, two Airbus A380s or three Boeing 747s can undergo maintenance in the hangar simultaneously. The entire hangar system, with a maintenance capacity of four A380s, is to be completed by 2015. Lufthansa is investing about 150 million euros in Europe's largest aircraft hangar and thus underscores its commitment to Frankfurt as an operational location. Starting in 2009, the new hangar will be used for the maintenance of Lufthansa's new flagship, the A380. The airline has placed firm orders for 15 of the aircraft. Special cranes with a lifting capacity of up to 12 tonnes will then be able to lift the A380's engines as needed during maintenance. Moreover, stable cherry-pickers and mobile working platforms will ensure safe access to all systems of the new wide-body aircraft.



## New Lufthansa lounge for children

A movie corner, popcorn, table soccer, jelly bears, Internet – Lufthansa knows what children like. At the newly designed Lufthansa Children's Lounge in Frankfurt, now measuring a full 160 square meters, everything has focused on the needs of unaccompanied young travelers since October 2007. The goal is to make sure that these pint-size passengers already feel on top of the world as customers, and that they reach their destinations safely and smoothly in equal measure. Employees of Lufthansa's Special Care Service assist unaccompanied children at check-in, lead them on their way through security checks and escort them to the departure gate.

## LSG Sky Chefs: Rainwater washing facility for lifting vehicles

Smart ideas from the employees' ranks not only save hard cash; they also help to protect the environment. In 2007, employees at LSG Sky Chefs in Brussels came up with an idea that is particularly sparing of natural resources: Instead of washing lifting trucks with precious freshwater, the washes are now carried out with rainwater. This became possible after the installation of two collecting tanks in the LSG building, which catch and store the rainwater until it is needed. Thanks to this independent employee initiative, about 2,400 cubic meters of freshwater can be conserved every year. And there is a good chance that this innovative model will soon be adopted by other locations of LSG Sky Chefs as well.







## Lufthansa prefers environmentally friendly paper

Being a member of the initiative "Pro Recyclingpapier" means that environmental care at Lufthansa also extends to the selection of the "right" paper. In January 2008, the company switched its in-flight publications "Lufthansa magazin" and "Lufthansa exclusive" entirely to recycled paper. With this measure, the Group conserves 2,100 tonnes of paper made from fresh fibers per year. The new paper is certified by the nonprofit organization Forest Stewardship Council (FSC). Moreover, as it is made from 100 percent wastepaper, its production also consumes considerably less water, energy and wood.

Lufthansa also makes a sustainable contribution to energy and resource conservation by having decided in August 2007 to print the briefing documents for its crews on recycled paper. The resulting savings – 84 tonnes of wood, 1.4 million liters of water, 300,000 kWh of primary energy and about 8 tonnes of emissions – all benefit the environment. And the Lufthansa Annual Report 2007 was also printed on FSC-certified recycled paper.

## Jets for pilot training

244 new student pilots began their training course at Lufthansa in 2007. Starting in fall 2008, Lufthansa will use jets to train its future pilots for the first time. These twin-engined Citation CJ 1+ aircraft, produced by U.S. manufacturer Cessna, reach a top speed of 720 km/h and have a range of about 2,400 kilometers. Delivery of the four jets starts in October 2008 and is to be concluded by mid-2009. With the modernization of the training fleet, the starting signal has also been given for the new training concept introduced at the pilot school in Bremen in early 2008. The curriculum is now even more strongly oriented towards the specific flight operations of a scheduled airline with worldwide operations, allowing prospective pilots optimum training options for a smooth switch into the cockpit of a Lufthansa Airbus or a Lufthansa Boeing aircraft.



## Lufthansa acquires a stake in JetBlue

Since January 2008, Lufthansa has held a 19-percent stake in U.S. carrier JetBlue Airways. This makes Lufthansa the first European airline to hold a significant equity share in a quality-oriented U.S. point-to-point carrier. With this partnership, Lufthansa strengthens its position in the American market and also complements the route network of the Star Alliance partners.

→ [www.jetblue.com](http://www.jetblue.com)



## Efficiency in the galley

By deploying new steam ovens in the galleys of its new Airbus A330s and A340s, Lufthansa has just about managed to square the circle: The new ovens manufactured by B/E Aerospace are up to 4.2 kg lighter than conventional models. Moreover, they heat meals more gently by using pressurized steam, which appreciably improves the food's quality and visual appearance.

There are 19 ovens aboard a Lufthansa A340-600, and there will be as many as 27 aboard the Lufthansa A380. This means the new steam ovens also provide an important weight savings, which in turn has a positive effect on fuel consumption and the environment.



## Almost 10,000 new hires in Germany since 2006

Lufthansa is growing organically – also with regard to the number of people it employs. In 2007 alone, 3,000 new jobs were created, above all in the service professions. The year before, 2,500 new jobs were generated. On average, over 300 applications were received for every job offered in 2007 – eloquent testimony to the positive image the Lufthansa Group enjoys in the job market. In 2008, Lufthansa will even hire more than 4,000 new employees.

## Renewable energy for the new Training Center

For the new building at its Training Center in Seeheim, Lufthansa is counting strongly on renewable energies: The low-energy concept of this remarkable building, which will be ready for occupation at the end of 2008, includes a geothermal plant, whose 63 earth probes were installed successfully last year. A heat pump will absorb the ambient heat stored in these probes and pump it to the higher temperature level of the building's heating system. The usable heat thus produced is four times greater than the heat pump's electricity consumption. The advantages: a lower consumption of primary energy, lower CO<sub>2</sub> emissions, and annual cost savings adding up to a five-digit euro amount.



## Our business

# Personalized customer dialogue as a factor of success

At Lufthansa, the focus is always on our customers. Their satisfaction is the very basis not only for the strength of the brand but also for the economic success of the company. Against this background, Lufthansa has continuously expanded its dialogue with customers and above all optimized its Feedback Management, meaning the way the airline handles its customers' comments.





Among the specific performance characteristics associated with Lufthansa are technical and aeronautical competence, safety, professionalism, reliability, quality – and personalized customer service. The airline has once again improved this service appreciably with the successful introduction of a Customer Relationship Management (CRM) system. Over a period of five years, Lufthansa has built up this new interlinked, IT-supported system for managing relationships with customers, which adequately accounts not only for the rising expectations of passengers but also for the aspirations of a fast-growing premium carrier.



Individual caring – at Lufthansa, the passenger is always the center of attention.

#### **New customer-oriented services thanks to CRM**

The CRM system comprises both active communication services via the Internet and mobile telephone services. With support from CRM, Lufthansa is able to offer its passenger new customer-oriented services in a targeted manner. At the same time, the system allows passengers a faster, simpler dialogue with Lufthansa. For example, it recognizes registered customers by their telephone numbers. That means employees at the call center already have basic information on these callers at their disposal and only need to ask for the specific flight dates to make reservations. At check-in, for instance, the system automatically points out to employees when they can offer a customer an upgrade to a higher class of comfort against available miles. Should there be a change in departure gate, passengers receive an SMS to this effect if they have registered for the SMS service beforehand on → [www.lufthansa.com](http://www.lufthansa.com). In addition, shortly before departure the cabin crew receives a list with current flight and customer information, allowing crew members an even more individual dialogue with their passengers.

#### **From reservation to arrival – the Lufthansa service chain**

Lufthansa decided to put the CRM system in place because the airline's services have become ever-more complex in recent years. They now range from electronic, paperless tickets and seat assignments and check-in via mobile telephone or computer to boarding, service during the actual flight and looking after passengers once they have arrived at their destinations. At the same time, the number of services Lufthansa offers in the framework of Star Alliance and code-sharing has also increased considerably. Often, these partner companies take over the tasks of passenger handling, which leads to the need for systematic quality assurance and control.

But the increasing complexity of service processes and technologically ever-more involved forms of communication also mean that the service chain's potential sensitivity to errors rises in tandem.

At more than 60 million passengers a year, Lufthansa receives annually about 200,000 reactions by mail, fax, e-mail or via its Internet page → [www.lufthansa.com](http://www.lufthansa.com). These customer responses fall into three categories: praise, neutral commentaries with suggestions for improvement, and criticism. Handling complaints is of particular importance in this context. The goal is to restore these customers' satisfaction and to stabilize their relationship with the airline long-term.



### **Baggage and flight irregularities – the most common causes for complaints**

Lufthansa defines complaints as customer reactions in the form of negative feedback and demands which refer to a specific event within the service chain. Customer Feedback Management is always activated whenever such customer reactions reach the company. Those aspects of product and service that a passenger deems insufficient during a journey are to be remedied directly by CFM employees on the spot. When it comes to complaints, the most frequent causes are damaged or lost baggage and flight irregularities. "Above all, when fog, ice and snow have been too great a hindrance to air traffic, complaints start piling up in our organization," reports Thomas Storbeck, Team Manager International Feedback Management (IFM).

One of the airline's maxims is that its employees respond to each customer response worldwide as promptly as possible – within 14 days at the very latest. This response time depends on a number of factors, including the type of subject matter, customer status – naturally, HON Circle Members enjoy the highest priority – and choice of communication channel. Thus, employees respond to e-mails within seven days, while the time window for letters is somewhat longer.

The processes in Customer Feedback Management are clearly defined, structured and professionalized, in part with the aid of intelligent text processing systems. "Nevertheless, it is a basic principle at Lufthansa to respond to each customer as individually as possible," says Storbeck. "While a swift response has a high priority, the quality of response is our very first consideration. By maintaining this kind of high standard, we distinguish ourselves significantly from other airlines," he adds.

### **Electronic procedures speed up the handling process**

Lufthansa operates its worldwide distributed Customer Relations Centers, where customer reactions are handled, in cooperation with external partners. To optimize the processes in its feedback management further, the Group counts increasingly on electronic procedures in dealing with responses. For example, a large part of incoming mail is scanned and distributed automatically. Today, the system already recognizes the language; tomorrow, it will be able to identify the subject matter and tone of complaints by means of intelligent software. Not only does this speed up the handling process, but it also provides Lufthansa valuable information for its quality management and quality assurance.

Before new employees start responding to customer reactions, they receive intensive, well-founded basic training. In this context, they refresh their knowledge of key processes and procedures along the service chain. During the first weeks of work, experienced colleagues support these newcomers by handling customer feedback together with them. Training on conducting customer-oriented phone calls rounds off the education of these service professionals in the continued course of their work.



The swift and secure transport of baggage has the highest priority for us and for our customers.

To respond to customer feedback in an appropriate manner, employees first need to know the entire Lufthansa service chain – along with the computer systems used. Then, they need to be familiar with legal regulations, conditions of transport, fare rules and agreements in the framework of Star Alliance. Further factors that flow into responding to a complaint are the customer's status, his or her feedback history and the particularities of the experienced situation.

### **Understanding the customer's real concern**

"In the framework of Customer Feedback Management, we've made it our task at Lufthansa to understand the customer's concern and to respond to it in an appropriate manner. This is our key goal, which we want to achieve every day," explains Meike Schönwandt, Team Leader Customer Relations (CL) at Lufthansa. If a passenger has suffered a financial loss, then monetary compensation becomes the focus of attention in responding to his or



her complaint. Should a flight be canceled due to bad weather, for example, passengers might have to cancel hotel reservations as they will not reach their destination on time. But such adverse effects can not always be measured in money. The same goal applies when passengers complain after a journey because the meal they wanted was no longer available, their seat in Economy Class was soiled, or the in-flight entertainment did not function. "In such cases, our employees need to try to understand the extent of the nonmaterial damage for these customers," says the CL Team Leader. In this type of situation, the willingness to accommodate within reasonable limits calls for appropriate gifts as compensation.

Further challenges for the globally active airline are the international aspects of feedback management and the diversity among customers. "This is why we take worldwide differences in cultural requirements and mentalities into consideration

"For a service company like Lufthansa, a pronounced service culture and the continuous striving for improvements for the benefit of our customers are important factors of success."

Meike Schönwandt  
Team Leader Customer Relations at Lufthansa



when responding," Storbeck explains. "It's not enough to simply translate a response letter formulated in Germany. In Italy, for example, our responses need to take a much different tone," the IFM Team Leader illustrates. "In Japan, a detailed response and the longer response time associated with it are seen as





an expression of respect. It shows that we have considered the customer's concern intensively and seriously before we get back to him or her."

This kind of attention to detail is but one example of the unrelenting demands that Lufthansa places on its Customer Feedback Management. A comprehensive quality management system ensures that the same high standards will be met in future as well. This includes quality audits that entail the monitoring of all related processes and work procedures. Regular reports, analyses and evaluations help to increase the level of customer orientation. "For a service company like Lufthansa, a pronounced service culture and the continuous striving for improvements for the benefit of our customers are important factors of success," says Meike Schönwandt. For this reason, Lufthansa has set itself ambitious goals for the future in the area of feedback management: To begin, the airline plans to further improve the efficiency of its processes and procedures in this area by means of inno-

vative IT support. Beyond that, Lufthansa aims at further developing the service mentality companywide, and the "we'll-take-care-of-it" approach even more strongly.

#### **Managers in dialogue with customers**

The most recent example of this endeavor is Lufthansa's newly developed program "Managers in dialogue with customers." In this framework, Lufthansa managers respond to customer feedback by initiating direct telephone contact with those concerned. Initial reactions show that this new building block in feedback management is very well received among passengers. These phone calls tell customers just how seriously the company takes their concerns. Once again, the goal is to support a positive perception on the part of the customer in the context of an isolated negative event. Besides, Lufthansa managers gain additional insights into passenger experiences this way and become even more sensitive to passenger needs in the process.



Increasing passenger numbers are an ongoing challenge for Customer Relationship Management.

**Customer Relationship Management**

Customer Relationship Management (CRM) comprises the activities a company uses to shape its relationship with customers. This includes, for example, the electronic documentation, administration and analysis of customer data. One of CRM's goals is to offer customers optimum service, ensure their loyalty long-term and thus increase the company's success. Against the background of ever-intensifying competition, the importance of generating customer loyalty has increased. According to expert estimates, it can be up to seven times more expensive to gain a new customer than it is to keep a dissatisfied one. The customer information stored in databases is available to the company for all its business processes and supports its communications with customers. At the same time, the CRM system helps standardize work processes within the company and identify weak spots in the dialogue with customers.

“Our special art in feedback management is to approach customers in just the right way.”

Thomas Storbeck  
Team Manager International Feedback Management at Lufthansa



“Our special art in feedback management is to approach customers in just the right way,” Storbeck summarizes. “When we achieve that, customers are more satisfied than ever before.” That Lufthansa has taken the right path in the area of customer service is demonstrated by the passengers' reactions to the way the airline has handled their complaints. Here the final word is very often: “I'm really pleased that you reacted so well.”

This kind of quality awareness and service orientation is considered to be a particular hallmark of Lufthansa in worldwide competition. Altogether, the Group's feedback management is characterized above all by its structured processes, which benefit both the airline's customers and its employees: Customers receive a swift and detailed response to their concern. The employees receive all the necessary information via the available electronic media. Thus, the company offers better customer service while it saves on costs.

## Profitability and strategy



The team of the Group initiative “Upgrade to Industry Leadership” meets regularly to discuss the project’s progress.

## Flying past our competitors

Staying ahead of the competition: That is the declared aim of Lufthansa, which again achieved a record result last year. An important key to reaching the number-one position in aviation is known as the “Upgrade to Industry Leadership.” Lufthansa launched this Group initiative in 2007 with the goal of improving the profitability of all its business segments in a sustainable fashion. In this way, the company reacts to dependencies on a framework of economic, political, cultural and ethnic conditions that are subject to constant change.

From 400 suggestions, Lufthansa has selected about 100 projects, which make a measurable contribution to increasing economic efficiency, for the initiative thus far. They enable the Group to orient its activities even more markedly towards customer benefits and to open up new profitable markets and segments in a consistent manner. Moreover, the initiative creates conditions that allow a continuous view beyond personal horizons in a quest to generate ideas and impulses for future-oriented innovation. Furthermore, “Upgrade to Industry Leadership” promotes entrepreneurial thinking and behavior, which will allow Lufthansa to act in an even more agile, quick and efficient way in future.

Since August 2007, a team of eight specialists from across the Lufthansa Group has steered and coordinated the activities of this initiative. Not only do they develop guidelines and analyze requirements and measures in cooperation with the Group units concerned, but they also monitor the progress of the individual projects. Moreover, the team ensures that programs which the business segments had launched before the start of the initiative are integrated into “Upgrade to Industry Leadership” and interlinked in a meaningful way. Unlike the pure cost-reduction programs of the past, neither a fixed duration nor an absolute objective have been set for “Upgrade to Industry Leadership.” The aspiration to hold the leading position in competition is long-term.

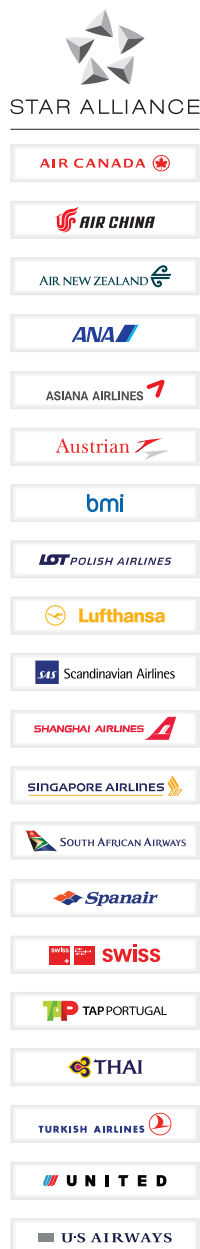
## Growth strategy

Lufthansa is determined to expand its top position in competition and become Europe’s leading network carrier with regard to attractiveness and profitability. To reach this goal, the Group is pursuing a growth strategy that rests on three pillars: the expansion of its short- and long-haul flights; the further development of Star Alliance, the most important and largest airline linkup worldwide, as well as bilateral cooperations; and the expansion of the multi-hub/multi-brand system.

### First Pillar: Expansion of short- and long-haul flights

Lufthansa grows organically by expanding its short- and long-haul flights continuously. Wherever opportunities for profitable growth become apparent, the airline offers direct connections outside its hubs as well. Of special importance in this context is the expansion of our long-haul flights from Dusseldorf. Since May 2008, three long-haul aircraft have been stationed there, flying passengers nonstop to New York, Chicago and Toronto.





### Second Pillar: Further development of cooperations

The second pillar of Lufthansa's growth strategy calls for further developing Star Alliance as well as bilateral cooperations in a focused manner. Lufthansa is one of the founding members of Star Alliance, which celebrated its tenth anniversary last year. The passengers of this airline cooperation, now comprising 20 airlines, can take advantage of a dense route network and coordinated departure and arrival times. In addition, participants in the frequent-flyer programs can collect miles on the routes flown by other Star Alliance partners as well. But it is not the customers alone who benefit. The globe-spanning linkup also makes a substantial ecological contribution: As it always allows for the shortest and most efficient connection between two destinations, both the specific fuel consumption per passenger and the emissions decline. Even more: Under the name "Biosphere Connections," Star Alliance has been a partner since 2007 of three important environmental protection organizations: the UNESCO program "Man and Biosphere" (MAB), the International Union for Conservation of Nature (IUCN), and the office of the Ramsar Convention for the protection of wetlands.

→ [www.star-alliance.com](http://www.star-alliance.com)

### New partners

By welcoming Lufthansa partners Air China and Shanghai Airlines as new members in December 2007, Star Alliance consistently expands its leading position in another important market of the future: China. In April 2008, Turkish Airlines joined the partnership as well; moreover, the acceptance of Egypt Air and Air India was approved. With regard to China, India and Russia, Lufthansa benefits in a special way from its membership in Star Alliance: Not only do these partners enable the airline to make links to strategically important growth markets, but their support also helps Lufthansa to lay the groundwork for its own organic growth.

To improve its market penetration, the Group concluded further bilateral code-share agreements in 2007. These make it possible to offer flights with shared flight numbers and thus to expand the airline's own route network: in Africa with Egypt Air and Ethiopian Airlines, in eastern Europe with Air Astana, and in Russia with AIRUnion.

### Third Pillar: Expansion of the multi-hub/multi-brand system

Whenever sensible and possible, Lufthansa grows in its markets by expanding its multi-hub/multi-brand system: By building up an integrated system of independent companies, including SWISS and Air Dolomiti, the Lufthansa network gains in size and density. Each system partner has a specialized role and acts a "center of competence" for its home market. At the same time, the Lufthansa Group thus takes an active role in the worldwide process of airline consolidation.

## The Lufthansa fleet **14 billion euros for 175 new aircraft**

A modern, well-structured fleet is an important cornerstone for a service- and market-oriented airline such as Lufthansa. The different ranges and seat capacities of the individual types of aircraft guarantee that Lufthansa can adapt optimally to the requirements of different markets. At the same time, the fleet is an important factor for the Group's future competitiveness. For this reason, Lufthansa makes continuous investments in new aircraft to secure its leading position in international air transport. Modern aircraft increase efficiency, reduce fuel and operating costs, and ease the burden on the environment. They consume less kerosene, produce lower emissions and achieve lower noise values.

Over the next eight years, the Group will acquire 175 aircraft with a list price of more than 14 billion euros – the largest fleet modernization program in the company's history. When placing the orders, the airline paid particular attention to ensuring that the number and size of these aircraft correspond to expected traffic volumes. It was also an absolute necessity to align the aircraft optimally with customers' wishes – without neglecting economic efficiency and environmental friendliness. With these new aircraft, Lufthansa will be able to achieve further success in its environmental balance sheet.

The future flagship and backbone of the Lufthansa long-haul fleet on routes with high passenger volumes will be the Airbus A380. Lufthansa has ordered 15 aircraft of this type, which are to be delivered between 2009 and 2015. Beyond that, the company will take delivery of seven A340-600s and five A330-300s in 2008 and 2009, thereby closing the capacity gap created by delays in the deliveries of the A380s. Starting in 2010, the Group's intercontinental fleet will also be modernized with 20 Boeing 747-8s.

From 2009, SWISS will receive nine A330-300s, which will serve to modernize and expand its existing long-haul fleet and to support the profitable growth of this Basel-based Group company.

By 2012, Lufthansa's short-haul fleet will be strengthened with 58 new aircraft from the A320 family, whose step-by-step deliveries began in October 2007. Germanwings and SWISS have also ordered aircraft of this type. Moreover, Lufthansa will be modernizing its regional fleet through more efficient airplanes from 2009. The Supervisory Board approved the order for 45 regional aircraft in April 2007.

On December 31, 2007, the fleet operated by the Lufthansa Group comprised 513 aircraft. It includes the aircraft of the Lufthansa Passenger Airline, SWISS (as a fully consolidated company since July 1, 2007), the regional partners Lufthansa CityLine, Air Dolomiti and Eurowings, as well as Germanwings and Lufthansa Cargo.

You find further information on the Lufthansa Group fleet as well as an overview table detailing the aircraft currently in the fleet and the orders until 2015 in the Annual Report 2007 from page → 56.



## Transport performance



In 2007, a total of 62.9 million passengers flew with the airlines of the Lufthansa Group, including 6.5 million passengers traveling on SWISS. The traffic figures of SWISS have been included in those of the Lufthansa Group since July 2007.

## More passengers than ever before

In 2007, 62.9 million passengers flew with the Group's airlines – more than ever before in the company's history. Taking all people on board into consideration – including traveling employees and the users of Miles & More bonus flights (as they too cause environmental effects) – this figure even rises to 63.1 million passengers.

In cooperation with the partners in the airline network Star Alliance and other code-share partners, Lufthansa and SWISS served 980 destinations in 103 countries at the end of the reporting year.

The traffic figures of SWISS have been included in those of the Lufthansa Group since July 2007. Last year, the Swiss airline carried a total of 12.2 million passengers. Of these, about 6.5 million traveled between July and December 2007. During this period, the airline's seat-load factor reached 81.6 percent.

The number of passengers increased in all traffic regions in 2007. The seat-load factor for the whole Group improved to 82.8 percent.<sup>1</sup> Measured in passenger kilometers transported (PKT), the Lufthansa companies occupy top positions in all important traffic areas. For example, Lufthansa and SWISS are market leaders for flights in Europe and to North America.

In European traffic, Lufthansa and SWISS consciously expanded their offers of connecting and nonstop services in order to strengthen their market shares. A successful move: Sales grew at a faster rate than capacity was expanded. The seat-load factor on European routes rose by 2.7 percentage points to 68.1 percent.

Intercontinental traffic benefited both from the continuing expansion of the world economy and the progressing liberalization of air transport. In the traffic area North America, Lufthansa again increased its offers. Simultaneously, the seat-load factor increased by 1.8 percentage points to 82.3 percent on these routes. In the traffic region Asia/Pacific, growth concentrated on India, South Korea and China in particular. As a result, aircraft utilization improved by 2.3 percentage points to 82.9 percent.

Responsible for the Group's freight business, Lufthansa Cargo expanded its worldwide offers in 2007 and increased its sales even more strongly. The provider of logistics services increased both its freight quantity and utilization, carrying about 1.8 million tonnes of cargo and mail. In particular, the traffic area America developed very positively. Today, the route network of Lufthansa Cargo comprises about 360 destinations worldwide, which are served by freight and passenger aircraft as well as by trucks.

You find further information on transport performance in the Passenger Transportation business segment in the Annual Report 2007 from page → 67, and on transport performance in the Logistics business segment from page → 77.

<sup>1</sup> The figure given here deviates from that indicated in the Annual Report. This is due to the fact that this Sustainability Report takes into account traveling employees and users of Miles & More award flights as well. See also the chapter "About this report" on page → 5.

## General framework

## Challenges for our business

Air transport is an important economic factor which contributes to generating affluence and maintaining social security. As a part of this international transport system, Lufthansa has created links to the world for more than 50 years – to connect people, ideas and cultures and to help shape worldwide trade.

### Increasing needs for mobility

Mobility – be it for private or professional reasons – is a fundamental human need. It is also a significant characteristic of globalization that lets markets, peoples and cultures move ever closer to each other. The trend toward mobility is by no means a phenomenon limited to Germany and applies to all modes of transport. Due to strong demand, global air transport grew by 6.4 percent in 2007. Lufthansa also strives to meet this rising need for mobility – as environmentally compatibly as possible. The continuous modernization of the fleet is an important control lever in this context.

You can find more information on this topic in the article “Securing mobility in sustainable ways” from page → 54.

### Taking advantage of the opportunities generated by growth in air transport

To secure growth and employment long-term, safe and sustainable high-performance transport systems are required. One of these is global air transport, which allows mobility even in cases where the earth-bound modes of transport including road, rail and water end or where transport times are uneconomical. To allow the Lufthansa Group to expand its strong competitive position further and to shape its performance in an ecologically efficient way over the years ahead, a framework of specific social and political conditions is indispensable.

### Expansion of Frankfurt Airport

Lufthansa expressly welcomes the policy makers’ decision of December 18, 2007 approving the expansion of Frankfurt Airport. This step is an important signal for Germany as a business location and the region’s ability to prosper in the future. However, Lufthansa’s role as a job engine – the company employs more than 35,000 people in Hesse alone – would be massively jeopardized if the heart of European aviation practically ground to a halt at night. The cause for this concern is the planned restriction on night flights in the wake of the expansion of Frankfurt Airport. According to these plans, only 17 aircraft on average would be allowed to land and take off between 11 p.m. and 5 a.m., a period called “mediation night.” For the Lufthansa Group, this would result in distinct operational restrictions which would endanger important growth potential and thus affect the company’s competitiveness.

Not least of all, a restrictive ban on nighttime flying would cause a shift of traffic flows and jobs to other European hubs, such as Amsterdam, Paris or London, which operate around the clock.



To maintain its competitiveness, the Frankfurt hub urgently needs to be expanded.

### **Competition among hub airports**

Beyond that, it is absolutely necessary to strengthen the competitive situation of the Munich hub – and from 2011 that of the new major airport Berlin Brandenburg International (BBI). For example, Munich Airport secures more than 27,000 jobs, and every fourth employee in that region earns his or her living there. Despite the airport's economic importance, there are now capacity bottlenecks that threaten to disconnect it from global growth in air transport. During peak hours, these bottlenecks also cause aircraft to wait for 10 minutes on average at the airport's two runways, and sometimes for up to 30 minutes. The related fuel consumption is enormous, likewise the additional environmentally harmful emissions. The construction of a third runway could improve this situation significantly.

The competition between hub airports is not at all limited to Germany and Europe. Increasingly, airlines from the United States, the Gulf states or Asia link German economic regions with hubs outside of Europe. The result is that passengers no longer connect at domestic hubs, but abroad. However, such shifts in traffic flows cause losses of revenues, tax revenues and jobs in Germany.

### **Subsidies**

Furthermore, it is important to create equal competitive conditions – not only among airlines but also among the different modes of transport. For example, air transport remains to this day the only mode of transport that finances its own infrastructure by means of fees: While the construction and maintenance of rail and road systems take place thanks to public authorities, hub airports such as Frankfurt or Munich shoulder the expansion of their capacities themselves. Against this background, it also seems questionable that the state should subsidize the infrastructure of low-demand micro-airports, which handle less than 10 percent of the total passenger volume in Germany and yet threaten the established structure of central hubs and efficient, competitive regional airports.

### **Consolidation of the airline market**

It is also urgently necessary to reduce the subsidies for non-profitable airlines. This measure represents an important contribution to the consolidation of the airline market, all the more as many of the more than 1,000 airlines worldwide maintain route offers that can not be operated profitably. The result: Six years of heavy losses in a row for the air transport industry, which finally achieved a meager return of less than 1.5 percent in 2007. However, this improvement offers no reason for exaggerated optimism, as the International Air Transport Association (IATA) has already cut back its prognosis again for 2008. Against this background, Lufthansa is determined – following its successful integration of SWISS and its acquisition of a 19-percent share in U.S. carrier JetBlue – to take an active part in the consolidation process in the European and international airline markets in future as well.



The optimization of Europe's air traffic control would be the largest climate-protection project in European civil aviation.

### Restructuring European airspace

A further important aspect of increasing efficiency in air transport would be the implementation of the unified European airspace, the "Single European Sky" (SES). While the Schengen Agreement has created a Europe without borders, the skies above the continent are controlled by 47 different national air traffic control authorities. The result: Instead of flying the shortest route between two points, all aircraft in Europe fly an average detour of 50 kilometers per trip, which causes carbon dioxide (CO<sub>2</sub>) emissions of 5 million tonnes per year. The world climate council, the Intergovernmental Panel on Climate Change (IPCC), pointed out as long ago as 1999 that the Single European Sky could reduce CO<sub>2</sub> emissions by up to 12 percent. According to the EU Commission, the inefficient European airspace management causes superfluous costs of 2 billion euros per year due to its national fragmentation<sup>1</sup> – and another 2.4 billion euros per year due to inefficient flying.<sup>2</sup> Therefore, Lufthansa welcomes the intention of Germany's Federal Government to advance the SES at all levels on an accelerated track in the framework of its energy and environmental program. Moreover, the airline advocates a rapid capital privatization and economic regulation of the German air traffic control authority, Deutsche Flugsicherung (DFS). The goal here must be to increase efficiencies and to preserve and expand the high level of quality that characterizes DFS.

### Civil aviation treaties

After many years of negotiations, Europe and America signed the Open Skies Agreement on April 30, 2007 – and thus set the course for more competition in the transatlantic airspace and equal market access for European and U.S. carriers. The Open Skies Agreement, which has been in effect since March 30, 2008, permits European and U.S. airlines to fly any route between the two economic areas and then continue services to third countries. This privilege used to be the prerogative of the American carriers. Lufthansa sees this liberalization initiative as a step in the right direction, but one that must definitely be followed up with others to reach the goal of free and fair competition. The next step must be to drive forward the harmonization of the framework of conditions and the expansion of commercial and financial opportunities. The end goal here is an Open Aviation Area and thus a common transatlantic air transport market. Lufthansa observes the market developments attentively and evaluates opportunities for new connections that arise from the changed conditions under the Open Skies Agreement.

<sup>1</sup> Source: First Report on the Implementation of the Single Sky Legislation: Achievements and the way forward, communication from the EU Commission on December 20, 2007

<sup>2</sup> Source: PRR 2007 – Performance Review Report of Eurocontrol/Performance Review Commission dated May 2008

### Development of fuel costs

For airlines, their expenditure for kerosene represents a significant cost factor. This expense has increased considerably over the past few years, as the price of crude oil has risen continuously. While the record high in 2006 lay at 78.40 US-dollars per barrel (159 liters), the high for the year in 2007 was reached on November 21 at 99.29 US-dollars. In 2008, the price of crude oil has already passed the mark of 138 US-dollars on several occasions. Significant changes in fuel prices can have a considerable influence on the Group's operational result. In 2007 alone, the increased price of oil caused additional costs of 363 million euros for the Group. However, a weak US-dollar in comparison to the euro and price-hedging measures compensated for this price increase almost entirely. In the framework of its hedging policy, the Group counts on period-based fuel-cost hedging with a time horizon of 24 months. Five percent of the planned quantity of fuel is hedged per month – up to a hedging level of 90 percent.

### Group fleet

on 31.12.2007

(changes compared to 2006)

	in possession <sup>1</sup>		age		in operation <sup>2</sup>		age	
Lufthansa AG (Lufthansa Passenger Airline)	264	(+5)	12.7	(+0.8)	246	(+8)	12.9	(+0.7)
Lufthansa CityLine	74	(-5)	7.6	(+0.7)	74	(-2)	7.7	(+1.0)
Air Dolomiti	14	(±0)	7.4	(+1.0)	19	(±0)	10.1	(+1.0)
Eurowings	36	(-1)	11.4	(+1.1)	33	(+2)	11.2	(+1.0)
Contact Air	0	(±0)			11	(-2)	7.5	(+0.6)
Augsburg Airways	0	(±0)			11	(+1)	8.0	(+1.2)
Germanwings	27	(+5)	6.2	(-0.3)	27	(+3)	6.2	(-0.6)
SWISS European	24	(±0)	9.4	(±0)	20	(±0)	9.9	(±0)
SWISS International	55	(±0)	8.9	(±0)	54	(±0)	8.9	(±0)
<b>Passenger Transportation business segment total</b>	<b>494</b>				<b>495</b>			
<b>Lufthansa Cargo (= Logistics business segment total)</b>	<b>19</b>	<b>(±0)</b>	<b>10.0</b>	<b>(+1.0)</b>	<b>19</b>	<b>(±0)</b>	<b>10.0</b>	<b>(+1.0)</b>
<b>Group total</b>	<b>513</b>	<b>(+73)</b>	<b>10.8</b>	<b>(+0.5)</b>	<b>514</b>	<b>(+17)</b>	<b>10.7</b>	<b>(+0.6)</b>

1 Aircraft in the Group's possession.

2 Aircraft operated by the Group.

**Lufthansa Passenger Airline**



LH: 33 aircraft, 127 seats, 2,500 km range

**Boeing 737-300**



LH: 30 aircraft, 111 seats, 2,500 km range

**Boeing 737-500**



LH: 20 aircraft, 132 seats, 3,500 km range

**Airbus A319-100**



LH: 36 aircraft, 156 seats, 3,500 km range

**Airbus A320-200**



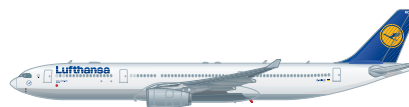
LH: 28 aircraft, 190 seats, 2,900/4,100 km range

**Airbus A321-100/200**



LH: 14 aircraft, 217/280 seats, 5,900/3,400 km range

**Airbus A300-600**



LH: 10 aircraft, 221 seats, 10,500 km range

**Airbus A330-300**



LH: 28 aircraft, 266/221 seats, 11,100/12,700 km range

**Airbus A340-300**



LH: 17 aircraft, 345\* seats, 12,200 km range

**Airbus A340-600**

\*varying seat configurations in operation



LH: 30 aircraft, 352\* seats, 12,500 km range

**Boeing 747-400**

\*varying seat configurations in operation

**Lufthansa Regional**



EN: 6 aircraft, 46 seats, 900 km range  
C3: 5 aircraft, 44 seats, 900 km range

**ATR42-500**



EN: 8 aircraft, 64 seats, 900 km range  
C3: 6 aircraft, 68 seats, 900 km range

**ATR72-500**



CL: 18 aircraft, 93 seats, 2,200 km range

**Avro RJ85**



EW: 5 aircraft, 92 seats, 1,600 km range

**BAe 146-200**



EN: 5 aircraft, 99 seats, 1,800 km range  
EW: 10 aircraft, 98 seats, 1,800 km range

**BAe 146-300**



CL: 24 aircraft, 50 seats, 2,000 km range  
EW: 17 aircraft, 50 seats, 2,000 km range

**CRJ200**



CL: 20 aircraft, 70 seats, 2,300 km range  
EW: 1 aircraft, 70 seats, 2,300 km range

**CRJ700**



CL: 12 aircraft, 84 seats, 2,100 km range

**CRJ900**



IQ: 5 aircraft, 50 seats, 1,200 km range

**DHC 8-300**



IQ: 6 aircraft, 72 seats, 1,200 km range

**DHC 8-400**

**SWISS**



LX: 20 aircraft, 97 seats, 3,500 km range

**Avro RJ100**



LX: 7 aircraft, 108 seats, 3,000 km range

**Airbus A319-100**



LX: 19 aircraft, 136 seats, 3,650 km range

**Airbus A320-200**



LX: 6 aircraft, 182 seats, 3,200 km range

**Airbus A321-100**



LX: 11 aircraft, 196 seats, 8,400 km range

**Airbus A330-200**



LX: 11 aircraft, 228 seats, 10,500 km range

**Airbus A340-300**

**Germanwings**



4U: 24 aircraft, 144\* seats, 3,500 km range

**Airbus A319-100**

\*varying seat configurations in operation



4U: 3 aircraft, 174 seats, 3,500 km range

**Airbus A320-200**

**Lufthansa Cargo**



LH: 19 aircraft, 516 m<sup>3</sup>/89.4 t, 7,000 km range

**Boeing MD-11F**

4U = Germanwings  
IQ = Augsburg Airways  
C3 = Contact Air

CL = Lufthansa CityLine  
EN = Air Dolomiti  
EW = Eurowings

LH = Lufthansa Passenger Airline,  
Lufthansa Cargo  
LX = SWISS

Number of aircraft in operation  
on 31.12.2007

Ranges generally indicated at maximum passenger  
numbers or maximum payload, respectively



## Social responsibility

# Success driven by flexibility

It is of great importance for Lufthansa that its employees remain productive and motivated long-term so that they continue to provide the excellent services that so characterize the Group. Therefore, one goal of its Human Resources policy is to strike a balance between the Group's economic concerns and the individual life concepts of the people working for it. Modern work-time management makes a significant contribution to reaching this goal.

Lufthansa works for its customers around the world and around the clock, covering virtually the entire range of services that are demanded in civil aviation. To do so, Lufthansa unites five business segments under one roof, each with numerous specialized companies.

The aviation business is personnel intensive and characterized by frequent fluctuations in work loads. When daily and weekly fluctuations coincide with fluctuations due to the season or the state of the economy, work-time management becomes a particular challenge. This is especially true for passenger and freight handling at airports or aircraft maintenance.

At the same time, Lufthansa is facing increasingly fierce competition not only in its sales markets but also in important job markets. Against this background, the expectations that employees and job applicants place on the company are gaining in importance. Lufthansa's work-time management must do equal justice not only to operational requirements and regional legal frameworks but also to the needs of its more than 100,000 employees around the globe.

The people photographed by Beat Streuli, shown at the Lufthansa Aviation Center, point to a cosmopolitan world outside that is as diverse and complex as the world of work inside the Center's walls.



### Development and introduction of new work-time models

Lufthansa meets these requirements by means of a sophisticated work-time management and company-wide networks. The development of issues related to work time is driven across the Group by a concerted effort involving all levels concerned. A fundamental prerequisite here – outside Germany as well – is the constructive cooperation between employee representatives and management. Taking into account operational needs, overriding interests and social considerations, Lufthansa develops work-time models for individual subsidiary companies, specific regions or the entire Group. Networking among the personnel experts worldwide ensures that experience and innovation are made available to the entire Group and that synergies are taken advantage of in an effective manner.

Therefore, special strategies are needed to introduce such innovations: it is essential to involve employees and employee representatives at a very early stage. Furthermore, trial phases can help eliminate mental reservations and make the adaptation process easier for all concerned. As a rule, new models are introduced first in a manageable area and then applied to other suitable areas only after the trial phase has proven successful.



### Flexible working hours

Today, flexible working hours have become an indispensable part of work-time management. While the introduction of such work-time models is usually driven by economic interests, it has long since become clear that doing so serves the interests of employees as well.

Flexible working hours allow companies to adapt more effectively to changeable customer behavior and to maintain need-oriented personnel levels at low cost. At the same time, they also create more leeway for employees to organize their lives in individual ways, which can help strengthen the balance between work and private life. However, employees can also perceive the making of working hours flexible as a burden, especially when it restricts the reliable planning of their leisure hours.

### In the beginning, there was flexitime

The movement towards making fixed working hours more flexible, outside the area of shift work, began in the early 1970s with the introduction of flexitime.

In the beginning, flexitime allowed employees to determine their daily presence on the job within still quite modest margins and

thus to adapt it to their professional tasks and private needs. Since its introduction, however, flexitime has undergone continuous development. Fixed core working hours, during which all employees must be present, have for the most part been abandoned. Increasingly, more flexible elements – such as longer compensation periods – have been integrated.

Today, flexitime models are standard outside of shift work, and they have even found a place in some shift models as well. Yet newer models such as unsupervised flexitime (see page → 40) are beginning to establish themselves as serious alternatives to flexitime.

### Compensation periods help distribute work time

Long compensation periods are an important flexibility element of modern work-time models. Behind the compensation period is concealed a predefined time period during which work time may be distributed unevenly but by the end of which the set number of working hours must be reached. The number of weekly hours indicates the average work time in this case. Thus, phases of more and less intense work can balance each other out. In aviation, with its characteristic swings in work loads, such compensation mechanisms are of great importance. The distribution of



work time within a tailor-made compensation period – which may stretch up to 18 months – is not only cost-effective but also has a long-term effect. On the one hand, fewer costs arise through overtime; on the other hand, the amount of unproductive work time declines. During phases with less demand, employees are not tied to fixed working hours and can thus take better advantage of these periods according to their private needs. This helps companies to maintain their employees' productivity over the medium and long term and thus to secure sustainable competitiveness.

LSG Sky Chefs was one of the pioneers who introduced compensation periods of 18 months as long ago as 2001. This period can always be adapted should the need arise, thereby allowing custom-made solutions for current needs. With this step, Lufthansa moved consistently forward along the path of making work time flexible.

If needed, temporary higher or lower weekly working hours – called work-time corridors – can be agreed upon. This boosts the airline's flexibility in dealing with temporary fluctuations which otherwise can not be compensated for within the planned period. During the crisis following the events of September 11, 2001, a procedure to reduce weekly working hours without pay compensation was even agreed upon. "This approach makes it possible for Lufthansa to adapt costs in the event of a crisis and still keep

employees and their know-how within the company," explains Wolfgang Ensinger, Head of Industrial Relations Germany at Lufthansa.

#### **The trend towards part-time work continues unabated**

While just a little less than 15 percent of all Lufthansa employees worked a reduced number of hours per week in 1996, this share increased to 26.8 percent in 2007 – and the trend continues unabated. "The trend points to individual work-time offers that can be selected from a predefined 'range of models' and specifically adapted to the respective area. This guarantees that all employees with the same prerequisites can take advantage of these work-time models, and that without increasing the level of complexity," says Eva Danner, Manager Human Resources and Logistics Munich, about the concept.

"The continuous evolution of work-time models is among the company's most important tasks."

Dr. Martin Schmitt  
Senior Vice President Executive Personnel,  
Deutsche Lufthansa AG







The Lufthansa Aviation Center in Frankfurt is an extraordinary building which also sets new standards for the company. Using innovative forms of expression, it comments on our contemporary world of living and working.

Part-time work is an important issue for cabin crews in particular. There are currently 38 different work-time models available to cabin crews, with every second employee taking advantage of this offering in 2007. Among employees in ground operations at Deutsche Lufthansa AG, the part-time rate was only slightly lower.

Yet part-time work is not always undisputed. Particularly in the cabin, those responsible think that the limits of what is feasible have already been reached in certain cases. Part-timers require just as much planning effort as full-time employees, and on longer deployments – called “rotations” in aviation jargon – they can not be assigned unrestrictedly.

“Each part-time model must remain in line with operational requirements. Even if we make every possible effort and continuously launch new ‘market-oriented’ work-time models, we will unfortunately not be able to fulfill all employee wishes,” says Eva Danner, in a call for understanding.

One variation of classic part-time work is called “part-time with a free block.” Here, a block of full-time work is combined with an extended absence. Depending on how it is set up, it can allow time off for several months with no change in salary. “Naturally, the period of absence is determined jointly. During ‘hot phases’ this gives us full-time employees, who may then take advantage

of quiet periods for further education or extended holidays. This helps everyone,” explains Ralph Schlenker, a personnel manager at the airline’s station in Frankfurt.

### Time for family and partners

Part-time models are an important factor for making work and family compatible. Even before part-time work and educational leave were anchored by law, Lufthansa had expanded such elements. Family-oriented personnel policies have played an important role at the airline for a long time. After all, they can contribute greatly to motivation and are an important instrument for increasing employee loyalty. “We’ve found that most part-time employees are more motivated. For a service company, that is especially important,” says Ralph Schlenker.

Lufthansa employees are usually able to fit parental leave into their careers with no problem. Since the introduction of the new legally stipulated parental allowances, many men are happily taking advantage of this option as well. Models specifically aimed at parents, such as the right to fixed days in shift work, have contributed to this success. “Under certain conditions, parents can work with the planning departments to agree individually on set days of deployment and working hours. This makes looking after children so much easier. It does mean high levels of effort on the planning side, but this is always justified from the perspective of ‘Lufthansa and Family’,” outlines Eva Danner.

### Part-time models for managers as well?

“Managing can be divided into parts as well,” is how Stefan Lauer, Chief Officer Aviation Services and Human Resources, summed up the situation at a Lufthansa HR Management Conference at the end of 2007.

“Managing can be divided into parts as well.”

Stefan Lauer  
Chief Officer Aviation Services and Human Resources,  
Deutsche Lufthansa AG



Even if part-time work is far less common among managers than among other Lufthansa employees, the trend towards reduced working hours does not bypass management entirely. Often part-time work is still used as an option during parental leave; however, changing life designs are leading to new requirements. Against the background of current demographic developments, part-time models are set to gain in importance particularly for older managers. In this spirit, the rules for age-related part-time work for managers have been extended beyond January 1, 2007.

### On duty day and night

In an aviation corporation there are certain business areas that are on duty around the clock, every day of the year: “three-shift full-cont operations” as the experts call them. This is the case

for aircraft maintenance at Lufthansa Technik. There – as in other areas of the Group – this challenge is joined by others such as significant fluctuations in workloads and thus in personnel requirements as well. To cover these needs efficiently, a made-to-measure system comprising a range of work-time models is needed.

The “Night-Shift-Only” model was introduced to handle increasing workloads at night as compatibly as possible.

This increased need for personnel at night arises from the fact that only urgent work is carried out during the day in order to keep the aircraft fleet’s downtime to a strict minimum. Routine checks are thus increasingly scheduled at night. While night shifts are quite popular among certain employees, others would prefer less night duty in the context of rotating shifts.

At Lufthansa Technik, therefore, management is convinced that voluntary night-only shifts provide an employee-friendly and compatible solution. To exclude any risks for the employees’ health, the company decided to place this model under medical supervision from the start. These experts reached the conclusion that continuous night shifts constitute no greater burden than the classic rotation of early, late and night shifts.

This way, the preference of rotating-shift workers for fewer night shifts can be accommodated just as well as the preference of others for night shifts only. The “Night-Shift-Only” model is now so popular that interested employees initially find their names on a waiting list. Regular medical checkups remain a prerequisite for participation.

### **Lufthansa tries new approaches**

Lufthansa uses pilot projects to test innovative developments and thus sets new standards for work-time management within the Group. Repeatedly, such projects enjoy a great deal of attention beyond the company as well. This is true for team-determined work time at Lufthansa Technik.

### **Making decisions within the team**

The “Team-Determined Work Time” model was first tested by Lufthansa Technik in Stuttgart in 1998. Today, it is also used in Munich, Frankfurt, Dusseldorf, Cologne and Hamburg.

In contrast to “normal” shift models, “Team-Determined Work Time” defines only minimum and maximum employee numbers for each shift. Who works on those shifts is decided independently by the respective teams. Experience shows that team members plan work “around their days off.” This is an attractive option as it opens up a lot of leeway for private preferences. In all cases, duty requirements must be respected for each qualification or function. If a team member is unable to work at short notice, for example, team members will coordinate a replacement within the group on the principle of “give and take.”

HR managers acting as a think tank: at the Lufthansa HR Management Conference 2007 in Berlin.



### **Unsupervised flexitime**

Evolving from classic flexitime, unsupervised flexitime takes an important step further. Mutual trust means that the machine-supported recording of hours worked is abandoned. The contractual work time remains unchanged, but the focus is now on work results, not on the employee’s time account. For employees, this means more individual responsibility, particularly in managing their work time, and additional leeway in creating a balance between work and private life. Furthermore, experts point out that unsupervised flexitime promotes a more efficient utilization of work time. “In this case everyone benefits,” says Claus Wachenheim, Director HR Management Germany, with conviction.

Lufthansa has been testing unsupervised flexitime at the Lufthansa Aviation Center (LAC) in Frankfurt since mid-2006. While participation in the model currently stands at only 28 percent, those employees participating in the scheme gave positive feedback without exception in an anonymous survey carried out in March 2008. “We’re very pleased that unsupervised flexitime is now regarded in such a positive light, following some initial doubts, and





we're convinced that its acceptance will continue to rise," says Claus Wachenheim, summing up the situation.

Lufthansa is planning to extend unsupervised flexitime to other areas. A comparable model was agreed upon for the administrative areas in Cologne in April 2008. Further locations are set to follow.

#### **Outlook: Flexibly into the future**

The employees' need for a balance between work and private life corresponds to Lufthansa's interest in maintaining its employees' productivity and motivation over their entire careers. This way of using manpower in a sustainable way is gaining in importance against the background of demographic shifts in many parts of Europe, including in Germany, the company's main and home location.

It will be a challenge for Lufthansa to harmonize the ever-increasing demands for flexibility with the desire for a work-life balance. To this end, Lufthansa counts on personnel management focused

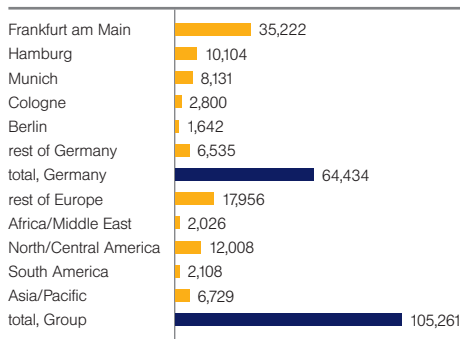
on life phases and life events, which embeds the need for more flexibility in work time into a comprehensive package. In this way, the increasingly heterogeneous life designs and individual needs of employees are not only to be taken into account even more, but they are also to be consciously used to advantage in work-time management in order to meet additional need for flexibility as an interest shared by employer and employees alike.

If this strategy is successful, it will not least strengthen Lufthansa's position as an employer who keeps a firm eye on its employees' needs.

## Diversity **A wealth of potentials**

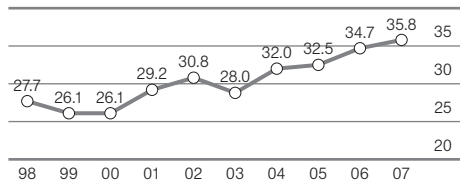
### Lufthansa employees 2007

Jobs around the world



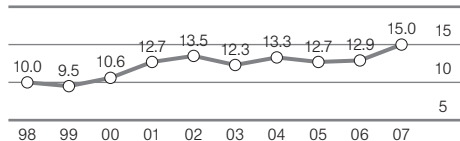
### Women in management positions with staff responsibility at the Lufthansa Group<sup>1</sup>

in percent



### Women in management positions at the Lufthansa Group<sup>2</sup>

in percent



Girls' Day 2007 at Lufthansa – 241 girls gathered information about the diverse training professions at the Lufthansa Group.

Globalization is synonymous with increasing international links in all areas of life – whether in business, politics, culture or communication. Diversity and degrees of difference are equally on the rise for both individuals and societies. Consequently, constellations within companies are now also more heterogeneous than ever before.

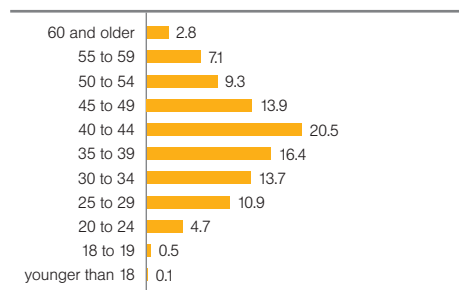
As a globally active Group, Lufthansa is characterized by a wide variety of portfolios and products, as well as an international customer structure that is also reflected among its employees. The fact that a separate organizational unit was set up as early as 2001 to handle “diversity” shows not only that management is aware of changes in society, but that it also acts proactively, aiming to take a positive approach in dealing with them. Among other things, this implies a respectful way of encountering the “unknown.” Various perspectives help to regard differences in nationality, religion or age not as causes of conflict, but rather as opportunities for personal growth. As a result, employees in heterogeneous teams have a better chance of developing themselves both personally and professionally, while the company as a whole profits from an accumulative learning effect. This benefit is not least reflected in increased revenues, as employees who feel accepted in a cosmopolitan environment bring more motivation and creativity to their work. Here, support focuses on five dimensions: gender, age, nationality, sexual orientation and disability. Lufthansa provided additional information on these issues for its employees in 2007 – the Year of Equal Opportunity – in the form of an eLearning tool on the intranet.

### Women at the aviation group

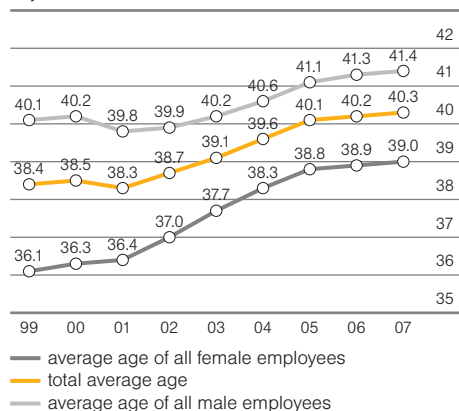
Women appreciate Lufthansa as an attractive employer. This view was also substantiated by a survey carried out by personnel consultancy Access in 2007 among female university graduates with up to seven years of job experience. Every fifth participant perceived Lufthansa as the most interesting employer in Germany – in part because of its open corporate culture. This also explains why there are comparatively many women in management positions at Lufthansa. And the number of female managers is increasing every year. In 2007, the share of women among all Lufthansa employees was 42.4 percent. At the upper management levels, 15 percent of executives were women. Specifically, 3.1 percent of the Senior Vice Presidents (Management Level A), 10.9 percent of the Vice Presidents (Management Level B) and 16.4 percent of the Directors (Management Level C) were women. All hierarchical levels taken together, 35.8 percent of all employees with staff responsibility are women.

Interest in the Group is strong not only among women with job experience, but also among those about to start their careers. As most women continue to choose classic “women’s jobs” despite all kinds of initiatives and efforts over the past years, Lufthansa invites female high-school students to participate in “Girls’ Day,” which takes place each year on the second Thursday in April. On this day, they have the opportunity to learn more about jobs such as aircraft mechanic, IT specialist, or forwarding and logistics services professional. In this way, Lufthansa wants to give girls a chance to choose a professional career in a more discerning way and help them dare to select a job that is seen as less “typical” for women. In 2007, 241 girls accepted the invitation to “Girls’ Day” and thus got a firsthand impression of everyday work environments at a number of Group companies, including Lufthansa Technik, Lufthansa Cargo and LSG Sky Chefs. About 30 girls were able to take a look behind the scenes at Munich Airport and see a cockpit from the inside.

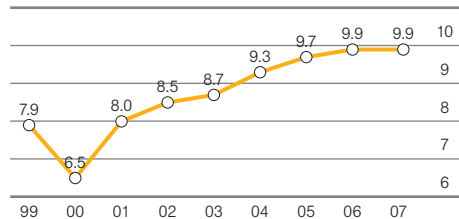
**Age structure at the Lufthansa Group<sup>3</sup>**  
2007, distribution in percent



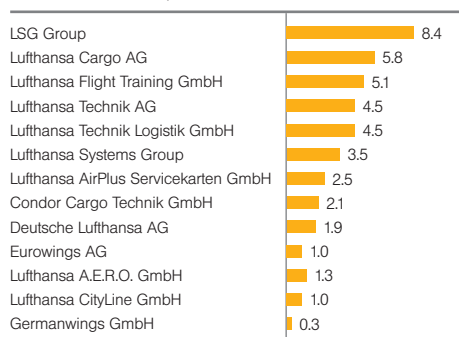
**Average age at the Lufthansa Group<sup>3</sup>**  
in years



**Share of employees 55 years old and above<sup>3</sup>**  
in percent



**People with severe disabilities at the Lufthansa Group in Germany**  
2007, distribution in percent



In 2007, the cross-mentoring program for female managers was continued. Participants, who already hold positions with staff responsibility, are counseled by mentors working at a higher management level at other companies, such as Bosch, Deutsche Bank or Merck. In the process, they set new goals for themselves and expand their networks. In 2007, a total of 51 mentors and 51 mentees from eight large German companies took part. Topics such as “pension schemes for women” were also covered in the context of internal events.

**The opportunities of demographic change**

By 2030 every third German will be over 60 years old. Accordingly, the average age of Lufthansa employees is also rising continuously. Here, the trend has simply been dampened by the many new employees hired over recent years. In 2007, 19.2 percent of all employees were 50 years old or older, while the average age increased by 0.1 year over the previous year. However, the potentials of employees with job experience can only be used optimally if they stay in touch with the latest professional developments by means of ongoing education. This facilitates working with junior employees, who benefit in turn from the social and professional experience of their older colleagues.

Yet the demographic developments in the majority of western industrialized nations bring additional challenges. Low birth rates are set to intensify the dearth of qualified employees, which is already perceptible today in certain areas. Though this issue has been of no great relevance for Deutsche Lufthansa AG as one of Germany's most popular employers, it will nevertheless gain in importance. For this reason, it is important to promote the employability of experienced staff within the company.

In the interest of a proactive personnel policy, Lufthansa has fine-tuned its internal analysis tools to be able to adapt offers in continuing education, knowledge management and health management to these developments.

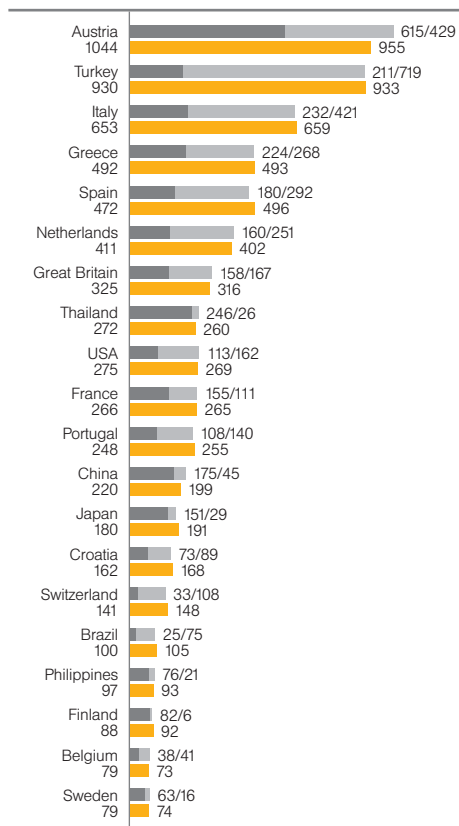
**Mentoring for disabled employees**

Helping and giving individual support to employees with disabilities is an important topic at Lufthansa. This is reflected simply by the number of people with physical disabilities working for Lufthansa. In 2007, the LSG Group, Lufthansa Cargo AG and Lufthansa Flight Training GmbH again surpassed the legal minimum quota for disabled employees. For cockpit and cabin crews, however, the standards were not reached, which is due to the very stringent criteria employees in these areas must meet. In 2007, the Group again ran a mentoring program that remains unique in Germany. Experienced managers accompany colleagues with disabilities from other company areas for one year, helping them with their professional orientation. These mentors also benefit from this program, as their exchanges with the mentees teach them to see their own professional context from an entirely new perspective. Last year, five Lufthansa employees with disabilities took advantage of this offer to reduce barriers in cooperation with managers.

1 Scope of consolidation excluding Lufthansa CityLine, Lufthansa A.E.R.O GmbH, Lufthansa AirPlus Servicekarten GmbH, LSG outside Germany, Lufthansa Systems Berlin GmbH, Lufthansa Systems AS GmbH.  
2 Only Deutsche Lufthansa AG, Lufthansa Cargo AG, Lufthansa Technik AG, Lufthansa Systems AG, Lufthansa Flight Training GmbH, Lufthansa Revenue Services GmbH, LSG, Lufthansa CityLine.  
3 Scope of consolidation partly excluding LSG outside Germany, BizJet International Sales&Support Inc., Lufthansa Technik Airmotive Ireland Ltd., Lufthansa Technik Aircraft Component Services, Lufthansa Technik Philippines, Shannon Aerospace Ltd., Hawker Pacific Aerospace Inc. (US), Hawker Pacific Aerospace Ltd. (UK), AirLiance Materials LLC.

### Employees in Germany with foreign citizenship at the Lufthansa Group

2007 vs. 2006 (selection)



■ female employees 2007  
■ male employees 2007  
■ total employees 2006

This graph shows the 20 most strongly represented nationalities among employees. Altogether, Lufthansa employs people from 126 nations in Germany.

Beyond the mentoring program, the representatives of disabled employees also help to adapt work stations to individual disabilities. These advisors also give counsel and support to their disabled colleagues concerning professional and personal topics. Lufthansa Technik regularly offers apprentice positions to hearing-impaired young people and provides a sign language interpreter for this purpose.

In this spirit, the Group has also ensured that the new office building, the Lufthansa Aviation Center (LAC), at Frankfurt Airport is disability-friendly at all levels. This includes parking spaces for the disabled, which are near the elevators in the underground parking garage and above ground in the visitors' parking lot. The steps to the main entry are equipped with reflective strips to increase visual contrast. A guiding system for the blind has been installed to lead pedestrians from the Airport ring road to the LAC's entrance. It consists of grooved tiles providing information on the path to follow, which vision-impaired visitors "read" with their canes. Both the ground-level entrance to the Aviation Center and the restaurant's main entrance on the fifth floor are equipped with special doors to accommodate disabled visitors. In the elevators, the building floors are announced via loudspeakers and the control buttons inside and outside are installed at low level. There is a total of four wash-rooms suitable for people with disabilities at the LAC.

### Intercultural competence

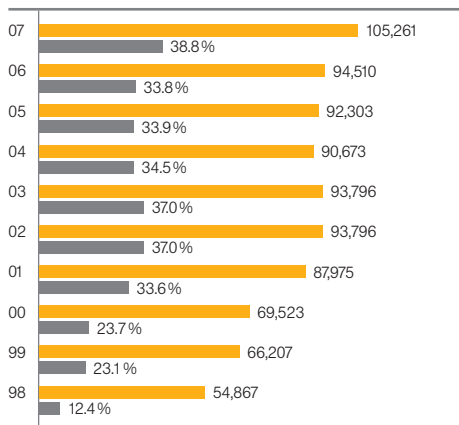
Being cosmopolitan, respectful and sensitive in dealing with each other and with customers has long been a matter of course for Lufthansa as an internationally active service provider. This is also reflected in its heterogeneous staff structure. For example, there are employees from 126 countries working at Lufthansa in Germany. Moreover, 12.2 percent of all employees living in Germany do not have German citizenship. Worldwide, the Group employs people from 146 nations.

However, this diversity of nationalities can also present challenges, such as in communicating. Therefore, Lufthansa offers its employees reduced-rate language courses in German and many foreign languages, which are taught by cooperation partners. With regard to the high degree of internationality among both customers and work teams, the comprehension of cultural differences is one of the most important abilities a Lufthansa employee can have.

Apart from the heterogeneity of customers, it is above all the consolidation in European air transport and the increasing number of stakes in international companies that make this comprehension ever more important. It is only through intercultural competencies that misunderstandings with sometimes significant financial consequences can be avoided and that mutual solutions can be found more quickly. A clear sign for this increasing internationalization is the rising number of job transfers abroad. Apart from certain short-term assignments, transfers abroad are usually for three to five years. In addition to transfers from Germany, transfers from other countries to Germany and transfers between third countries are equally common. At the end of 2007, there were 635 employees working for Lufthansa in the context of a transfer. Before traveling to their host country, the future "expats" and their family members prepare for their stay by means of individually oriented intercultural seminars. During their stay abroad, they are continuously looked after as well. In this way, the contact with their home country is maintained, which makes later reintegration easier.

### Share of employees abroad at the Lufthansa Group

total employees vs. employees working abroad

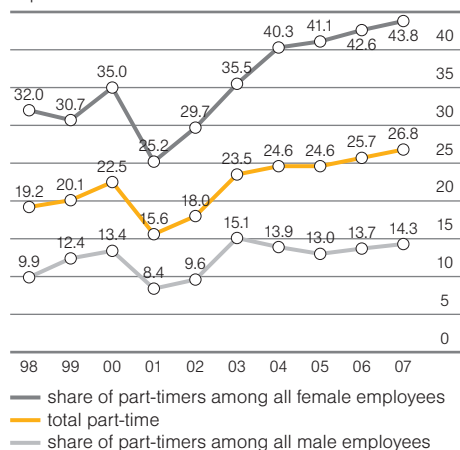


■ total employees  
■ of which working abroad, in percent

## Work-life balance

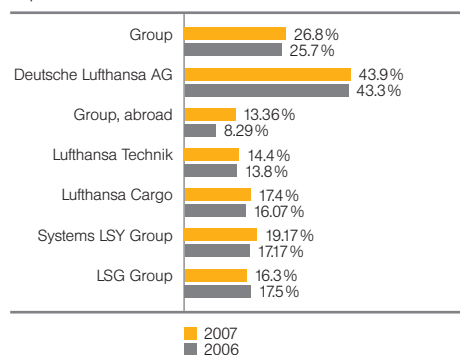
### Part-time employment at the Lufthansa Group

in percent



### Part-time work by Group companies

in percent



## Making working hours more flexible

Only those companies that offer their employees attractive working conditions which concurrently fulfill the economic requirements of business operations can achieve long-term success. For this reason, modern work-time management counts today more than ever among the greatest challenges that companies must meet.

Consequently, Lufthansa continues to develop its own, custom-made work-time management and regularly launches new projects to better harmonize its employees' individual life concepts and needs with the operational requirements for flexibility. This approach also improves Lufthansa's competitiveness, including in future job markets.

You will find detailed information on this subject in the article "Success driven by flexibility" on page → 36.

### Family and professional life

Family support has a long tradition at Lufthansa and goes far beyond flexible work-time models for mothers and fathers. To raise awareness among employees regarding the issue of compatibility between work and family, intensive communication efforts continued in 2007, for instance by means of a number of presentations. One example was the Family Day in May 2007, which the company used to give its employees an overview of support options in the event of illness or need for care of family members. To promote a better work-life balance, seminars on effective self and time management are offered regularly.

Employees who are expecting children receive a standard one-time allowance in addition to their salaries, the "Lufthansa Birth Allocation," as well as a child supplement added to their vacation pay. Moreover, the preferential travel conditions that apply to employees extend to their children as well. Beyond the legal parental leave, mothers and fathers may take an additional year of family leave – not only for child care, but also to look after parents or partners in need of care. In 2007, 65 men across the Group took advantage of legal paternity leave. This is an increase of 54.8 percent, which is also to be seen in the context of the support given since January 2007 by Germany's Federal Government to the active participation of fathers in raising their children.

Additionally, the company offers active support in finding solutions ranging from day nurseries and kindergartens to homework tutoring, as one of the chief worries of working parents is obtaining suitable care for their children. This type of practical help is provided by the airline's contractual partner "Family Service," which served a total of 562 employees in 2007. In emergencies, employees' children can be looked after by ad-hoc institutions. In Frankfurt, "Fluggiland" takes care of youngsters in such cases, while in Munich the day-care center "Towerkids" opened its doors on January 1, 2007 for children from zero to 12 years of age. In addition, "Family Service" provides spontaneous care options for children of Lufthansa employees in 11 other cities in Germany. Last year, 139 parents in Frankfurt and 28 in Munich took advantage of this spontaneous care option.

"Family Service" does more than just looking after the youngest members of families: it also offers tailor-made solutions for employees with older relatives in need of care, via its "Elder Care" program. In a time of significant demographic shifts, such services will continue to gain in importance.



### Mobility for employees

As long ago as 1989 Lufthansa decided to set up a “car pool,” which gives employees an alternative to their own cars and helps to use the limited parking space at the locations in Frankfurt, Hamburg and Munich more efficiently. Employees can rent cars of different categories for either professional or private purposes. The only condition is availability. In addition to numerous arrangements with regional public transport companies, this service offers maximum flexibility. The car pool also makes an important contribution to ensuring mobility for Lufthansa employees while reducing environmental burdens.

### Maintaining links beyond professional life

Many employees wish to maintain their contacts with former colleagues and the company even after taking retirement. The “Emergency Action Group of Former Lufthansa Employees,” founded after World War II, became the “Association of Former Lufthansa Employees” in 1976, serving as a link among retirees from the “new” Lufthansa. This organization has been a registered association since 1986. There is great interest in the network of former employees: the regional associations count a total of almost 3,000 members. One of the ways Lufthansa supports the organization is with financial means. Thus, the worldwide regional associations of the organization receive an annual grant. Additionally, Lufthansa participates in financing festivities such as jubilees, Christmas parties and annual meetings and also shares some of the production costs of the association’s publication “Der Lufthansa Senior.” Its officials fly free of charge to board meetings, member meetings and other get-togethers.

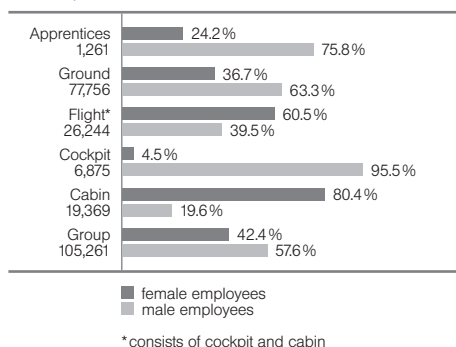
However, the company does not forget those retirees who are not members of the association. They can all continue to receive weekly issues of the employee newspaper “Lufthanseat” in one monthly package, join the Lufthansa sports associations and continue to travel at advantageous conditions. For retirees, the last personnel department that was responsible for them as employees continues to be their contact point for all questions concerning the company.

## Employment policy based on partnership

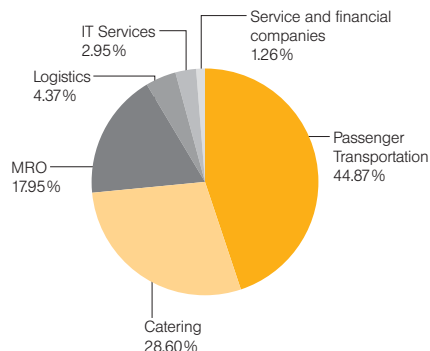
## Lufthansa – a popular employer

Lufthansa’s high degree of attractiveness as an employer is confirmed afresh each year. In 2007, 100,000 candidates applied for about 3,000 job vacancies. And all signs point towards continued growth. In 2008, Lufthansa will hire more than 4,000 new employees. Numerous surveys and rankings confirm that the Group maintains a good reputation in the job market and thus continues to attract new applicants. For example, a survey conducted for the U.S. business magazine “Forbes” involving 30,000 respondents from 25 countries showed Lufthansa ranking third on the popularity scale among 600 internationally active companies. This survey was conducted jointly by the Reputation Institute in New York and Humboldt University in Berlin. Similarly, among 11,750 students surveyed by German business magazine “Wirtschaftswoche,” business administration students ranked Lufthansa second, just behind BMW, in the “most popular employer” category, while engineering students ranked Lufthansa Technik seventh. Moreover, according to a survey conducted by market research company Universum Communications, Lufthansa’s attractiveness as an employer continued to rise among business administration graduates. This group now ranks Lufthansa second. Among female university graduates with job experience, the Group even ranks first, according to personnel consultancy Access.

**Employees by groups and gender**  
2007, in percent



**Distribution of employees within the Lufthansa Group**  
2007, in percent



Two reasons for the enduring high level of attractiveness are a long-term personnel policy and a favorable working environment. "Working conditions at Lufthansa are very strongly guided by the operational requirements, the employees' needs and a long-term perspective," explains Peter Gerber, Senior Vice President Industrial Relations Germany. "At the same time, the employees are rewarded for their performance, they are offered an appropriate material basis for life, and their commitment to the company and identification with Lufthansa are promoted. To this end, working conditions are designed appropriately through collective wage agreements, which guarantee the employees' social and material security during their active working lives and after retirement. The work on pay policy involving Lufthansa and its union partners Vereinte Dienstleistungsgewerkschaft (ver.di), Vereinigung Cockpit (VC) and Unabhängige Flugbegleiter Organisation e.V. (UFO) is characterized by a cooperation in which respective interests are defended while balance and solutions are sought overall."

**Feedback from employees is solicited**

By conducting regular employee surveys in specific Group companies, Lufthansa determines staff satisfaction on subjects such as "Cooperation and leadership" or "Framework of working conditions." In this way, managers receive important information about their areas of responsibility, which they can use for a dialogue across all hierarchical levels. The goal of these systematic surveys using questionnaires and the intranet (Employee Feedback Management) is not only to discuss feedback, but also to use this information to identify opportunities for change and to implement them. Lufthansa has conducted six such surveys and taken advantage of numerous insights thus gained for improvements within the Group. Examples include the introduction of dialogue events ranging from "town meetings" to cross-area events, as well as employee magazines geared to specific target groups. The survey normally takes place every two years and will be conducted again in 2008.

Beyond this questionnaire-based survey, the number of online surveys has increased steadily. For example, the electronic Lufthansa Leadership Feedback (eLLF) has been a firmly-established 360°-feedback instrument for managers and promising management candidates since 2002. This instrument allows users to request online feedback concerning management performance and other criteria of the Lufthansa Leadership Compass. Comparing how they evaluate themselves with how others evaluate them and reflecting on their profile help managers to evolve in specific areas and to take necessary measures. In addition, the electronic Lufthansa Professional Feedback (eLPF) was set up in 2007. It is designed for employees and supervisors below the management level, especially for project leaders, team leaders and heads of advisory departments. The eLPF also promotes the identification of individual strengths and areas for professional development. Around 800 employees have taken advantage of this offer since its introduction in July 2007.

**Setzen Sie Zeichen.**

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Ihr Feedback bringt es auf den Punkt: Gehen Sie ab 28. Mai bei unserer Mitarbeiterbefragung an den Start. Ihre Erfahrungen und Ansichten sind gefragt. Machen Sie mit – für unser Unternehmen und für sich selbst.

Weitere Informationen finden Sie in eBasis.

Employee Feedback Management 2008 EFM

There's no better way to fly. Lufthansa

A STAR ALLIANCE MEMBER

Via internal media, Lufthansa encourages its employees to participate in the survey Employee Feedback Management 2008.

**Codetermination in the company**

Lufthansa promotes codetermination, both at the level of individual jobs and at the corporate level, by means of open and transparent discussion of problems in order to strike a balance between the conflicting interests of employer and employees in a proactive manner. The overall goal here is to maintain the equilibrium between these business partners that is so important for joint success. To ensure that these discussions can take place "eye-to-eye," Lufthansa provides the training courses for employees required by industrial relations law. Over the past few years, numerous IT issues and the right way of handling portfolio changes have emerged as new subject areas for codetermination.

### **Profit sharing**

Lufthansa began offering its employees participation in the company's success in the 1960s. Since 1970, employees have been able to choose between cash payments and company shares at favorable conditions.

The positive trend of the last years has directly benefited those employees paid according to wage agreement as well. In 2007, they received a profit share of up to 17.55 percent of one monthly salary – as a basic component related either to the company as a whole or to the specific business segment – and a one-time payment of 438 euros. This is 138 euros more than the previous year. Forty percent of all Lufthansa employees in Germany choose to purchase shares rather than to receive a cash payment. They bought either traditional company shares or a greater number of shares financed by an interest-free loan. The latter is possible in the framework of a profit-sharing model called “LH-Chance.” This scheme consists of a package of cost-free shares plus an interest-free loan from Lufthansa, which employees repay continuously over the duration of the program. Participants receive the amount of the loan at the beginning of the program in the form of additional Lufthansa shares. Last year, the Group laid out “LH-Chance” for the tenth time.

“LH-Chance” is a program for employees paid according to wage agreement. For managers, the company launched “LH-Performance” 11 years ago. Here, the prerequisite for participation is that managers first invest in Lufthansa shares offered at favorable conditions. These shares are tied to value increase rights, which since 2007 have comprised both a performance option and an outperformance option. This means that participants receive a payment whenever the Group's share has performed better over the program's duration than previously selected shares of European competitors. Since 2003, the company has also offered “LH-PerformanceAT” for employees paid outside of wage agreements. Its structure corresponds to that of the program for managers and differs only regarding the duration, dimension and payout profile for the outperformance option.

### **Ideas for innovation**

Employees of the Lufthansa Group can make suggestions concerning cost savings, simplification of existing processes and improvement of products and services via the Group-wide ideas management platform “Lufthansa Impulse.”

Most of these suggestions for improvements are fed directly online into the “Impulse” ideas portal on the intranet eBase. There, interested employees can find out if colleagues might already have entered the same idea. They can also check which ideas have been implemented and which have not been accepted. This approach continuously creates a rich store of knowledge available for optimizations. This collection grew in 2007 with specific suggestion on how costs might be cut, productivity increased and the punctuality of flights improved.

In November last year, the Lufthansa Innovation Prize was awarded for the first time in two business areas at Lufthansa Technik AG. “A good idea always involves two parties: one who comes up with it and one who promotes it,” summarizes Wolfgang Servay, head of Lufthansa's idea and innovation management. That is why awards are given not only to those who provide ideas, but also to those who work with them. This motivates employees to be constantly committed to improvement and substantiates the Group's striving for innovation.

Via a new innovation process, which has run under the name “InventIT” at Lufthansa Systems Infratec since the end of 2007, Lufthansa aims at standardizing the handling

of ideas concerning new products and processes, so that “they have a higher chance of survival,” explains Servay. This ensures that innovations receive the necessary space, which is sometimes not available in everyday operations. Thanks to the creative ideas of its employees, the company saved more than 7 million euros in 2007. A total of 2,300 suggestions were made last year.

## Training and continuing education



The Lufthansa job portal [www.Be-Lufthansa.com](http://www.Be-Lufthansa.com)

## A broad variety of offers

Lufthansa is a leader in its industry with regard to the quality of its services. The company owes this success in large part to the topflight qualifications of its employees. To find the “right” employee for a given task, the Group places great value on target-oriented communications before the application process and on careful, fair methods for selecting personnel. To secure and improve product and service quality, training and continuing education are of particular importance. In 2007, Lufthansa invested about 300 million euros in its employees’ qualifications. Thus, the training budget increased by 38 percent over the previous year. Every third training measure involved e-learning measures – and the trend continues to point upwards.

The use of electronic self-study media allows employees to obtain or improve their qualifications without time and place constraints, and promotes the independent procurement of information and analysis of the changed requirements of the work environment. For many years, e-learning has been a strategic center of gravity for Lufthansa’s education policy, given the increased cost awareness due to limited personnel resources on the one hand and the necessity of lifelong learning on the other. This approach also corresponds to the company’s sustainability concept, as electronic media can be produced once and then used again and again in different contexts.

In addition, the Group increasingly offers training and continuing education courses abroad. In the area of aircraft maintenance and overhauls, for example, Lufthansa Technical Training concluded new partnerships in China, Singapore and India.

### Apprenticeships and traineeships

The Lufthansa Group offers technical, commercial and information technology apprenticeships, covering a total of 39 specialist fields. In 2007, 347 apprentices started their professional careers at Lufthansa. They have a very good chance of being hired full-time after they complete their training, as Lufthansa trains primarily for its own needs. Additionally, the airline trains service professionals for work as flight attendants and in passenger handling at the airports.

The Group continuously develops its training courses in accordance with international standards. The globally oriented trainee program “International Airline Professionals” has served Lufthansa since 1986 in training managers for its organization abroad. For selected university graduates, the airline established the trainee program “Start-Technik” in 2007. It is open to future engineers, industrial engineers, computer scientists and economists. And Lufthansa launched a new concept in the area of pilot training last year as well. Not only do future pilots now train on jets instead of propeller aircraft, but the course itself has also been modernized. With “progresso” the company now offers pilots-to-be training that far exceeds the legal minimum standards and covers the specific requirements of scheduled air transport much more effectively. “Progresso” meets the new standard of the Multi Crew Pilot License (MPL) of the International Civil Aviation Organization (ICAO).



Lufthansa offers vocational training in 39 professions.

### University studies

Globalization has changed educational institutions greatly in recent years. For example, Europe has paved the way for the harmonization of university degrees by means of the “Bologna Process.” Lufthansa has advocated this kind of internationalization and agreed to support the creation of courses of study leading to bachelor’s or master’s degrees. As one of the first German companies to do so, Lufthansa followed through on its promise by setting up a bachelor’s degree course in “Aviation Management” in the winter semester 2006/2007. This dual course of study combines in-company training resulting in qualification as an Aviation Management Professional with university study leading to a bachelor’s degree in Business Administration. Participants work for Lufthansa and study at the European Business School (EBS) in Oestrich-Winkel. In addition to a practice semester, a period of work abroad is a fixed component of this six-semester course, which is taught entirely in English.

Additionally, Lufthansa has developed a concept to combine the classic training leading to the qualification of Forwarding and Logistics Professional with academic course work to create the dual course of study “Bachelor of Arts in Logistics Management” in cooperation with the European University of Applied Sciences in Brühl from 2008. This is part of the qualification initiative “training.ahead” launched by Lufthansa Cargo for employees in its operational area.

Another novelty is a stipend and internship program which Lufthansa started in December 2006 in cooperation with the University of Applied Sciences Bad Honnef in Bonn. Here, the Group integrates up to ten university students from the areas of business administration and service management into specific Lufthansa training courses and internships in Germany and abroad.

### Continuing education

All employees can follow continuing education courses at Lufthansa which correspond to their personal interests and competencies. Passing on tailor-made knowledge is a part of corporate strategy, because the development of individual employees also benefits the development of the Group as a whole. Furthermore, knowledge that fits exact needs also improves the personal employability of the airline’s staff.

Lufthansa has received numerous international awards for its educational concept, which demonstrate just how effective this innovative way of promoting employees and the acquisition of knowledge actually is. For example, in the corporate competition “Talent Inside” organized by the initiative “Potenzial Frankfurt Rhein Main,” the Group received an award in February 2007 for its comprehensive and future-oriented educational offers and for its long-term personnel strategy.

The Lufthansa School of Business (LHSB), Germany’s first ever corporate university, has been honored repeatedly for its development of managers. Among others, it has received awards for the best European corporate university, for its interlinking of continuing education programs with corporate strategy, and in 2006 for the forward-looking ways it cooperates with external teaching partners. Last year, the jury of U.S. market research and consulting firm Corporate University Xchange honored LHSB’s innovative method of measuring learning success and depicting the value that continuing education creates for the company.

In addition to helping managers develop their competencies, the LHSB’s Corporate College provides diverse offers for all Lufthansa employees. Under the motto “Further with Education,” interested employees may take courses to expand their



personal, social or professional competencies in such areas as computer skills or foreign languages. They learn, for example, how to adapt more quickly and flexibly to permanent changes in the working world. The teaching schedule of the Corporate College also includes self-study programs and lectures on strategic and current issues concerning the Lufthansa Group. The results of workshops on subjects such as managing time, boosting creativity or designing processes are made available to all employees through the intranet.

## Employee safety and health protection

### Employee health

For Lufthansa, the health of its employees is of the greatest importance. Therefore, the company has created a comprehensive corporate health management system whose primary goal is not the short-term restoration of the ability to work, but rather the long-term health maintenance of its workforce. For example, Lufthansa sets new standards in the areas of travel medicine and preventative health care for its employees. In the event of health problems, Group employees thus benefit from the knowledge of physicians specialized in industrial, aviation and tropical medicine who work at the airline's Medical Service. These physicians are also available for pre-travel advice and precautionary vaccinations. There are ten physicians at the Lufthansa Base in Frankfurt alone. Another six physicians are on duty at the airline's locations in Hamburg and Munich.

To prevent health problems or even accidents at the workplace, more than 20 experts, most of them safety engineers, assess the work-safety situations at the airline's locations in Frankfurt, Hamburg, Munich and Berlin. They regularly inspect work stations to identify hazards and health risks early on and to quickly suggest effective remedial measures.

#### Active health protection

Lufthansa meets the challenges of demographic change in the areas of work safety and health protection as well. Suitable staff training is designed to counteract the increasing burdens from flight operations, shift work or unfavorable postures at one's desk as employees get older. The focus here is on illnesses of the motion apparatus. A team of physicians and health experts develops concrete concepts for this purpose and receives scientific support in this work.

In operational areas with special burdens, the Group offers specific programs to promote health. For example, employees working night shifts only in aircraft maintenance receive an obligatory annual comprehensive checkup, which takes their particular health concerns into consideration. Beyond that, the Medical Service offers all shift workers specialized checkups, which employees may take advantage of on a voluntary basis. These examinations are a sensible way of complementing the program "Alert and fit on shifts," Lufthansa Technik's alertness management training.

To help prevent incidences of colon cancer, free screening exams were conducted in cooperation with the Frankfurt University Clinic, using an innovative, highly sensitive type of test. More than 2,500 Lufthansa employees from Frankfurt, Hamburg and Munich participated, each receiving information about his or her individual risk of colon cancer. During this campaign the participants donated a total of 6,000 euros, which the Group gave to the children's cancer ward of the Frankfurt University Clinic.

In 2007, the Medical Service again offered free influenza vaccinations; about 5,000 employees took advantage of this offer.

The airline's cabin crews benefited from week-long informational campaigns on treating and preventing travel-related difficulties with the digestive tract and lactose intolerance. The department Health Management Cabin also participated in this program.

Not least, the Lufthansa Group regularly publishes magazine articles and health tips in its print media for its flight and ground personnel. All health topics are presented in a way that fits the target audience, while the spectrum ranges from preventative health and cancer prevention to topics in the areas of travel, sports and tropical medicine.

Beyond its activities for the Group's employees, the Medical Service is part of all measures and plan to prevent and handle possible catastrophes and pandemics. This includes regular exchanges of information with public institutions, universities and international professional associations.

#### **Job safety**

For Lufthansa, it is of particular importance to ensure that work stations are designed in safe and ergonomically correct ways, an area the Group regularly surveys in the context of numerous prevention initiatives. These activities focus on the selection of working tools and the setup or adaptation of work stations and work processes. They also include audits of ongoing operations, carried out by both company employees and independent experts who examine adherence to high standards in the areas of technical equipment, fire prevention and emergency procedures which must be visible or easily accessible. These preventative measures are of great importance and have a long tradition.

One new measure is a large-scale campaign that aims at sensitizing cockpit and cabin crews to smells and the development of smoke aboard aircraft. The goal here is to reduce the number of dangerous situations or even to avoid them entirely, as the ability to identify causes quickly and accurately increases safety aboard. At the same time, maintenance costs are reduced, and unscheduled landings may even be avoided in some cases. In turn, this saves costs and helps avoid environmental burdens.

Additionally, Lufthansa has created computer-based training programs on job safety for various operational areas, such as for office employees or for ground personnel at airports. Such a tool is currently being developed for cockpit and cabin crews.

Furthermore, consultations, training courses and presentations take place regularly to keep Lufthansa employees informed about current preventative health options. Employees can also find publications on this subject in the company's internal media, as well as comprehensive information on the intranet.

#### **Sports after work**

For many decades, the Group has offered its employees the option of joining one of the Lufthansa sports clubs. Currently, there are 12 clubs at nine locations in Germany. Here, Lufthansa employees can play soccer or tennis, practice track-and-field sports or try more exotic disciplines such as windsurfing, hang gliding or kung-fu. Beyond the physical activity in a job-related setting, employees also appreciate the



A glance into the modern working worlds at the Lufthansa Aviation Center (LAC) at Frankfurt Airport.

## Facts 2007 and Outlook 2008 (selection)

Area	Facts 2007	Outlook 2008
<b>Training</b>	<b>Classic training:</b> Training for 39 professions at the Lufthansa Group. 347 new apprentice positions in 2007.	New apprenticeship contracts for 2008.
	<b>Service Professionals (cabin &amp; ground)</b> About 2,000 new Service Professionals hired at the locations in Frankfurt and Munich. 3,000 selected flight attendants trained in special course for First Class to become "Qualified First Class Flight Attendants".	Hiring of 2,000 flight attendants and 1,000 employees for passenger handling on the ground.
	<b>Cockpit crews:</b> 244 new trainee pilots enrolled in training.	Offering up to 360 new training positions.
<b>Continuing education</b>	Broad range of offers in professional and cross-discipline training programs to support the continuous development of employees. 300 million euros invested in training and continuing education.	Expansion of business-related and voluntary continuing education of employees.
<b>Employability</b>	3.5 qualification days on average per employee in 2007.	Anchor lifelong learning in corporate culture.
<b>Employee safety and health protection</b>	Developed a health care concept.	Implement health care concept.
<b>Demographic change</b>	Lufthansa in preparation for change: analyze, identify and implement measures, communications, controlling.	Pursue further.
<b>Diversity</b>	Concept "50plus" developed for external staff, Mentoring for women, Mentoring for disabled employees, Girls' Day.	Accompany and implement internationalization through additional measures.
<b>Dialogue with employees</b>	Regular Town Meetings in different areas of the Lufthansa Group (Members of Executive Board in dialogue with employees). Regular open-door event in the offices of the Executive Board "Aviation Services & HR". Employee survey 2007 at Lufthansa Technik and Lufthansa Flight Training.	6th employee survey in 2008: Employee Feedback Management (EFM) for about 40,000 employees at the Passenger Airlines and in Group functions.
<b>Dialogue with social partners</b>	Continuous development of agreements with collective-bargaining and operation partners. Participation in "Social Dialogue" at EU level as AEA member (Air Crew Working Group; Ground Handling Working Group). Discussions at works council conferences.	Continue dialogue in Germany and continued active participation in "Social Dialogue" at EU level.



Exercise creates balance: The Lufthansa sports associations offer many options for getting active.

chance to maintain contacts with colleagues and friends. Even model construction, music, photography and stamp collecting — though not commonly associated with sport — are on offer and very popular.

That the concept is successful is demonstrated by the high membership figures, especially at the locations in Hamburg and Frankfurt, where they reach four digits. Lufthansa supports these activities without reservation and regularly provides sports associations with financial means. By doing so, it secures the creation and maintenance of sports facilities that always fulfill high standards. Moreover, the sports clubs use the financial support to keep membership dues low. The associations in Berlin, Bremen, Dusseldorf, Frankfurt, Hamburg, Cologne, Munich, Nuremberg and Seeheim are available not only to employees, but also to their relatives and to retirees. As a complement or alternative to company sports, the so-called Hanseatic Aviation Club also serves as a meeting place for passionate aviators.

### Social counseling

For the last 22 years, Lufthansa has been offering Social Counseling to employees in crisis and conflict situations, thereby supporting long-term staff productivity in a preventative manner. A team of six social counselors at the Lufthansa bases at Frankfurt Airport and in Cologne gives advice to employees faced by crisis or conflict, whether it be of a professional or private nature. The experts give those concerned suggestions and support for improving communication in work settings and strengthening social competencies. If needed, they also act as mediators by gathering the parties involved in a conflict situation around a single table to conduct constructive discussions. The highest priority in this context is the joint development of adequate and feasible solutions.

## Environment

# Securing mobility in sustainable ways

Mobility is an essential basis for the functioning of today's society. As nobody can really do without it, mankind is faced with a dilemma. Mobility connects people and generates affluence, but it also affects the environment in the process. Lufthansa is fully aware of this and is therefore working with determination to make the transport of people and goods as responsible and sustainable as possible.





Air transport links up the world. It connects peoples, cultures and continents. Every day, aircraft ensure that people can cover long distances quickly and safely – and pass borders with ease. In addition, the exchange of goods and services is a core element of the globalized world. Everyday products have often covered long distances before they reach the shelves in shops. As a result, scarcely anyone can escape the existing networks and high degree of mobility.

Yet whether it be ships, trains, automobiles – the worldwide stock will already reach the 1-billion mark by 2010 – or airplanes: They all affect the environment and the climate. The climate and the Earth's atmosphere are highly complex systems, whose mecha-

nisms human beings are far from understanding fully. Nevertheless, they interfere with these systems every day – without knowing the actual effects. "Against this background, we've set ourselves the goal of keeping the consequences of mobility on the environment as slight as possible and supporting climate research to a marked degree," explains Dr. Karlheinz Haag, Head of Environmental Issues at Lufthansa. "The more we know about the climate and the Earth's atmosphere, the more target-oriented and effective our environmental care measures can be."

#### Traffic growth and kerosene consumption decoupled

Even if Lufthansa's own share in the total of global emissions is comparatively small, the airline has taken the issues of environmental and climate protection very seriously for many years. Consequently, the Group's passenger fleets reduced their specific kerosene consumption by 30.3 percent between 1991 and the end of 2007. While transport performance increased

"The more we know about the climate and the Earth's atmosphere, the more target-oriented and effective our measures concerning environmental care can be."

Dr. Karlheinz Haag  
Head of Environmental Issues Deutsche Lufthansa AG



by 232 percent during this period, fuel consumption and CO<sub>2</sub> emissions only rose by 121 percent. Therefore, Lufthansa has been growing since 1991 without increasing its burden on the environment at the same rate. This decoupling clearly demonstrates how effective the numerous measures implemented by the company are in conserving kerosene and thus reducing CO<sub>2</sub> emissions at the same time.

In particular, the regular fleet modernization has enabled Lufthansa to reduce its specific kerosene consumption considerably over the past 40 years. While aircraft in the 1970s consumed about 12 liters of kerosene to carry one passenger over a distance of 100 kilometers, a Lufthansa Airbus A340-300 today needs only 3.5 liters to do the same job. Investments of more than 14 billion euros in even more modern and fuel-efficient aircraft are added proof that the airline will be able to reduce its specific kerosene consumption even further in future.

In order to achieve this overriding goal, numerous smaller measures in everyday business do their part by helping Lufthansa to increase its efficiency and decrease both kerosene consumption and emissions: In this spirit, Lufthansa makes every effort to constantly reduce the weight of its aircraft. This is accomplished by selecting the most lightweight flight equipment, for example, or by installing more lightweight seats and galley ovens. Flying

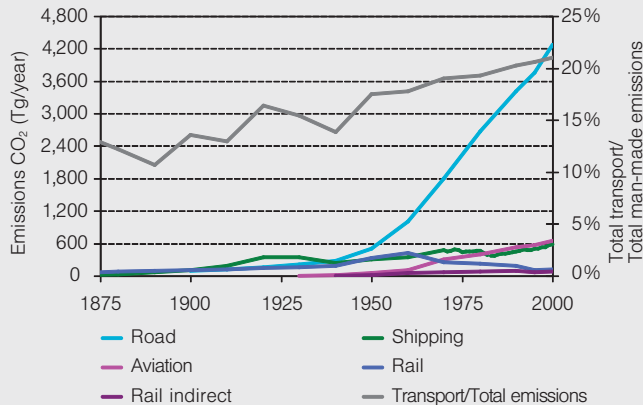


The illuminated paths of this light sculpture by Welsh artist Cerith Wyn Evans at the Lufthansa Aviation Center evoke flight routes.



### Is air transport really the “climate killer number one”?

Flying, like all other modes of transport, has effects on the environment. Since the beginning of industrialization, global air transport has contributed in total – all impact paths included – to a warming of the Earth’s surface of 0.03 °C. During this period, the temperature of the Earth’s surface increased by 0.76 °C. Therefore, worldwide air transport has a share of 3.9 percent in this development. More specifically, global air transport’s share in anthropogenic CO<sub>2</sub> emissions amounts to 2.2 percent, while its share in total greenhouse-gas emissions (CO<sub>2</sub> equivalents) only comes to 1.6 percent. These figures demonstrate that one can hardly talk about a “climate killer number one” in this context. And the often-cited figures of exorbitant growth are quickly relativized if one compares them to the worldwide growth in road traffic (see graph).



Historical development in emissions and radiative forcing for CO<sub>2</sub> from the transport sector. Development in CO<sub>2</sub> emissions from the various transport subsectors and the fraction (right axis) of total man-made CO<sub>2</sub> emissions (excluding land use changes).

Source and copyright:  
PNAS, vol. 105, No. 2, p. 455, 15 January 2008, Fuglested et al.

speeds adapted to meteorological and operating conditions, effective engine cleaning and more direct flight routings also reduce fuel consumption further.

#### Four pillars for climate protection

Climate change is a problem that concerns the whole world. Therefore, global warming and the CO<sub>2</sub> burden also require worldwide solutions. This is especially true for air transport with its global network of activities. The industry is already making considerable efforts to improve all components within the air transport system further. The goal is to minimize specific emissions and to keep their future growth as small as possible. Furthermore, in 2005 Lufthansa and other European aviation companies developed a four-pillar model for climate protection, which includes the entire spectrum of practicable measures and is supported by the International Civil Aviation Organization (ICAO). These pillars include technical measures, infrastructure improvements, operational measures and complementary economic instruments, such as global emission rights. According to the strategic research agenda of the Advisory Council for Aeronautics Research in Europe (ACARE), implementing these measures would make it possible to reduce the CO<sub>2</sub> emissions of air transport by 50 percent – and its emissions of nitrogen oxides (NO<sub>x</sub>) by 80 percent – per seat kilometer from 2000 to 2020.



#### Pillar 1: Technological progress

Thanks to technological innovation, the aviation industry has reduced its kerosene consumption – and thus its CO<sub>2</sub> emissions – per passenger by 70 percent since 1970. And further reductions are feasible. Progress in flight and engine technologies as well as innovations in aerodynamics, materials and electronics are opening up new potentials in this area. Further successes are likely to be realized by means of the addition or exclusive use of alternative fuels. The aviation industry supports and promotes relevant research programs.

#### Pillar 2: Improved infrastructure

Improvements in infrastructure on the ground and in the air also open up a significant potential for CO<sub>2</sub> savings. The Single European Sky alone – which has remained unimplemented for many years – could immediately reduce the emissions in European air traffic by up to 12 percent. “With regard to the fragmented European airspace in particular, there is an urgent need for action. Here, it is the European Union’s task to create the necessary framework of conditions at long last. For the Single European Sky is the largest climate protection program on the part of European civil aviation,” demands Haag. Bottlenecks in the infrastructure force airlines to fly unnecessary detours, holding patterns, delayed approaches and higher flying speeds to catch up with delays.

#### Pillar 3: Operational measures

Effective operational measures include deploying efficiently-sized aircraft, flying on optimum routes and at optimal speeds, and improving processes on the ground, among others. They also contribute to reducing fuel consumption and CO<sub>2</sub> emissions further.



Moreover, Lufthansa always strives to keep the weight loaded aboard its aircraft as low as possible. For example, specialists always determine in advance the exact quantity of fuel needed and the optimum quantity of freshwater for each flight.

#### **Pillar 4: Economic instruments**

Should the CO<sub>2</sub> savings potential of the first three pillars be exhausted, then a sensibly designed emission trading system for air transport would be a further feasible option. In any case, such a system would have to be comprehensive in scope. Against the vote of the ICAO, however, the EU Commission and the European Parliament are planning to unilaterally include European air transport in the trading scheme – which would result in significant competitive disadvantages for the airlines affected. Particularly alarming are the EU's efforts in the context of emissions trading to auction off all the certificates needed to compensate for emissions. With this move, it would degrade an instrument oriented by free-market principles to a form of forced taxation, resulting in considerable additional costs that consumers would feel as well. Moreover, any proof that this island solution would actually lessen the environmental burden has yet to be delivered. By contrast, not only do the measures included in the first three pillars open up a larger potential of CO<sub>2</sub> savings, but they can also be implemented much easier, faster and with fewer competitive distortions.

#### **Voluntary climate donations**

Beyond that, Lufthansa passengers have had the option since 2007 of compensating the CO<sub>2</sub> emissions produced by their journeys by making a voluntary donation – and thus an active contribution – to climate protection. The airline concentrates on the

compensation of carbon dioxide as the reduction of CO<sub>2</sub> emissions should be given the greatest priority long-term according to scientists. The reason: The climatic effect of this greenhouse gas lasts the longest.

Lufthansa offers this new service in cooperation with the renowned Swiss nonprofit foundation "myclimate – The Climate Protection Partnership." Interested passengers can enter the origin and destination of their flights on the Internet page → <http://lufthansa.myclimate.org>. The system then automatically calculates the CO<sub>2</sub> emissions produced during their flights and the amount of their voluntary climate donations.

#### **Is air transport really the "most-highly subsidized mode of transport" due to tax exemptions?**

It is true that kerosene and other aircraft fuels for commercially operating air transport companies are exempted – with only a few national exceptions – from tax on mineral oil. However, it is also a fact that air transport – unlike all other modes of transport – pays for its own infrastructure. Lufthansa and other airlines pay fees to airport operators, which the latter use to finance the construction of terminals and runways. And carriers also pay fees for using the air routes. In Germany alone, Lufthansa pays more than 1.6 billion euros a year, which corresponds to about 1 euro per liter of kerosene consumed.

In addition, a tax on kerosene would lead to distortions in competition. Airlines from states without such a tax would have a clear advantage as passengers would simply shift out of cost considerations to hubs not subjected to taxation. Furthermore, the environmental burden would hardly be lightened: According to an EU study, a kerosene tax would reduce CO<sub>2</sub> emissions by only 0.26 percent.



These donations, which are calculated on the basis of the actual consumption data of the Lufthansa fleet, flow directly into certified climate protection projects in India. For example, these projects help replace energy sources with adverse climatic effects – such as diesel electricity generators – with generation options that are more environmentally compatible. “These projects are most often located in developing countries, because a sum invested there helps to avoid significantly more emissions than it would in an industrial country,” explains Haag.

All “myclimate” projects must fulfill the most stringent standards. Special attention is given by “myclimate” to the projects’ integrity. Thus, the climate projects of Lufthansa and “myclimate” have either been registered under the Clean Development Mechanism (CDM) of the Kyoto protocol or are currently undergoing the registration process. Moreover, registration under the “Gold Standard” has been completed for one project. This standard is an independently managed seal that distinguishes high-quality climate-protection projects.

#### **Unique support for climate research**

In its contributions to climate protection, Lufthansa does not limit itself to keeping the environmental effects of mobility as low as possible or to compensating them. No other aviation company in

the world can point to a commitment to climate research equal to Lufthansa’s. Since 1994, the airline has actively supported a number of important, international research projects, whose results are helping scientists to evaluate and further improve their climate models.

In this spirit, Lufthansa helped to found the EU research project MOZAIC and has participated in it for more than 14 years. The data thus generated have helped scientists to develop a better understanding of cloud formation. They discovered, for instance, that the Earth’s atmosphere at an altitude of 8 to 12 kilometers is significantly more humid than had been assumed. One positive side-effect is that the insights gained in the context of MOZAIC today allow more accurate weather forecasts.

Like MOZAIC, the EU research project CARIBIC proves that civil aviation offers an ideal platform for climatic and atmospheric research. In the framework of CARIBIC, a container loaded with measuring equipment flies four times a month in the hold of a Lufthansa Airbus A340-600 in order to measure the concentration and spatial distribution of aerosols and more than 100 different trace substances. The goal is to analyze the effects of anthropogenic emissions. Aircraft close the observation gap in the tropopause between ground stations and satellites, which have only



The air inlet system under the fuselage of the Airbus A340-600 christened "Leverkusen" collects climate data on long-haul flights at an altitude of 12,000 meters. Here, a Lufthansa Technik employee gives the adjustment a final check.

limited vertical resolution. The tropopause at an altitude of 10 to 12 kilometers is considered an important transition layer in the Earth's atmosphere, dividing the troposphere from the stratosphere.

Using the basic research supported by Lufthansa, the experts can calculate climatic changes even more accurately and state their effects more precisely. Everybody benefits from this, as the more exact the scientific conclusions, the better the basis for specific environmental protection measures.

You can find more information on this topic in the chapter "Research at Lufthansa" from page → 75.

The efforts described above demonstrate how determined Lufthansa is to maintain a balance between climate protection and people's increasing need for mobility. To achieve this goal, it is necessary to develop sustainable ways of doing business and to find efficient solutions that accommodate both climate protection and the airline's growth perspectives. Lufthansa will consistently follow the path it has selected.

#### Do air transport's emissions really have an impact two to three times greater than those of other modes of transport?

In addition to CO<sub>2</sub>, the combustion of kerosene produces such substances as nitrogen oxides (NO<sub>x</sub>), soot and sulfur particles, aerosols and water vapor. To estimate the relative climate effects of air transport, the UN Climate Council, the Intergovernmental Panel on Climate Change (IPCC), introduced the Radiative Forcing Index (RFI) in 1999. Based on the radiative forcing of CO<sub>2</sub> emissions, this approach multiplies this figure by a constant factor, the RFI, to take the so-called non-CO<sub>2</sub> effects into account when assessing the climate effects of air transport. However, this approach has frequently been misinterpreted and misapplied ever since.

Using the RFI, it is possible – within certain margins of error – to estimate the climate effects of the past. From this formula stems the spectrum of factors from 2 to 6 that is much propagated in the public debate. However, the index is entirely unsuited for estimating the climatic effects of future air transport: the reason being that the RFI is not a constant factor but is dependent to a high degree on the period under observation. The background for this is that CO<sub>2</sub> emissions remain in the atmosphere for many decades, while nitrogen oxides or vapor trails are effective for not much longer than the flight itself.

For very long periods, therefore, the factor shifts towards 1. Scientific research has clarified this point. Prof. Ulrich Schumann, Director of the Institute for Atmospheric Physics at the German Aerospace Center (DLR), shares the opinion that a constant multiplier of 2 or 3 is "scientifically unfounded."

In comparison with those of other modes of transport, the various impact paths of air transport are significantly better researched. This has resulted in the RFI's being used in the public debate unilaterally and exclusively for air transport – but not for all other anthropogenic activities. This obviously ignores the fact that all other anthropogenic activities, such as road traffic, shipping or energy generation, also have multiple effects. Therefore, a fair comparison must take an RFI into consideration for these cases as well. Scientists are already working on researching the additional impact paths of other modes of transport in the context of an EU project.

Beyond that, the measuring unit "radiative forcing," on which the RFI is based, has to be questioned in general. It is only a theoretical aid to estimate the influence of human activities on the climate. In large climate models, a change of the parameter radiative forcing behaves in a more or less linear fashion in relationship to a change in the temperature of the Earth's surface. Therefore, it is a common, though simplistic way to make a statement about possible temperature changes on the Earth. "However, radiative forcing is not an ideal measurement to estimate future climate change. Scientists are currently discussing intensively which parameters might be better suited," says Dr. Andreas Waibel, Manager Group Environmental Issues at Lufthansa.

The following example demonstrates the RFI's lack of suitability: Shipping emits CO<sub>2</sub> as well as soot particles and aerosols. The latter contribute to cooling the Earth. This effect is more significant than the greenhouse effect of CO<sub>2</sub> emissions, so that the RFI for shipping is below 1. This would suggest that ships are the ideal mode of transport in times of climatic change. However, it does not take into consideration that the CO<sub>2</sub> thus emitted remains in the Earth's atmosphere for up to 100 years.

To record the consequences of human activities on the climate more accurately, it is necessary to descend in the chain of effects: A change in radiative forcing leads to a change in temperature. A change in temperature in turn leads to a change in winds and precipitation. In the final analysis, it is the parameters temperature, wind and precipitation that determine our weather and thus, averaged over a longer period of time, our climate.

## Perspectives until 2020

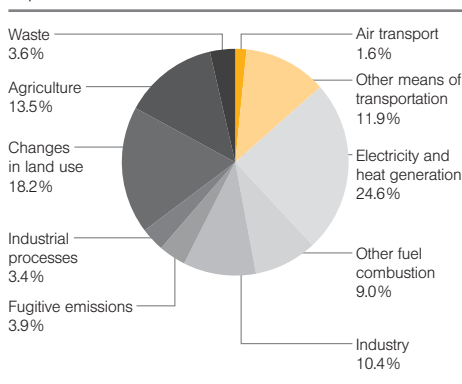
## New strategic environmental program of Deutsche Lufthansa AG

As an aviation company with international activities, Lufthansa is fully aware of its responsibility for the environment and the need for a balanced relationship between economy and ecology. We invest billions of euros in fuel-saving, low-noise aircraft and actively support research and development in the search for ways to minimize further the environmental effects of air transport. A number of these measures are part of the integrated four-pillar strategy with which the air transport industry positioned itself early on regarding the issue of reducing CO<sub>2</sub> emissions. To shape air transport in even more environmentally friendly ways, the industry also needs the coordinated cooperation of the system partners: politicians, manufacturers, airlines, airports and air traffic control authorities. This becomes all the more important as high-performance air transport is a basic condition for society's mobility and the global economy's ability to function.

For many years, Lufthansa has been successful in its commitment to environmental care. The strategy the airline has pursued thus far – decoupling environmental effects from traffic growth (see also page → 67) – will be continued and developed further with a perspective up to 2020. In the following, we present the Group's new strategic environmental program. The matrix of environmental goals and measures that used to be included in this report is now available in its habitual form on the Internet at: → <http://responsibility.lufthansa.com> → Environment

### Anthropogenic emissions of greenhouse gases worldwide

World Resources Institute (WRI), in percent



### Situation and overriding objective

Over the past years, Lufthansa has been able to decouple the development of its traffic volumes from the development of its gaseous emissions. Since 1991, about 50 percent of the growth in traffic volume has been effected in a CO<sub>2</sub>-neutral manner. No other mode of transport has been able to achieve a greater increase in efficiency over the same period. Today, a Lufthansa aircraft consumes only 4.32 liters of kerosene on average to carry a passenger over a distance of 100 kilometers (at actual load factors).

The fact is that air transport's share in global greenhouse-gas emissions (Kyoto gases) lies at 1.6 percent. Its share of global CO<sub>2</sub> emissions comes to 2.2 percent (in comparison: road traffic's share is 14 percent, while that of shipping is 3.5 percent).

The airline's formulation of strategic goals and measures is oriented towards ACARE's statements and goals and the IATA's recently redefined Fuel Efficiency Goal for 2020 (reduction of specific fuel consumption by 25 percent below 2006 levels). Furthermore, it takes into account the latest trends and developments in the technological and operative areas. However, it also points out the necessity for efficiency increases in those areas where airlines have only limited influence. In this context, it is especially necessary to persuade the system partners to counteract the unnecessary resource consumption and related additional CO<sub>2</sub> emissions caused by detours and inefficiencies on the ground (holding patterns and taxiing times).

The overriding goal here is to drive forward the decoupling of traffic growth and increases in emissions in order to guarantee an economical and climate-compatible air transport in the long run. However, this can only be accomplished if significant progress is made in all areas of the four-pillar strategy. Lufthansa is willing to contribute to this goal within the limits of its possibilities, but the airline also demands that



manufacturers and policy makers do their part. Only a concerted effort uniting all the system partners involved in air transport and politics can lead to a decoupling of traffic growth from harmful emissions.

#### Goals and measures to reduce gaseous emissions

- Lufthansa expressly supports the IATA's Fuel Efficiency Goal and strives to reduce the specific CO<sub>2</sub> emissions of its Group fleet to 25 percent below 2006 levels by 2020.
- Lufthansa expressly supports the ACARE goal to reduce nitrogen oxide emissions to 80 percent below 2000 levels by 2020.

#### Technology and fleet modernization

- Lufthansa will continue to modernize its fleet on an ongoing basis and to implement, carry out and expand its fleet modernization program (current investment volume: 14 billion euros).

#### Alternative fuels

- Within the limits of its possibilities, Lufthansa will support fuel manufacturers in the development of alternative fuels. Lufthansa sets itself the goal – provided the current problems of availability and price can be solved – to blend a share of 5 to 10 percent of synthetic fuel into conventional kerosene by 2020.

#### Operational measures

- Lufthansa will continue and expand the measures it has already launched to increase efficiency in operations and maintenance. Furthermore, it will evaluate additional measures on a continuous basis and promote ideas for the targeted, step-by-step modification of technology on existing aircraft.

#### Infrastructure

- Lufthansa actively participates in shaping and realizing infrastructure improvements (e.g. Single European Sky) and therefore also expects that the political framework of conditions be put into place in an adequate way.

#### Market-based mechanisms

- Within the relevant international committees, Lufthansa actively supports a practicable global approach to include air transport in the trade of emissions rights.
- Lufthansa will continue and optimize its project "voluntary CO<sub>2</sub> compensation" based on the experiences gathered during the startup phase in 2007. With the introduction of compulsory emission trading for air transport, Lufthansa will examine whether this project can still be continued.
- Lufthansa supports ecologically-oriented incentive systems which are based on economic and volume-neutral parameters. These include the three-year test phase of emissions-related airport charges at the airports in Frankfurt and Munich, effective from January 1, 2008.

#### Goals and measures to reduce noise emissions

The technological developments on engines and fuselages and the introduction of low-noise procedures for approach and departure have yielded considerable progress thus far (e.g. reduction of the noise contour). The potential highlighted by ACARE – a 50-percent noise reduction by 2020 – must be realized in particular with the upcoming replacement of the aircraft class A320/Boeing 737. The continuous modernization of the fleets currently operated by the airlines makes a key contribution to reducing aircraft noise.



New aircraft – an ecological milestone: The innovative wide-body aircraft Airbus A380 and Boeing 747-8 are expected to consume a mere 3.4 liters of kerosene per passenger and 100 km.

Lufthansa will continue its efforts to reduce aircraft noise in the framework of its continuous fleet modernization program and will support the realization of the ACARE goal (a 50-percent noise reduction by 2020) by participating in related research projects.

#### **Noise reduction on aircraft**

The current research and development measures to develop noise-reduction measures for the active fleet are to be continued and complemented. The related goals are:

- realization of overflight noise measurements
- identification of sound and broadband noise sources
- analysis of sound-generation mechanisms, and building thereon
- development and testing of prototype solutions
- ecological and economic analysis of the suitability for serial production of the measures tested, leading to implementation if possible.

#### **Noise reduction in flight procedures**

The database for noise analysis that has been built up over the past years is to be extended to four-engined aircraft. Further overflight measurements with a Boeing 747-400 are therefore planned for 2008.

#### **Intermodal transport**

The continuous optimization and improved interlinking of the different modes of transport can deliver – in addition to a customer-friendlier setup – a significant contribution to lessening the environmental burden.

With the goal of constantly improving the linkups between the different modes of transport, Lufthansa will further optimize its existing transport concepts and evaluate the possibilities for implementing new options. In this area, Lufthansa will continue its close cooperation with airports and other transport service providers.

#### **Energy and resource management**

As a rule, the airline considers the ecological aspects carefully when making decisions on investments. Thus far, numerous successfully implemented measures in the area of energy and resource management have helped the Lufthansa Group to achieve a considerable lessening of its environmental burden. This improvement is almost always linked with an economic benefit as well. A comprehensive approach to environmental management at Lufthansa has made a significant contribution to this progress.

Lufthansa will continue to integrate the latest energy- and resource-saving aspects in planning, renovating and constructing buildings.

#### **Environmental management**

Lufthansa always strives to maintain a balance between economic and ecological considerations that is advantageous for all parties concerned. Therefore, environmental care has a long tradition at Lufthansa and is one of the highest priority corporate goals.

Lufthansa will further expand and strengthen its environmental management at the Group level and in the Group companies.

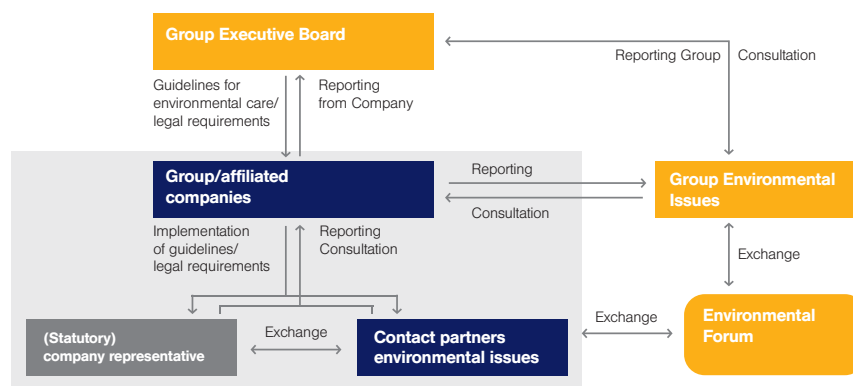
## Environmental management

## We improve environmental protection and environmental care sustainably

Environmental protection and sustainable development are high-priority goals of Lufthansa's corporate policy. As long ago as 1996, the Executive Board approved Group-wide guidelines for environmental care. This made Lufthansa an environmental pioneer in the aviation industry. These guidelines, which are binding for all employees and Group locations, are to ensure that all Lufthansa companies consistently pursue the shared goal of environmental protection and continuously improve environmental care. This applies in equal measure to the purchase of new aircraft, flight operations, and the planning and constructing of new buildings and facilities. In this way, employees can identify and assess the effects of processes and entrepreneurial decisions on the environment at an early stage.

### Organization of the Group-wide environmental management

The Group Executive Board of Deutsche Lufthansa AG bears the full responsibility for the Group's fulfillment of environmental protection tasks. In doing so, it is supported by the Head of Environmental Issues and his department, which coordinates Group-wide environmental goals, strategies and measures. In addition, he regularly coordinates environmental activities with the 24 Environmental Issues Contact Partners at the Group subsidiaries, and develops and analyzes innovative environmental concepts – always in close cooperation with the departments concerned.



To fulfill these tasks even more effectively, Lufthansa has created two more interdivisional committees at the Group level which define the basic framework for the control and guidance of all processes relating to environmental and sustainable issues across the Lufthansa Group: the Environmental Forum and the Sustainability Board.

The environmental experts and members of the Group's employees representation have met at least twice a year since 1998 in the framework of the Environmental Forums to share information on joint goals and activities and to coordinate strategies and new measures.

The interdisciplinary and interdivisional Sustainability Board is anchored in the upper management level. This committee primarily looks after consulting and coordinating tasks and reports directly to the Executive Board. The heads of the departments Investor Relations, Corporate Communications and Group Human Resource Policies are members of the Sustainability Board. In addition, the heads of Group Policy as well as the department Group Environmental Issues are represented here.



The Lufthansa's Group's environmental experts regularly exchange information at the Environmental Forum.

Moreover, Lufthansa has set up an Energy Forum in the area of Group-wide Facility Management. This forum meets regularly with the participation of the head of Group Environmental Issues.

The information basis for environmental management at the Group level is the comprehensive sustainability database, which each year captures the current data concerning energy, kerosene and freshwater consumption, emissions, noise, waste, and wastewater. These are complemented by key personnel and economic data. Supported by this information, the environmental experts calculate key indicators, which they use to help improve Lufthansa's performance in environmental protection on a continuous basis. The most important environmental data of SWISS, which has been fully consolidated since July 1, 2007, have already been integrated in the sustainability database, in particular data on transport performance, kerosene consumption and emissions.

The Group places great emphasis on an open and constructive dialogue with its stakeholder groups (you can find further information on this topic in the section "Stakeholder dialogue" on page → 15). The best example of this dialogue is this Sustainability Report, which is being published for the 14th year in a row. Furthermore, Lufthansa further optimized its Internet presence on the topic of sustainability in 2007, following redesigning in 2006. Internet users find further information concerning the Group's activities in the areas of ecology, social responsibility and corporate citizenship at → <http://responsibility.lufthansa.com>. Also available are current Lufthansa news items on air transport and sustainability. There, interested readers can also find detailed information about the environmental performance indicators of the individual Group companies. Finally, these pages provide details on the Group company's environmental measures and goals and the degree to which these have been attained.

→ <http://responsibility.lufthansa.com> → Environment → Environmental management

## News from the Group companies

### Lufthansa CityLine – EMAS II for Group companies

In terms of the certification of its environmental management systems, the Lufthansa Group already occupies a top position in the aviation industry. The best example of this is Lufthansa CityLine, one of five partners in the Lufthansa Regional network. It is one of only two airlines worldwide whose environmental management systems have been certified both by the internationally acknowledged environmental standard ISO 14001 and the European eco-audit regulation EMAS II. In 2007, its affiliated companies CityLine Canadair Simulator und Training GmbH and CityLine Avro Simulator und Training GmbH also received the EMAS seal for their environmental management systems. Currently, both companies are preparing for certification in 2008 according to ISO 14001.

### Lufthansa Cargo – new environmental guidelines

The new environmental guidelines of Lufthansa Cargo AG (LCAG) are another example of Lufthansa's efforts to continually improve and expand its environmental management systems. The long-term goal is to certify all large Group companies according to ISO 14001. In September 2007, Lufthansa subsidiary LCAG launched its efforts in this direction by approving new environmental guidelines. "These guidelines are not only part of but also the framework for Lufthansa Cargo AG's environmental management system, which is currently being put in place. At the same time, they are the starting signal for further environmentally relevant measures in the company," explains Bettina Mörth, who is responsible for Environmental Management at Lufthansa Cargo.

Currently, the freight airline is expanding its environmental management system at its Frankfurt location, so that it meets the requirements of ISO 14001 and can be certified accordingly at the end of 2008. In setting up its own sustainability database, the company can take advantage of structures already in place within the Group. The LCAG Executive Board and other management representatives participate in the work of the newly-created Environmental Improvement Team. In addition, there are environmental coordinators in all relevant areas of the company. They are responsible for the implementation of the environmental management system within their spheres of influence.

In April 2008, LCAG added new environmental goals to its environmental management system. These represent a further step in the continuous improvement of the company's environmental performance.

You can find the environmental guidelines, environmental activities and environmental goals of Lufthansa Cargo AG at:

→ [www.lufthansa-cargo.com](http://www.lufthansa-cargo.com) → Company → Environment

#### **Lufthansa Technik – standardized processes at all affiliated companies**

Lufthansa Technik (LHT) is the first company in the maintenance, repair and overhaul (MRO) industry to have an integrated, process-oriented quality management system covering the areas of aviation law, quality, environment and job safety that meets international standards and has been certified accordingly. The basis for this system is the innovative documentation system IQ MOVE, which replaces all printed process directives and manuals for quality management, environmental management and job safety and now bundles all these documentations in a single intranet application. There, employees find information on all operational and regulatory requirements quickly and easily. "Over the medium term, our goal is to have all companies of the Lufthansa Technik Group working according to best-in-class processes," explains Ralf Wunderlich, who is responsible for Environmental Protection at Lufthansa Technik. "We are planning to describe all LHT operating companies on the basis of a standardized, process-oriented approach in IQ MOVE by 2012," adds Axel Hoffmann, project manager for the rollout of the documentation system.

The wholly-owned subsidiary company Condor/Cargo Technik (CCT) has already reached this goal. In October 2005, it was absorbed in the aviation license of Lufthansa Technik and has been fully integrated in the parent company's processes since 2007. CCT's environmental management system now largely corresponds to that of Lufthansa Technik and received the certification according to ISO 14001 in May 2007. Lufthansa Technik Logistik, a further subsidiary company, has also been integrated in IQ MOVE since July 1, 2007.



**Measures – operations/cockpit:**

- Paperless cockpit/EFB
- Worldwide flight planning system "Lido OC" by Lufthansa Systems calculates the optimum route for each flight and thus helps to conserve fuel
- Flying at variable speeds
- Improved use of winds and CDA
- Flying on optimized routes

**Measures – cabin**

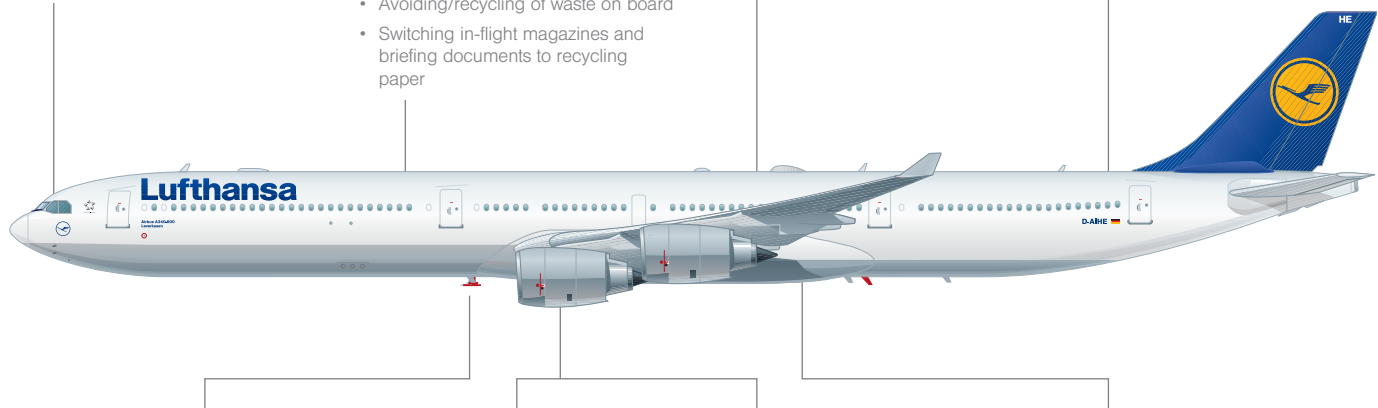
- Optimization of cabin design under the aspects of weight and thus fuel savings:  
Example A: weight reduction and thus cutback of specific fuel consumption by installing more lightweight seats  
Example B: more lightweight ovens in the galleys
- Avoiding/recycling of waste on board
- Switching in-flight magazines and briefing documents to recycling paper

**Measures – freight**

- Optimized loading
- Weight reductions in loading equipment and devices

**Optimized utilization of aircraft capacities (seat-load factor/payload factor)**

Deployment of suitable aircraft (adapting to actual booking situation), leading to optimized utilization and improvement of specific fuel consumption

**Support for climate research**

For this, Lufthansa A340-300s were equipped with sensors and one Lufthansa A340-600 was equipped with a measurement container; under the guidance of the Max Planck Institute, this "flying laboratory" helps to clarify complex processes in climatic change

**Technological progress**

Operation of modern, more efficient and simultaneously more low-noise engines (e.g. A330, A340-600, soon A380 and B 747-8)

**Measures – maintenance**

Innovative engine cleaning to increase efficiency of engine performance; further optimization of the process

**Measures – operations/loading**

- Optimized freshwater supplies
- Optimization of fuel quantities
- Optimization of the center of gravity in flight by pumping kerosene between fuel tanks, thus less drag

Direct measures to increase the ecological efficiency all around the aircraft at the Lufthansa Group.

On the Internet at <http://responsibility.lufthansa.com>, you can find a matrix of Group-wide environmental goals and measures, including further measures on the ground and in the air.

## Kerosene and emissions

## Only 4.32 liters of kerosene per 100 passenger kilometers

**Fuel consumption**

2007, absolute

<b>Kerosene passengers</b>	4,815,278 tonnes
<b>Kerosene freight</b>	2,111,111 tonnes
<b>Kerosene total</b>	6,926,389 tonnes

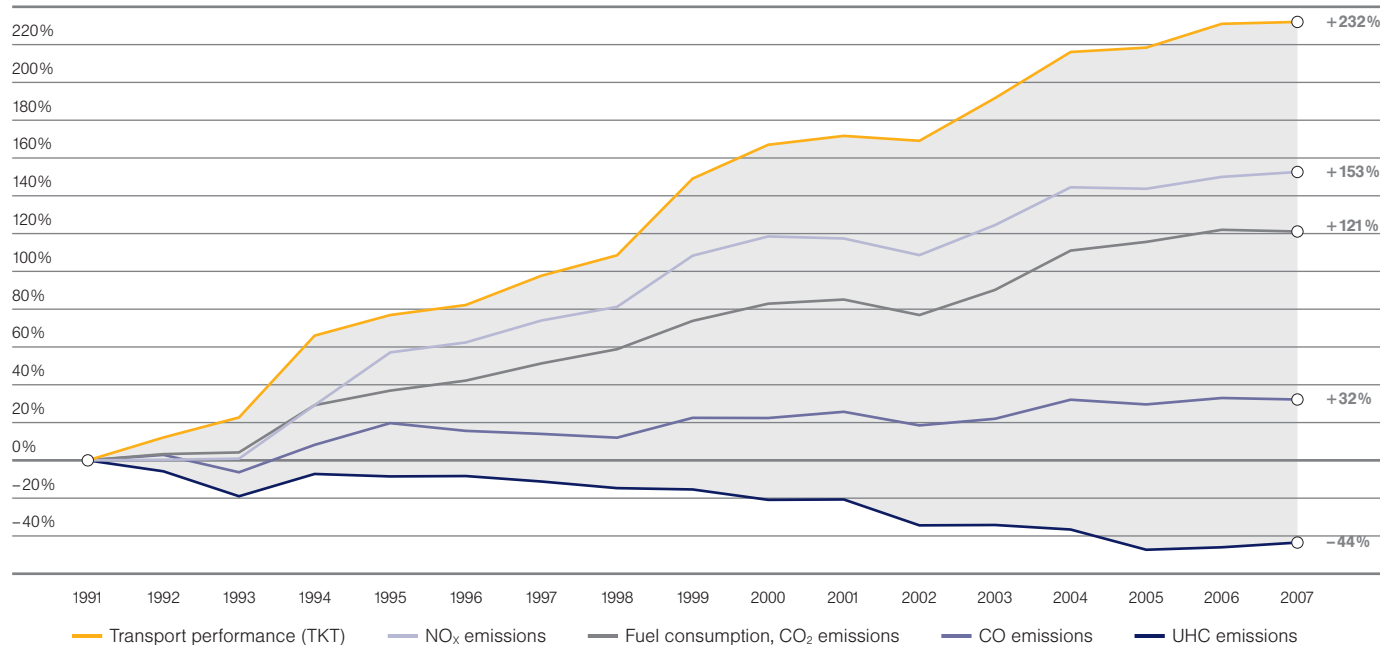
Conserving kerosene and protecting the environment has a long tradition at Lufthansa. For many years, the aviation company has paid special attention – for economic and ecological reasons alike – to keeping fuel consumption and thus also CO<sub>2</sub> emissions as low as possible. In fact, Lufthansa has achieved a continuous decoupling of transport performance from environmental effects since 1991: Over the past 17 years, transport performance increased by 232 percent, while kerosene consumption and CO<sub>2</sub> emissions rose only by 121.1 percent. This means that about half of this growth could be realized without an additional burden to the environment. The main reason for this is the continuous modernization of the Lufthansa fleet.

Lufthansa has also set itself the goal of reducing the specific fuel consumption of its passenger fleet to 33 percent below 1991 levels by 2008 – and by as much as 38 percent by 2012. The reduction of specific CO<sub>2</sub> emissions is automatically linked with this. The first goal has nearly been reached: By year-end 2007, the passenger aircraft operated by Lufthansa had reduced their specific kerosene consumption by 30.3 percent.

It is also encouraging that the specific fuel consumption in passenger transportation declined to 4.32 liters per 100 passenger kilometers during the reporting year. This is the second-lowest value in the company's history. In 2007, the most fuel-efficient aircraft in the Group was the SWISS Airbus A340-300, with a specific kerosene consumption of 3.11 liters per 100 passenger kilometers. This corresponds to CO<sub>2</sub>

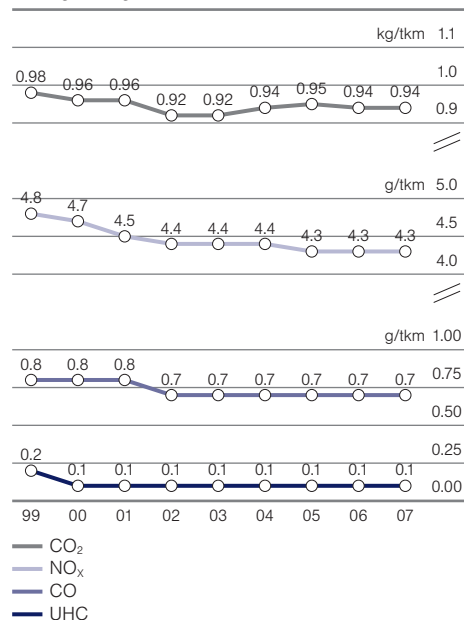
**Decoupling of transport performance and environmental burden**

Change compared with 1991 in percent, values for the fleet of the Lufthansa Group



**Specific emissions in flight operations**

(Passenger and freight transportation) in kilograms, grams/tonne kilometer



emissions of 7.8 kg per 100 passenger kilometers (see also diagrams “Specific fuel consumption by type of aircraft” and “Specific CO<sub>2</sub> emissions by type of aircraft” on page → iii).

In absolute figures, Lufthansa’s fuel consumption declined by 0.2 percent to 6.93 million tonnes in 2007. Due to a new calculation method concerning the allocation of kerosene consumption on passenger aircraft also carrying freight, the absolute fuel consumption in passenger transportation declined by 13.2 percent, while consumption in freight transportation increased significantly (you can find detailed information concerning the so-called weighting factor in the chapter “About this report” on page → 5).

To save ever more kerosene, Lufthansa does not count exclusively on its modern, environmentally compatible fleet, however. A multitude of measures and ideas in flight operations, such as the Electronic Flight Bag or the flight planning software Lido Operations Center, also contribute to this goal.

**EFB – a revolution in the cockpit**

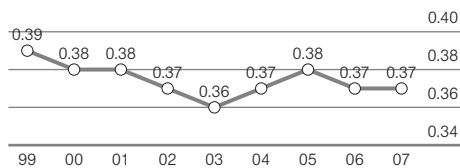
Lufthansa’s project “Electronic Flight Bag” (EFB) represents an important step in the direction of a paperless cockpit and thus an important contribution to lessening the environmental burden. The “EFB Class 2,” which was developed by Lufthansa Passenger Airline and Lufthansa Systems, administrates all the information a crew needs for its flight, electronically. “We free pilots from paperwork. In the near future, they will be able to call up all the relevant information by pushing a button on an additional monitor near the side-window – the necessary navigational maps as well as all current weather data, including automatic updates and data synchronization,” explains Lufthansa project manager Jens Ritter.

Legal regulations stipulate that the complete map materials in the cockpit of an aircraft be replaced once a week. Every seven days, therefore, Lufthansa renews eight binders filled with navigational maps made from paper on each aircraft in the Group’s fleet. As soon as EFB Class 2 – with its 10.4” screen – will have been introduced fully at Lufthansa Passenger Airline, Lufthansa CityLine and Lufthansa Cargo, however, the company will be able to conserve enormous quantities of raw materials

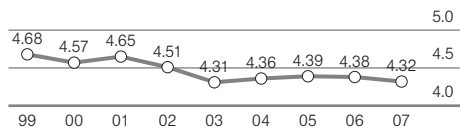


By introducing the Electronic Flight Bag, Lufthansa can conserve considerable quantities of raw materials.

#### Specific fuel consumption in flight operations (passenger and freight transportation) in liters/tonne kilometers



#### Specific fuel consumption in passenger transportation in liters/100 passenger kilometers



#### The initiative "Luftverkehr für Deutschland"

In July 2003, the initiative "Luftverkehr für Deutschland" (Air Transport for Germany) was founded by Deutsche Lufthansa AG, Deutsche Flugsicherung GmbH, Fraport AG and Flughafen München GmbH. The goal of the initiative is to secure and expand Germany's international competitiveness by reducing the location's costs, increasing its quality long-term and creating a suitable framework of general conditions. The initiative's patron is Federal Minister of Transport Wolfgang Tiefensee. Furthermore, there is close cooperation with regard to certain issues with individual federal ministries (economics, finance, interior and environment) and the German Länder. In addition, the air transport associations ADV and BDF cooperate with the initiative.

→ [www.initiative-luftverkehr.de](http://www.initiative-luftverkehr.de)

– 1,100 tonnes of kerosene, 12,000 liters of diesel, 16 million sheets of paper, 476,000 liters of water and 11 tonnes of fresh wood – and save about 4 million euros each year.

#### Software saves fuel

Flight routes that are as direct as possible also make a considerable contribution to saving kerosene and thus also reducing CO<sub>2</sub> emissions. Therefore, Lufthansa Systems has developed dedicated applications – such as the flight planning solution Lido Operations Center – that allow airlines to optimize their routings with regard to fuel consumption, costs and flying time. Today, more than 30 carriers work with the world's most modern flight planning system, which had its origins at Lufthansa Passenger Airline.

A newly developed module for the Lido Operations Center calculates flight routes even more directly by including the Traffic Flow Restrictions set by the aviation authorities automatically and by combining partial route segments into an optimum route whenever appropriate. Depending on the specific operating environment of an airline, this can generate fuel savings of up to 2 percent – a significant quantity when applied to an airline's annual transport performance.

"With an improved flight route, it is possible, for example, to save about 4 tonnes of kerosene on a flight between Frankfurt and San Francisco. For the airline, this not only saves money but also reduces the emissions it releases into the atmosphere," explains Marc Szepan, Senior Vice President Airline Operations Solutions at Lufthansa Systems.

Solutions from Lufthansa Systems also see to it that the engines' thrust is ideally adjusted during takeoff by taking into account the current conditions, such as aircraft weight, weather and runway length. This ensures that Lufthansa aircraft do not consume excessive amounts of fuel. In addition, there is a system that monitors the performance data during the flight. By correcting values that deviate from the norm, unnecessary kerosene consumption can also be avoided.

#### Climate protection – acting with foresight

Since 2007, Lufthansa passengers have had the opportunity to contribute to climate protection by compensating the CO<sub>2</sub> emissions arising from their journey by means of a voluntary donation. The aviation company offers this new service in cooperation with the renowned Swiss nonprofit foundation "myclimate – The Climate Protection Partnership." Interested passengers can enter origin and destination of their flights on the Internet page → <http://lufthansa.myclimate.org> The system then calculates automatically the CO<sub>2</sub> emissions produced by their trips and the amount of their voluntary climate donations. These donations go to benefit certified climate-protection projects.

You can find a detailed description of this new service in the article "Securing mobility in sustainable ways" from page → 54.

#### Emissions-related airport charges

Another project with signal effect started on January 1, 2008: An emissions-related component in takeoff and landing fees will be tested for the next three years at the airports in Frankfurt and Munich. All airlines flying to the two hubs pay 3 euros per kilogram of nitrogen oxide (NO<sub>x</sub>) emitted. In this way, the operation of aircraft with low NO<sub>x</sub> emissions is rewarded. At the same time, emissions-related airport charges are a long-term signal to aircraft manufacturers to drive forward technological innovation.

The initiative “Luftverkehr für Deutschland” (Air Transport for Germany) played a decisive role in developing this project in cooperation with the associations ADV and BDF and Germany’s Federal Ministry of Transport. “In this way, we give airlines an incentive to operate modern and environmentally friendly aircraft. Deutsche Lufthansa – as Germany’s largest aviation company – proves that it regards environmental protection as an important issue,” explained Federal Minister of Transport Wolfgang Tiefensee on the occasion of the project’s presentation on September 26, 2007 in Berlin.

<b>Fuel Dumps</b> 2007		changes compared to 2006
<b>Events, total</b>	27	-15
<b>Quantity, total</b>	1,010 tonnes	-21.1 %
<b>Medical reasons</b>	12	±0
<b>Technical reasons</b>	13	-16
<b>Other reasons</b>	2	+1

### **Fuel dumps: Safety first**

To ensure the safety of passengers and crews, fuel dumps under exceptional circumstances can not be avoided. Given the high level of technical aircraft maintenance, they occur exceedingly rarely at Lufthansa. Yet no airline in the world is entirely free of them. Whenever pilots are forced to make an unscheduled landing for technical or medical reasons, they first need to empty the fuel tanks until the aircraft’s maximum permissible landing weight is reached. Fuel dumps affect only long-haul flights, as short- and medium-haul aircraft are able to land fully loaded and with full tanks.

## **Noise emissions**

### **We do a lot for less noise**

Mobility has long since become an indispensable component of our society. However, road, rail and air traffic are inextricably linked with noise emissions. While these can not be avoided entirely, they can be reduced to a bearable amount. Lufthansa pursues at all times all available opportunities to limit aircraft noise. For example, the airline has been actively committed for over eight years to the research network “Quiet Traffic.” In this context, partners from business and research have gathered at the initiative of the German Aerospace Center (DLR) to develop, compile and analyze new insights into noise sources and measures to reduce noise.

Within the research network “Quiet Traffic,” the Head of Environmental Issues at Deutsche Lufthansa AG has led and coordinated the working group “Aircraft Noise” since 1999. The partners from industry and science working actively in this framework have planned and implemented numerous research and development projects supported by the Federal Ministry of Economics in the context of its Aviation Research Program. In these projects, scientists investigate not only topics from the areas of engine and aerodynamic noise but also the noise generation associated with different flight procedures. The spectrum of necessary work in this context ranges from the development of computer-based design tools for future quieter aircraft (“design-to-noise”), using wind-tunnel measurements, to the investigation of concrete noise reduction measures for aircraft already in service. Lufthansa and its partners work continuously to keep abreast of these emerging solutions and innovative technological advances in a focused manner.

The research projects LEXMOS, NASGeT and FREQUENZ, for example, focus on the type and effect of noise sources. They are already far advanced and will be concluded in 2008. The project LAnAb – the participating partners concluded this work successfully in 2007 – concentrated on the noise effects of flight procedures (you can find details about these research projects in the article “Research at Lufthansa” on page → 75).

In 2006, the working group Aircraft Noise agreed to continue the work on the topics under investigation in these four projects in the joint follow-up project MASSIF (measures on noise-level reduction in air transport) and to interlink these topics more intensively. Despite a positive evaluation of its content, the project proposal has not yet received support in the framework of LuFo IV or other research programs. Nevertheless, to be able to advance in terms of content in the meantime, the research partners expanded the ongoing LuFo III projects by adding important topics such as fly-over measurements on a Boeing 747-400, which are planned for summer 2008. These measurements serve to expand an existent simulation tool based on data from an Airbus A319 to four-engined wide-body aircraft such as the Boeing 747-400. Using the expanded simulation tool and other calculation programs, the work on flight procedures already begun is to be continued and systematically expanded in a follow-up project by the experts involved in the LAnAb project. This analysis is to take into account noise aspects as well as pollutants, airport capacities and safety.

→ [www.fv-leiserverkehr.de](http://www.fv-leiserverkehr.de)

#### **Aircraft noise protection regulations not yet implemented**

New legal regulations open up additional potential to protect persons affected by noise. Thus, the amended aircraft noise protection law, which took effect on June 7, 2007, represents a balanced compromise between the interests of the aviation industry and those of persons living close to airports or otherwise affected by aircraft noise. To implement the subject matter defined by the law, four aircraft noise protection regulations must be amended. By the end of 2007, however, none of these regulations had become applied law as those responsible are still refining certain details of their content. In particular, the practical regulations concerning noise protection should be determined swiftly according to the noise limits defined by the law. Until this has been done, the airports can not implement these legally envisaged measures to protect those affected by noise, and those affected can not begin benefiting from this protection.

## **Intermodal transport**

### **A benefit for the environment**

The worldwide growth of air transport requires an intelligent linkage between the different modes of transportation. For this reason, Lufthansa has for many years cooperated with partner companies to realize intermodal transport concepts that interlink air, rail and road traffic in a system-oriented manner.

#### **AIRail: “Flying” on the rails**

An example of intermodal transport is the AIRail service. This cooperation, which was launched by Lufthansa and Deutsche Bahn (German Rail) in 2001, allows Lufthansa passengers to start their journeys at the central stations in Cologne or Stuttgart at “altitude zero.” The reason: Thanks to AIRail, they travel by ICE high-speed train, instead of by aircraft, to Frankfurt to reach their connecting flights. On the route Cologne – Frankfurt, Lufthansa has already reached its goal of replacing short-haul flights with rail service: Following the introduction of AIRail routes in 2003, the company withdrew two of six daily feeder flights; the remaining four connections were withdrawn from the timetable in 2007. Passengers now have a choice of 25 train connections per day between Cologne and Frankfurt. Due to high demand, passengers have also been able to check in for their “train to the plane” flight at the ICE train station in Bonn/Siegburg since November 2007.





AIRail – 25 daily connections between Cologne and Frankfurt.

### **Rail & Fly: Train to the plane, now for even less**

The approach used by Rail & Fly is also intermodal. This feeder service operated by Deutsche Bahn carries Lufthansa passengers from any train station in Germany to their international connecting flight. Since July 2007, particularly attractive prices have been in effect for this offer. For example, a regular one-way train trip in second class – in connection with an international connecting flight on Lufthansa – to a German airport served by Lufthansa costs only 19 euros, while a ticket in first class can be had for only 39 euros.

The Lufthansa Airport Bus also helps to lighten the burden on the environment. Operated with alternative fuels, this bus service provides 12 daily connections between Frankfurt and Strasbourg. Another environmentally friendly feeder service is the Lufthansa Airport Shuttle from Mannheim and Heidelberg to Frankfurt Airport, and from several cities in southern Germany or Austria to Munich Airport.

### **time:matters**

The Lufthansa subsidiary time:matters combines as many as four modes of transport to carry customer shipments: Alongside airplanes, trains and cars, the logistics service provider has also used bicycles since 2005. Currently, there are time:matters bicycle couriers in 18 German cities.

### **Combination road-and-rail transport**

Intermodal transport also plays an important role at Lufthansa Cargo. For instance, the company transports air cargo in Germany and continental Europe by truck to its hubs in Frankfurt and Munich. Since 1998, the wholly-owned Lufthansa subsidiary has also shipped part of its freight volume via combined road-and-rail transport. This is made possible by a scheduled service offered by Deutsche Bahn, which Lufthansa Cargo took advantage of 43 times a week in 2007. Here, trucks that started their journey in Frankfurt are loaded onto trains in Freiburg (southern Germany) or Wörgl (Austria). Once they arrive in Novara or Trento (both in Italy), the trucks continue by road to their destinations in Milan and Venice. Furthermore, Lufthansa Cargo uses intermodal services to handle ad-hoc consignments – provided the railway company has enough capacities beyond those needed for guaranteed scheduled services. In 2007, 35 trips a week took place in this way; that corresponds to a 3-percent share of the company's European freight volume. Almost 1 million road kilometers a year can be avoided in this way.

## **Energy and resource management**

### **As much as necessary, as little as possible**

The Earth's natural resources are finite and thus extremely precious. For Lufthansa, sustainable economic development is thus an expression of actively making provisions for the future. And that begins not in the air, but on the ground. In the framework of its energy and resource management, the Group leaves no stone unturned to find ways of avoiding waste and improving the energy efficiency of its processes – as the following examples illustrate.

### **Sustainably into the future: Energy management at Lufthansa**

In its role as an international aviation group, Lufthansa carries a high level of responsibility for the careful use of natural resources – above all in the area of energy. The goal of energy management in Lufthansa's large business segments Passenger Transportation, Logistics, MRO, IT Services and Catering is to minimize energy consumption. Beyond that, the Group strives to lastingly improve the energy balance sheet of its buildings in Germany.

In this context, Lufthansa records and analyzes the environmental effects of its business activities very precisely. For example, the Facility Management Department continuously develops concepts aimed at further reducing the energy consumption of Lufthansa's real estate. Here, the focus is not only on monitoring consumption values and analyzing weak spots or leaks, but also on the conception and implementation of building-specific measures.

#### **Certification of the Lufthansa Aviation Center**

In 2007, the search for savings potentials did not cease at the Lufthansa Aviation Center (LAC), the office building that was occupied by 1,800 employees as recently as in 2006. However, these potentials were scant, as the new administration building at Frankfurt Airport is a "low-energy building," requiring only about one-third of the energy needed for a conventional office building of this size. Reliable information concerning the building's energy balance sheet are not available yet. But independently of that, Lufthansa does not miss any opportunity to reduce the building's energy consumption further. For example, an information manual for the employees working at the Lufthansa Aviation Center is being planned to promote energy-efficient conduct. As the LAC also serves unreservedly as a role model, the Facility Management Department is also cooperating with the EU Commission to have the LAC certified as a "green building."

#### **Eco-electricity for 38 buildings in Germany**

Moreover, the Facility Management Department is working closely with Corporate Purchasing, which is responsible for ensuring the Germany-wide energy supply of Deutsche Lufthansa AG and its Group companies. Since January 1, 2008, 38 buildings in Germany are supplied with eco-electricity. At the Frankfurt location, the new catering building of LSG Sky Chefs, which opened in May 2008 at Gateway Gardens just northeast of Frankfurt Airport, is the largest user of "green" electricity, at about 30 million kilowatt hours per year. The Group has purchased a total of almost 60 million kilowatt hours of eco-electricity, a volume that corresponds to the consumption of about 33,500 one-person households. As 100 percent of this eco-electricity is generated by hydropower, about 26,000 tonnes of carbon dioxide emissions can be avoided in 2008 in comparison with "gray" electricity.

Apart from the acquisition of electricity, Corporate Purchasing is also responsible for buying supplies of natural gas, distance heating and water. Another task is to provide analyses of the market's development and the potentials over the short, medium and long term arising for Lufthansa from the liberalization of energy markets.

#### **Group-wide Energy Forum**

In 2004, Lufthansa set up its Energy Forum in order to offer those responsible for the Group's infrastructure in Germany a regular platform for exchanging experiences and opinions. Taking place once a year in Frankfurt, the event is coordinated by Facility Management and is primarily aimed at the experts at the Group companies. This year, the Energy Forum took place on June 10, 2008 and was accompanied by external expert presentations.

### **Waste management at Lufthansa: A benefit for the environment and the Group**

Passenger expectations regarding in-flight catering have increased over the past years. One of the ways that Lufthansa addresses this development is by offering meals that are characterized by a maximum of quality, freshness and flavor. In addition, the airline provides its passengers with a broad selection of beverages as well as numerous German and international newspapers and magazines. Just under 72,500 tonnes of waste have to be disposed of at the around 70 airlines supplied in Europe by LSG Sky Chefs, the catering subsidiary of Lufthansa.

As an expression of a responsible use of energy and resources, Lufthansa cabin staff aims at feeding as much waste material as possible into the recycling process. This means that the majority of bottles, cans and plastic containers are stored again in the beverage trolleys – provided the flight circumstances allow for this. In this way, about 2,700 tonnes of glass and 2,000 tonnes of lightweight packaging such as aluminum, plastic and compound materials can be recycled every year in Europe alone.

### **Handling of food leftovers strictly regulated**

The situation is entirely different for the waste from meal services. To exclude all imaginable health risks, its transport and disposal are subject to the strict European regulation EG 1774/2002. It regulates the handling of animal food stuffs originating in countries outside of the European Union. Contrary to recyclable newspapers, for example, food leftovers, foil remainders, repackaging, transport packaging, beverage cartons or cans have to be consistently burned, stored at special disposal sites or disinfected – when they arrive in an EU country by air. At LSG Sky Chefs, this comes to about 40,000 tonnes per year Europe-wide. Therefore, Lufthansa has been set tight limits with regard to reusing food leftovers and recycling packaging waste that has been in contact with them. Only reusable dishes that can be washed with hot water and disinfected are exempted from the disposal obligation.

### **Recycling rate consistently high**

The recycling rate at LSG Sky Chefs Deutschland, which delivers about 170,000 meals to its customers every day, has been constant at 48 to 50 percent for many years. In comparison, the company's European recycling rate reaches 43 percent. Against this background, the company strives to avoid wastes such as food leftovers, bottles, cans, plastic containers, newspapers and magazines in the first place. To this end, Lufthansa purchases and stocks only those quantities that are actually needed in the course of a flight. Moreover, today's in-flight meals come only with minimal – and above all lightweight – packaging to keep the takeoff weight of aircraft as low as possible.

LSG Sky Chefs is confident that the aforementioned European recycling rate can be increased significantly. One reason for this optimism is a modernization of waste management in Great Britain. It allows the British operations of LSG Sky Chefs to head in new directions when it comes to the disposal of waste and to take advantage of recycling potentials in a more targeted way. This is becoming possible because British legislation now gives priority to the recycling of bottles, cans, plastic and paper over disposal in landfills due to dramatically declining capacities at waste disposal sites.

### **Less is more: Optimized loading of menu cards**

Lufthansa knows how to work in a resource-conserving manner while still reaching its economic goals. This approach is also illustrated by the following example at LSG Sky Chefs: The Group company has developed a concept that allows the need-oriented loading of menu cards aboard aircraft for service in Business Class.



LSG Sky Chefs is the worldwide market leader for airline catering and in-flight management. This also includes disposal and recycling of waste materials.

About 10 to 15 percent of all menu cards can be saved each year in this way – a volume that corresponds to a Euro palette stacked with paper to a height of 40 meters. Until recently, these menu cards were delivered to the plane in bundles, so they regularly outnumbered the passengers and seats in Business Class. Thanks to a new loading system, menu cards are today stored in lockable boxes, where they are also better protected. Instead of a whole bundle, the crew now uses only as many menu cards as there are passengers traveling in Business Class on a given flight. Following a successful two-month trial period in summer 2007 on all flights to North America, LSG Sky Chefs is currently evaluating a worldwide introduction of the new system on all intercontinental flights operated by the Lufthansa Passenger Airline.

### **CO<sub>2</sub> reduction concept at Lufthansa Technik**

In September 2007, Lufthansa Technik (LHT) signed a voluntary letter of intent to reduce its CO<sub>2</sub> emissions – together with 11 other industrial companies in Hamburg and the Hanseatic city's environmental minister. The goal of this letter of intent is to encourage these Hamburg-based companies to optimize voluntarily their plant technology and production processes by 2012 in such a way that their energy consumption and thus also their CO<sub>2</sub> emissions will fall by more than 500,000 tonnes per year. Against this background, Lufthansa Technik has set itself the goal of reducing its current CO<sub>2</sub> emissions of 40,000 tonnes a year by at least 15 percent by modernizing its buildings and making the energy use in infrastructure and manufacturing processes even more efficient.

To reach this goal, the Executive Board of Lufthansa Technik gave the green light in October 2007 for a comprehensive CO<sub>2</sub> reduction concept, which is also the basis for a long-term energy-efficiency strategy at the Hamburg location. "The public measures the image and credibility of Lufthansa by its efforts to reduce its emission of climate-relevant gases. Furthermore, demand for fossil fuels drives energy prices further and further upward. Cutting back energy consumption is, therefore, not only an ecological but also an economic necessity," explains Jens-Peter Fahs, head of the project to reduce CO<sub>2</sub> emissions at the Lufthansa Technik Base in Hamburg.

### **Basic research traces savings potentials**

From October 15, 2007 – the official start of the project – to mid-January 2008 Lufthansa Technik conducted a comprehensive basic study to determine the energy consumption and CO<sub>2</sub> emissions of all its buildings and processes, identify savings potentials and check these solutions for their fundamental feasibility. The company also investigated whether and to what extent the use of regenerative energies can make a perceptible contribution to improving the climate balance sheet of Lufthansa Technik in Hamburg.

### **60 percent lower CO<sub>2</sub> emissions are possible**

The results of the basic study were unequivocal: It showed that the biggest savings potentials are associated with optimizing the production processes and the central infrastructure and continuing the systematic modernization of buildings. The use of a combined power-and-heating station was verified as a possible savings potential. In the final analysis, continuous and transparent billing of energy consumption is needed to let users participate directly in conservation measures as well as to detect and eliminate possible changes in consumption due to failures.

"Realizing all these conservation measures would theoretically reduce our CO<sub>2</sub> emissions by about 60 percent," reports Jens-Peter Fahs. For this reason, Lufthansa Technik evaluated the different measures' economic efficiency by June 2008. The focus of this second project phase was on developing a scenario regarding how the

identified savings potentials could be realized in a comprehensive way. The company is planning to launch the implementation of the first measures in the course of 2008. In addition, a concept for the methodical transfer of this approach to other LHT locations and LHT companies is to be developed.

## Research at Lufthansa

### En route in the service of climate research

Air transport affects the environment. To be able to assess these effects objectively, target-oriented research is required. Lufthansa supports a broad range of scientific projects, the results of which form the basis for the Group's effective environmental care activities.

#### EU network AERONET

##### Network for the coordination of European research projects on aviation issues

The network AERONET gathers together all important players in European aviation: aircraft manufacturers, airlines, airport operators, research institutions, universities, public authorities and political representatives. The project's goal is to facilitate the exchange of experience and knowledge and to smooth the way for the competitive and environmentally compatible development of Europe's aerospace industry.

AERONET is particularly committed to advancing aircraft and engine technology with regard to possibilities of reducing CO<sub>2</sub> and other harmful emissions across the entire air transport system. This approach comprises aircraft, flight routings and airport operations alike. Taking into account the debate on the international level, the network searches for specific measures that can help reduce emissions of CO<sub>2</sub> and other pollutants from air transport. Here, AERONET sees itself as a link between atmospheric research and aviation technology research.

AERONET, in its role as a platform for the exchange of experience and information, helps significantly to advance Europe's position in international competition. For example, it gives engine manufacturers more immediate access to the latest research results concerning the effects of air transport on the atmosphere. In addition, AERONET supports the European Commission in identifying relevant issues for its framework of research programs and supports the initiative toward joint projects.

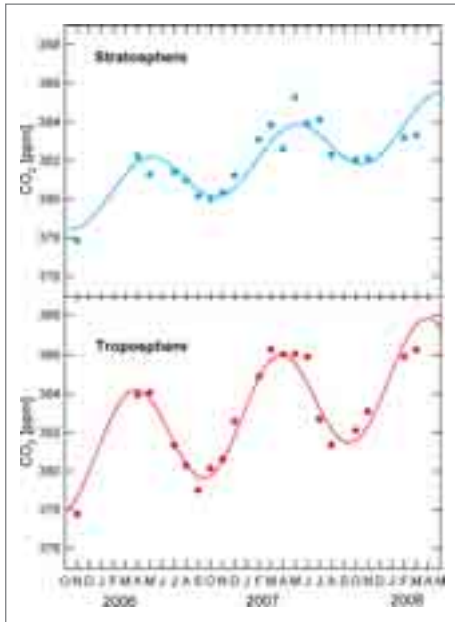
→ [www.aero-net.org](http://www.aero-net.org)

#### EU research project MOZAIC

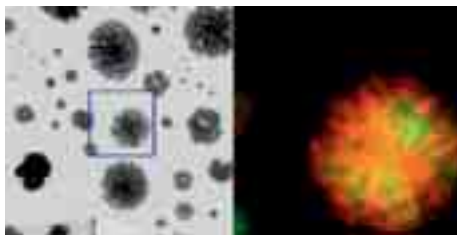
##### Atmospheric research on long-haul flights

The research project MOZAIC (Measurement of ozone, water vapour, carbon monoxide and nitrogen oxides aboard Airbus in-service aircraft) was established in 1993 by European scientists, aircraft manufacturers and airlines. Its goal is to obtain a far-reaching understanding of the processes in the atmosphere and to research the effects of human activities on its composition. The researchers' interest focuses on effects related to ozone and water vapor at altitudes between 9 and 12 kilometers. To acquire a broad database, which then serves as the point of departure for studies concerning the chemical and physical processes in the atmosphere, data has been captured on about 2,300 flights a year since 1994. In 2007, three Airbus A340-300 long-haul aircraft were en route every day for this project – including two operated by Lufthansa. These aircraft are equipped with sensitive sensors, which continuously measure the atmosphere's content of ozone, water vapor, carbon monoxide and nitrogen oxides while the aircraft is in flight. Collected for 14 years worldwide, this data is an ideal basis for making global climate models more accurate. Since the





CARIBIC measures more than 100 different trace gases, including carbon dioxide (CO<sub>2</sub>), the most important greenhouse gas. The graph shows a continuous increase of the CO<sub>2</sub> concentration in ppm (parts per million) for the stratosphere (top) and the troposphere (bottom). The pronounced seasonal fluctuations that are typical for the Earth are also well visible. The reason: During the summer months, plants assimilate enormous quantities of CO<sub>2</sub>, and thus its concentration in the air declines rapidly. In fall and winter, CO<sub>2</sub> is again released into the atmosphere.



CARIBIC also investigates aerosols. This "fine dust" plays an important role for the Earth's climate because it serves as a nucleus in cloud formation. In the course of these measurements, its concentration, size distribution and composition are determined. Taken by a Swedish scientist, this picture shows the image generated by an electron microscope of a single aerosol particle (size about 1 millionth of a millimeter). In addition to sulfur (yellow-green), there are also significant quantities of carbon (red). Moreover, nuclear-technical methods of analysis are used to prove the presence of further chemical elements.

termination of EU research funds in 2004, the airlines and research institutes participating in MOZAIC have continued these measurements at their own expense.

You can watch a video about the MOZAIC project on the Internet at:

→ <http://responsibility.lufthansa.com> → Environment → Kerosene & Emissions  
→ [www.fz-juelich.de](http://www.fz-juelich.de)

### EU research program CARIBIC

#### Atmospheric measurement laboratory aboard the "Leverkusen"

The basic atmospheric research project CARIBIC (Civil Aircraft for the Regular Investigation of the Atmosphere Based on an Instrument Container) is a long-term joint project of the Max Planck Institute for Chemistry (Max Planck Society), the Institute for Tropospheric Research (Leibniz Society), the Institute for Meteorology and Climate Research and the German Aerospace Center (both Helmholtz Society) as well as two further partners in Germany and six in five other European countries. This unique project employs the Lufthansa Airbus A340-600 "Leverkusen," which transports a scientific measuring container weighing 1.6 tonnes in its cargo hold every month. A dedicated air inlet system on the aircraft's fuselage feeds ambient air into the container; this inlet also houses a miniature remote-sensing device akin to those used on satellites.

The flying observatory "CARIBIC" thus delivers detailed and precise data on a wide range of trace substances as well as the concentration and size distribution of aerosols. This includes ozone, water vapor, nitrogen oxides, aerosols, greenhouse gases, carbon monoxide, mercury, organic compounds and chlorofluorocarbons. Part of these air and aerosol samples are later analyzed in the laboratory. In this way, for example, CARIBIC has helped to identify an important, as yet little researched source of mercury: forest fires in the southern hemisphere. The combustion of biomass is thus responsible for 3 to 11 percent of the worldwide emissions of mercury, which corresponds to a quantity of 210 to 750 tonnes per year. This environmental poison later finds its way into the food chain, as mercury deposited in lakes and oceans is in part transformed into the highly poisonous methyl mercury, which also accumulates in fish.

You can watch a video about the CARIBIC project on the Internet at:

→ <http://responsibility.lufthansa.com> → Environment → Kerosene & Emissions  
→ [www.caribic-atmospheric.com](http://www.caribic-atmospheric.com)

### EU research project IAGOS

#### Development of an infrastructure to observe the Earth's atmosphere on a global scale with support from civil aviation

IAGOS (Integration of routine Aircraft measurements into a Global Observing System) is a further development of the MOZAIC project. A total of ten partners from the research sector and the aviation industry participate in this project. Launched in April 2005, IAGOS is to make a substantial contribution to the creation of an atmosphere-monitoring network by 2009. The goal is to set up a measuring infrastructure that allows civil aircraft in flight (in situ) to routinely record data on atmospheric trace substances, aerosols and clouds – worldwide and on a broad basis. At the center of these research efforts are lightweight, low-maintenance instruments, which can be integrated into an airline's operations in an efficient manner. These newly developed instruments are to be tested in early 2009 aboard Lufthansa aircraft. The data IAGOS is set to generate will be of central importance for climate research and numerical weather forecasting.

→ [www.fz-juelich.de/icg/icg-ii/iagos](http://www.fz-juelich.de/icg/icg-ii/iagos)

### **EU research project TBCplus**

#### **Development of highly resistant ceramic coatings for engine combustion chambers**

Lufthansa Technik, in cooperation with renowned European aviation institutions, has developed an innovative ceramic protective coating for the combustion chambers and turbine fan blades of aircraft engines. It remains stable under extremely high gas temperatures and thus protects these components better against overheating. With the thermal barrier coatings (TBCs) currently in use, changes in the surface of these materials have been observed repeatedly, particularly in hot areas. Such changes might decrease heat insulation properties or lead to flaking. The consortium expects that using the new-type TBCs will improve the component life span and performance of the engines in use today. After licensing by the aviation authorities, the material's improved protective properties are to be tested and evaluated in operations for several years. Based on these findings, the new TBCs are expected to influence new engine designs and contribute to increasing efficiency and reducing emissions.

### **Interdisciplinary research network "Quiet Traffic"**

#### **Joint research projects to lower traffic-related noise emissions**

To reduce traffic-related noise emissions, the research network "Quiet Traffic," initiated by the German Aerospace Center (DLR), counts on interdisciplinary cooperation between industry, research institutions and the transport industry. Within the network, three working groups examine the specific issues from the areas of road, rail and aircraft noise. Two other working groups analyze issues concerning all modes of transport, such as noise effects, traffic management, sound propagation and noise optimization.

The program section "Aircraft Noise" has been led by the Head of Environmental Issues at Deutsche Lufthansa AG since the launch of the research alliance in 1999. This working group coordinates the following projects:

- The **joint research project LEXMOS** (Quiet engine nozzle systems and advanced methods for the localization of noise sources) is headed by Rolls-Royce Deutschland. Computer simulations and experimental settings are used to investigate how sound is generated at the edges of engine nozzles. Moreover, Rolls-Royce and the DLR continued the development of a microphone measuring system that can be used to make measurements in closed engine test beds largely without failures. The DLR's experts also used this technology with success in the project FREQUENZ 2007.
- In the **joint research project NASGeT** (Innovative active/passive systems for noise reduction on engines), researchers investigate how sound generation can be influenced actively via adjustable engine components. This project is headed by EADS Innovation Works.
- The **joint research project FREQUENZ** (Research on reducing and determining the source noises on civil aircraft by experimental and numeric means) is headed by Lufthansa and consists of three sub-projects flowing one from the other. In this way, new aero-acoustic calculation methods are first developed, then verified in wind-tunnel experiments, and finally used to demonstrate in selected examples how noise can be reduced at the source using retrofit measures.

For this, it is necessary to understand better a number of complex sound-generation mechanisms as well. Repeated acoustic measurements are necessary, as

on the engines of the Boeing MD-11F of Lufthansa Cargo. In October 2007, the microphone measurement system developed within the joint research project LEXMOS in cooperation with partners DLR and Lufthansa Technik could be used successfully at the engine test bed in Hamburg to analyze the acoustic characteristics of the MD-11F's engine fan more closely at different speeds. Owing to the complexity of a number of topic areas, certain work packages have not yet been concluded. For this reason, the project has been extended until fall 2008. A new, outstanding work package is the fly-over noise measurement with a Boeing 747-400, which has been added to the program. These flights are planned for summer 2008 and aim at identifying individual sound sources and sound-generation mechanisms as a first step. In addition to Lufthansa and the DLR, aviation companies and universities participate in the FREQUENZ consortium.

The project can build on existing work jointly conducted by Lufthansa, aircraft manufacturers, public authorities and the DLR. This includes noise measuring flights with a Boeing MD-11F of Lufthansa Cargo and an Airbus A319 of the Lufthansa Passenger Airline. The goal of these flights was to record aircraft-specific characteristics of noise sources and to formulate appropriate noise-reduction measures.

- **Joint research project LAnAb** (Noise-optimized approach and departure procedures). The use of approach procedures such as "low drag/low power" or the Continuous Descent Approach (CDA) can contribute significantly to reducing aircraft noise in the vicinity of airports. Here, advanced simulation methods, which have been further developed in the context of the project and allow the greatest degree of accuracy to date, are used to analyze the sound generation of aircraft. A second set of fly-over measurements was recorded in June 2004, using an Airbus A319, with the purpose of expanding and improving the database of the simulation tool. A further measurement campaign in October 2006 served to validate the first prognostic results of the simulation tool. To do so, Lufthansa pilots flew different approach and departure procedures with an Airbus A319. The noise contour generated by the aircraft was recorded by microphones in an area measuring 40 kilometers by 5 kilometers.

The joint research project ended in 2007. You can find the summary report (in German) at:

→ <http://www.fv-leiserverkehr.de> → Veröffentlichungen → Lärmoptimierte An- und Abflugverfahren (LAnAb)

In addition to Lufthansa, the LAnAb consortium includes Deutsche Flugsicherung (DFS), DLR, EADS Innovation Works and others. A follow-up project for LAnAb is being planned and aims at extending the simulation tool to four-engined wide-body aircraft. The data needed for this purpose will be recorded in the context of the project FREQUENZ by means of additional fly-over measurements with a Boeing 747-400. These measurements have already been scheduled and are an important prerequisite for the completion of this task. The expanded simulation tool and additional calculation programs are to be used for the systematic analysis of flight procedures, taking into account issues concerning emissions of noise and pollutants, airport capacities and safety.

All the joint research projects described above receive funding from Germany's Federal Ministry of Economics and Technology in the framework of various programs.

### **EU research program SEFA**

#### **Investigation of possibilities to influence the tonality of aircraft noise**

SEFA (Sound Engineering for Aircraft) ended in 2007 and worked to develop design criteria for low-noise aircraft as well as the necessary instruments to evaluate these criteria. The project worked to identify those “noise signatures” in aircraft noise that are perceived as least annoying. To do so, the researchers evaluated the influence of the sound spectrum and the direction in which noise is emitted. Deutsche Lufthansa AG’s Head of Environmental Issues served on a consulting panel of experts, which accompanied and appraised the project’s work.

### **Epidemiological study of cosmic radiation**

#### **Continuation of a research project concerning possible mortality risks for cockpit and cabin crews**

As early as 1997, epidemiologists at Bielefeld University investigated whether cosmic radiation has measurable health effects on flying personnel. Together with the German Cancer Research Center and the Professional Association of Vehicle Operators, they analyzed causes of death among all flying personnel who worked for Lufthansa or LTU between 1960 and 1997. The study concluded that there were no indications that work-related increased exposure to cosmic radiation leads to a general significantly increased mortality risk due to diseases associated with radiation. To further increase the validity of this study, the investigation period was extended in a follow-up project to 2003. The project’s scientific supervision is shared by Bielefeld and Mainz Universities. Initial results are not yet available to Lufthansa.

## Corporate citizenship

# Cargo Human Care: Medical help that makes a difference

Health is a scarce commodity in many developing countries – including Kenya. A health insurance system following western examples is just as inexistent as a countrywide health care system. To deliver medical help directly to the many undertreated, sick people there, the employees of Lufthansa Cargo joined forces with German physicians to found “Cargo Human Care e.V.” So far, this aid initiative has helped more than 2,000 people.

Cargo Human Care (CHC) lives on the volunteer support given by dedicated Lufthansa Cargo employees and committed physicians. Since 2004, this humanitarian aid project has provided direct medical relief for the impoverished population in Nairobi, the Kenyan capital. Its foundations were laid by Fokko Doyen, head of the MD-11F fleet at Lufthansa Cargo. When he happened to notice the children’s shelter “Mothers’ Mercy Home” as he was driving by one day, he spontaneously decided to give long-term support to this small AIDS orphanage in Nairobi’s periphery. What started with a sports bag full of children’s clothes has since turned into a registered charity, which is financed exclusively by donations and already counts more than 100 members.

Cargo Human Care also receives hands-on support from management: The freight carrier specifically puts its core competency at the service of this humanitarian project. The wholly-owned Lufthansa Group company not only pays the air fares for the med-

When on volunteer duty, the medical specialists from Germany primarily treat acute illnesses. Pictured here are Dr. Bärbel Drumm and her assistant providing dental treatment in Buru Buru.



ical doctors, but also provides freight capacities for the transport of medical equipment and aid supplies free of charge. Lufthansa Cargo flies daily to Nairobi – an important gateway to East Africa for the freight airline. While committed physicians traveled aboard once a month in the beginning, Fokko Doyen is now able to fly them to Kenya twice a month on average thanks to the widespread support the project receives. During each stay, they spend three days on average treating impoverished patients without charge.

### **A special need for dentists and gynecologists**

The CHC’s goal is to cover as broad a spectrum of illnesses as possible and to ease the most serious medical problems in a population badly lacking in medical care. For this reason, physicians from a wide range of medical specialties are represented in the project. Pediatricians, ear-nose-and-throat specialists and urologists fly to Africa just as often as anesthesiologists and HIV specialists. “While gynecologists are in particularly high demand,





dentists really have their hands full in Nairobi as well,” says Fokko Doyen. However, the CHC does not take internists or general practitioners to Africa to avoid competition for local colleagues.

#### **SOS Children’s Village Buru Buru**

Even though Kenya is considered the country with the highest level of development in East Africa, its per capita income of about 460 US-dollars per year still places it among the poorest nations in the world. About 60 percent of Nairobi’s almost 4 million inhabitants live in conditions that are unfit for human beings. There is no clean water and no sewer system. Children are particularly hard hit. This is why the commitment of Cargo Human Care focuses on institutions dedicated to helping the youngest. One of these is the Medical Center at the SOS Children’s Village Buru Buru, which presently houses about 150 children. The health center is looked after by a local doctor and two trained nurses. Several days a week, they open for consultations and thus ensure

medical care for about 600 families that are supported by the HIV foundation run by the SOS Children’s Village. About 300 patients regularly receive essential anti-retroviral medication against the immunodeficiency disease AIDS; the Kenyan state pays the cost of therapy, at least for part of the patients.

During their turns of duty at the Medical Center, the medical specialists from Germany treat above all acute illnesses. For this purpose, the Medical Center’s facilities and infrastructure are placed at their disposal. Most important here are the local staff, who all speak English and slip into the role of interpreter whenever patients speak only Kiswaheli. Moreover, the visiting physicians can fall back at any time on a pharmacy, up-to-date patient data and medical equipment such as ultrasonic diagnostics and sterilizers. Public notices in the surrounding slums ensure that all those who can not afford medical treatments know about the possibility of treatment by the foreign doctors.

### Mothers' Mercy Home

The second project for which Cargo Human Care takes a stand is the Mothers' Mercy Home (MMH) north of Nairobi, which is run by the Mount Kenya South diocese. 84 children have found a new home there and receive the kind of care and shelter they lost when their parents died from AIDS. The staff of this church-supported institution do everything they can to protect these children from exclusion. Given the stigma still associated with the illness today, they are often shunned by their peers – especially if they were born HIV positive.

Unlike at the SOS Children's Village, which permits German doctors to work under very good hygienic conditions, what is really needed at Mothers' Mercy Home is a well-developed pioneer spirit. "There is no infrastructure. Conditions are absolutely primitive," explains Fokko Doyen, a father of three children himself. "Without the ability to improvise, doctors can pack up right away." The orphans' sleeping quarters are also much more simple than those at the SOS Children's Village. The makeshift constructions of corrugated iron and wood each house about 20 bunk beds.

### Amputation avoided

The precarious conditions on location are in sharp contrast to the medical challenges the German doctors are trying to meet. One fate that really struck Fokko Doyen is that of John Kaheni, now 14 years old, a former patient at Mothers' Mercy Home: "John had a valvular heart defect. With help from money donated in Germany, we were able to pay for a lifesaving heart operation three and a half years ago." Without this procedure, the boy, who today again plays soccer with his friends, would have died long ago. And young Peter Ndungu was fortunate in an unfortunate situation. Because local doctors were unable to cope with a benign tumor on the HIV-infected 12-year-old's lower leg, they wanted to simply amputate the leg. Cargo Human Care was able to save the boy from yet another devastating blow. "With a bit of help from a German doctor friend who has been practicing in Kenya for 14 years, we managed to establish contact with a clinic. There, Peter was examined by two orthopedists, who are searching for treatment options in cooperation with doctors in the USA," says Dr. Sven Sievers, medical head of CHC and former chief of staff at a women's clinic.

### "No pain anymore!"

Ordinarily, though, the work of the German physicians who put their healing abilities in the service of Cargo Human Care is characterized by more modest successes. Dentists in particular are aware that European standards can not be transferred easily to Africa. Often, their patients' teeth are in such a disastrous state that the only helpful option is systematic extraction. This is illustrated by the story of a young woman in her early thirties who said "Pull all my teeth!" when she showed up for a consultation with Bärbel Drumm and Helga Schaffner. At first, the dentists did not want to believe her. But after examining the patient's teeth carefully, they came to the sobering conclusion that none of the remain-

Eli and his friend, both children from Mothers' Mercy Home, making drawings of their "dream house" in the orphanage's recreation room.



ing 20 teeth could be saved, and so they extracted them. The next day, the young woman came back beaming with delight and announced: "No pain anymore!"

### Many helping hands

Preparing and coordinating the stints in Kenya optimally is a significant logistical and organizational challenge. "This project can only function if many helping hands participate," says Fokko Doyen. On the executive committee of Cargo Human Care alone, there are eight committed souls who invest between five and 15 hours per week in this project – sometimes significantly more. They recruit medical doctors in Germany, plan tours of duty, look after construction activities, and establish and maintain contacts with other organizations.

### Idealism as carry-on luggage

Thanks especially to well-targeted publicity in professional medical publications, the resonance among doctors is great: 15 physicians have already been to Kenya, a number of them repeatedly, and another 25 are on the waiting list. To ensure that risk to the lives and limbs of volunteers is avoided at all times, the CHC was forced to cancel the stints in January and February 2008 – even if the facilities the CHC looks after were not affected at any time by the violent riots that shook the country in the wake of the parlia-



mentary elections in December 2007. "We wanted to exclude any possible risk," underlines Sven Sievers.

Many of Sievers' German colleagues accept loss of income to be able to provide humanitarian aid in Africa. While the doctors in private practice try to schedule their African tours of duty so that they coincide with public holidays in Germany, this is not always possible. "Those who have become aware of us and want to take an active part demonstrate a healthy amount of idealism," continues this gynecologist from Neustadt. Nevertheless, it is not only doctors in private practice who contact Cargo Human Care. There are also many physicians working in clinics who are prepared to try out an entirely new experience and to venture a closer look beyond the horizon of the German health system. "We encounter a lot of support from employers, who show themselves to be very cooperative when it comes to approving leaves of absence for their doctors," explains Sven Sievers.

#### **Perfect organization of stints abroad**

Cargo Human Care ensures that the volunteer duty of German doctors at the medical centers of SOS Children's Village and Mothers' Mercy Home proceeds as smoothly as possible. To this end, the industrious helpers of CHC pull all the necessary organizational strings in the background: They book flights for the

doctors and see to it that tickets are awaiting them at the airport. They also look after hotel accommodation on location and order taxis for the trip from the airport to the orphanage. "Right after arrival, the physicians can start their consulting hours," Fokko Doyen reports. The relief organization has been able to help more than 2,000 people so far. The initiator of Cargo Human Care is confident that there will many thousands more in the years ahead. "Once you've seen the misery in African slums with your own eyes, you can't just go back to business as usual. You want to help," summarizes Fokko Doyen.

#### **Cargo Human Care Calendar 2008**

Aiming to further increase awareness of Cargo Human Care, the registered charity has produced a unique calendar. It combines photographs that catch the spirit of flying with expressive pictures of African orphans at Mothers' Mercy Home (MMH). 100 percent of the receipts from calendar sales benefit the boys and girls of the two children's villages and the medical work of Cargo Human Care. The aid organization realized this project in cooperation with a photographer and a graphic designer. While photographer Jens Görlich flew on a freighter to Nairobi to take hundreds of snapshots from the children's everyday lives, graphic designer Nana Cunz brought a great deal of sensitivity to bear in producing both surprising and emotional pages for the calendar. A new calendar issue for 2009 has already been planned.

→ [www.chc-kalender.com](http://www.chc-kalender.com)





#### The number of AIDS orphans in Kenya is rising

Of an estimated 31.5 million Kenyans, more than 1.7 million are infected with HIV (Human Immunodeficiency Virus). With a share of 9.4 percent, people between 15 and 49 years of age are particularly affected, according to the latest figures from World Hunger Relief. Above all, the number of AIDS orphans has been increasing rapidly for some years. UNICEF, the United Nations Children's Fund, estimates their number south of the Sahara to reach up to 12 million. By 2010, there might be up to 18 million AIDS orphans in Africa alone, worldwide even as many as 25 million. In Kenya, more than 1 million boys and girls have lost their parents to the immunodeficiency so far.

The fate of AIDS orphans is depressing. Often, children have to care for their parents until they die. The resulting emotional burden is enormous. Girls often leave school much earlier than boys because they have to look after not only their seriously ill parents but also their younger siblings. Only a few go back to school after their parents' death. In many cases, they have to work to ensure the survival of younger siblings and grandparents. Consequently, girls are all too often threatened by economic or sexual exploitation.

#### Long-term help: Reconstructing Mothers' Mercy Home

Lufthansa and its subsidiary companies look back on a long tradition of social commitment and assume their social and ecological responsibility – far beyond the legal minimum. For this reason, Cargo Human Care can count on receiving financial and logistical support from the freight airline. This help is urgently needed because CHC is currently planning the reconstruction of the AIDS orphanage on the site of Mothers' Mercy Home. In the future, children will live in a big, modern building made from stone instead of barracks made from corrugated iron. The new orphanage will also include an infirmary and a pharmacy. At the same time this new ward with an emphasis on general medicine is to benefit not only the MMH's residents, but also the sick in the surrounding poor areas. The new building will be equipped with modern sanitary facilities and two patient rooms for girls and boys – each with two beds and a private toilet. Being housed in four-bed rooms, each of the youngsters will have significantly more



Whenever the weather is bad, the assembly hall at Mothers' Mercy Home becomes the main recreation room for the children.

space in the future; in fact, many of them will receive a minimum of private space for the very first time. Each child is even to have his or her own closet. The planned common room for the children can be equipped with a computer work station if needed.

#### **Construction permit has been granted**

The construction permit for the new Mothers' Mercy Home has already been granted. Now, offers have to be called for and examined in detail. "We're confident that the new MMH Medical Center can start operations in early 2009, so that we'll be able to provide medical care to even more people in the area surrounding the Mothers' Mercy Home," says a delighted Fokko Doyen. To reach this goal, however, CHC needs more medical equipment and instruments. The reason: "When the new Medical Center starts operations, all equipment must exist in two sets," says the Lufthansa captain.

The ultrasound scanner which gynecologist Sievers uses to examine his patients at the SOS Children's Village is to remain there as well as the microscope. He spent 8,000 euros to buy both instruments secondhand. CHC bore the cost. To ensure basic gynecological care at the new Medical Center, this retired but still active former chief of staff is searching urgently for a second set of medical equipment. Additionally, there are plans to hire a nurse or doctor's assistant who can prepare and follow up treatments,

"Once you've seen the misery in African slums with your own eyes, you can't just go back to business as usual. You want to help."

Fokko Doyen  
Head of the MD-11F fleet at Lufthansa Cargo



thus ensuring that a maximum number of patients can be treated. "Perhaps our German colleagues will even be able to operate themselves sometime in the future," says Dr. Sievers, glancing ahead. Currently, they have to send their patients to nearby clinics, such as the Kenyatta Hospital.

Cargo Human Care plans to extend its commitment to other poor communities in Kenya over the mid-term. For the number of AIDS orphans continues to rise (see inset on page → 84) – and with it the need for institutions such as the SOS Children's Village or Mothers' Mercy Home. In the future, Lufthansa Cargo will support the activities of CHC with the means it has available in order to make a perceptible contribution to improving the life opportunities of Kenyan orphans. The reason: Only children who are healthy and adequately nourished can grow, learn and meet the challenges of life.

→ [www.cargo-human-care.com](http://www.cargo-human-care.com)



## Corporate citizenship

## Worldwide commitment

As an aviation company with international activities, Lufthansa is fully aware of its social responsibility and has been committed to projects worldwide for many years. To focus the Group's commitment in a meaningful way and to ensure the necessary economic control, Lufthansa concentrates on selected projects in the areas of culture, social work, education, sport and environment. The goal here is always to achieve a maximum effect with the means employed.

### Culture

#### “Music is not all ...

... but without music all is naught.” Oscar Wilde could have used these words to describe Lufthansa's cultural commitment in London very aptly as well. For 24 years now, Lufthansa has organized the Festival of Baroque Music in the heart of the British metropolis. Great Britain, which continues to be Europe's most important aviation market, is of outstanding strategic importance for Lufthansa. Alongside the airline's comprehensive, dense flight connections to and from Germany, its investment in British Midland and close cooperation with Rolls-Royce plc are expressions of important system partnerships, which position Lufthansa as a premium brand in the British market as well.



The annual highlight of the Lufthansa Festival of Baroque Music in London is the concert at the venerable Westminster Abbey.

From May 5 to 24, 2007, the Lufthansa Festival of Baroque Music took place once again in cooperation with Rolls-Royce plc, whose environmentally friendly engines are also operated on Lufthansa aircraft. The festival offered its visitors a total of ten concerts, performed at either St. John's Smith Square or Westminster Abbey. Under the motto “Echoes of Spain,” the very finest musicians in their fields explored the mutual influences linking Spanish music with Latin American music on the one hand and with “ancient” Central European music on the other. Among those performing were: Jordi Savall, Emma Kirkby, Die Akademie für Alte Musik Berlin, La Venexiana, La Fenice, La Risonanza, and the choirs of Westminster Abbey and King's College, Cambridge. The festival audiences and the press were delighted in equal measure. BBC Radio 3 broadcast several concerts.

The joy concerning the festival's successful course was overshadowed, however, by the sudden death of longtime festival manager Francesca McManus. A large part of the festival's continued success is due to her expertise and her commitment.

→ [www.lufthansafestival.org.uk](http://www.lufthansafestival.org.uk)

#### New Year's Concert in Berlin

Lufthansa has been issuing invitations to the New Year's Concert at the Konzerthaus am Gendarmenmarkt in Berlin since 1997. The guests include Lufthansa's frequent fliers and leading representatives from politics, business, culture and the media. On January 15, 2008, the RIAS Jugendorchester, founded in 1948 and thus one of the oldest youth orchestras in the world, delighted the audience with a musically demanding program. It performed works by Richard Wagner, Ludwig van Beethoven and Johannes Brahms with masterful poise.



For more than ten years at Berlin's Konzerthaus am Gendarmenmarkt: the Lufthansa New Year's Concert.

The New Year's Concert gives Lufthansa an opportunity to “fly the flag” in Germany's capital and support the youth orchestra at the same time. This commitment is highly appreciated: President of the German Bundestag Dr. Lammert, Federal Minister of Transport Tiefensee and Berlin's Governing Mayor Wowereit ex-



#### On-board collection program “Small Change – it’s a Big Help”

Since May 2001, Lufthansa customers have had the opportunity to support social causes by participating in the on-board collection program “Small Change – it’s a Big Help.” In 2007, the amount donated declined once again.

##### Development of donations:

- 2001: 207,175 €
- 2002: 232,692 €
- 2003: 216,539 €
- 2004: 238,023 €
- 2005: 294,870 €
- 2006: 279,575 €
- 2007: 260,939 €

Start of Condor’s participation: October 2003

#### “Miles to Help”

The initiative “Miles to Help” aims to win as many participants in the frequent flyer program Miles & More as possible for the support of people in need and the long-term protection of the environment. Here, donors decide themselves if they want to make their miles available to the HelpAlliance, the international lake network Living Lakes or the relief organization SOS Children’s Village. Just a year after the launch of “Miles to Help,” the result is extremely encouraging: For example, in December 2007 alone, 28.6 million miles were received for charitable purposes. For the entire year 2007, the Miles & More participants contributed more than 83 million award miles.

The miles thus donated enabled the HelpAlliance to finance the salaries of ten nurses in Africa for an entire year. In addition, the tuition fees for more than 1,000 children in India could be covered. Simultaneously, Living Lakes succeeded in saving 140 hectares of rain forest in Brazil from destruction. Moreover, the donation of miles made it possible for more than 120 children in Latin America to continue living with their natural families due to the family support programs offered by the SOS Social Centers. All measures initiated by the HelpAlliance are personally overseen on a volunteer basis by Lufthansa employees.

pressed gratitude and enthusiasm concerning the fact that “Berlin’s ‘parlor’” was filled nearly to capacity. For those who were unable to attend the concert, Deutschlandradio Kultur broadcast a recording of the concert on January 31, 2008.

## Social projects

### HelpAlliance – Achieving more by working together

The registered association “HelpAlliance – Lufthansa employees lend a helping hand” was founded in 1999 by employees from all parts of the Lufthansa Group. Ever since, the association’s members have been committed to numerous aid projects around the world, including support for business startups, projects for street kids, educational institutions, orphanages and bush hospitals. Lufthansa has supported the HelpAlliance with financial and logistical means since its inception. In addition, Sabine Weber, wife of Deutsche Lufthansa AG’s Supervisory Board Chairman Jürgen Weber, agreed to become the help organization’s patron in 2000.

### Encouraging increase in donations

The year 2007 was characterized by an enormous increase in donations. Compared with 2006, donations increased by about 20 percent, from 571,719 euros to 710,365 euros. This sum is made up of regular contributions from Supporting Members, project-dedicated donations and nondedicated donations, whose use is determined by the HelpAlliance depending on current needs. The amount also includes donations from the program “Miles to Help,” which was launched at the end of 2006. It allows Lufthansa customers participating in the frequent flyer program Miles & More to donate their award miles for charitable purposes – the choices being the HelpAlliance, the international lake network Living Lakes and the SOS Children’s Villages.

### Support for significantly more projects

Thanks to the encouraging increase in donations, the registered charity was able to support significantly more projects in 2007 than in the previous year. While there were already 20 initiatives in 2006, this number rose to 31 in 2007. These include 12 long-term HelpAlliance projects, 16 short-term Supported Projects, which receive results-related financial support from the organization, and three emergency-aid projects (excluding tsunami). The Supported Projects are initiated by committed Lufthansa employees, who not only assume responsibility for the success of “their” projects but also oversee it on a volunteer basis – in person on location, during their time off and during their vacations. The number of short-term projects can vary significantly from one year to the next.

### Taking life into one’s own hands

Among the short-term Supported Projects approved in 2007 was the expansion of a vocational training center in the rain-forest city of Santarém in the Amazon, which is operated by the registered association “SEARA – A Future for Children” and to which a Lufthansa employee is committed as well. The HelpAlliance provided funding for the purchase of the plot. The goal of the vocational training center is to help young mothers from poor backgrounds and with little education to obtain professional qualifications, so that they can earn a living for themselves and their families through their own efforts. The program includes courses in sewing, textile painting, manicures, pedicures, hammock making, costume jewelry, alternative medicines and whole-food cooking, using regional ingredients that the participants grow in the center’s own vegetable garden. Training courses lead to the respective certificates acknowledged by the local Chamber of Commerce.



Women participating in a cooking course run by the SEARA project.

The vocational training center is right next to a day-care center. There, 29 full-time employees of SEARA Brazil look after 140 significantly under- or malnourished children between one and five years old. Most are children of the women who participate in the training center's courses. To promote the development of the youngsters' health, they receive four whole-food meals a day based on local fruit and vegetable varieties.

#### **Education for all**

Another Support Project initiated by committed Lufthansa employees from Hamburg is "Culture Radio" in Sierra Leone. This West African state is among the world's poorest, and 85 percent of the population is illiterate. To change this state of affairs, Culture Radio has been broadcasting an education and information program in order to reach as many people as possible. This type of distance learning is flanked by so-called "community teachers," who accompany and support students in situ. In addition to funding for Culture Radio, the HelpAlliance also provided money for Support Projects aimed at helping schools, kindergartens and street-kid initiatives.

#### **Positive development for emergency-aid programs**

Thanks to the positive development of donations in 2007, the HelpAlliance had the necessary means at its disposal to approve the majority of emergency-aid projects proposed by Lufthansa colleagues. This was made possible by the commitment of numerous Lufthansa employees looking after fundraising. While some turned the decommissioned furniture from a Lufthansa lounge into hard cash, for example, others took advantage of their church wedding to have the collection plate filled with an offering for the HelpAlliance.

You can find more information about the HelpAlliance and an overview of current projects on the Internet at → [www.help-alliance.com](http://www.help-alliance.com). The HelpAlliance's Annual Report is also available on this site.

#### **Junior Round Table: Young professionals take on social responsibility**

Lufthansa offers its junior staff not only an attractive working environment and good career opportunities, but also the chance to work for the common good during their leisure time – as part of the Junior Round Table (JRT), for example. This network of junior employees in Frankfurt, Hamburg, Cologne and Munich was founded in 2005 and is geared specifically to university graduates who have not yet been with Lufthansa for more than two years. Moreover, the Junior Round Table is open to young pilots, who in addition to their flying also take advantage of an activity on the ground. The goal is to make integration into the Lufthansa Group easier for young employees and to promote both the exchange of experience and networking among the them. In 2007 the JRT's five working groups – "Social Commitment," "Guided Visits," "Lectures," "Communication" and "Culture" – counted more than 600 members.



Young people of "Lebenshilfe Bad Homburg" on a visit to Lufthansa Technik.

Accordingly, the team "Social Commitment" is active in helping socially disadvantaged children and youths. In 2007, junior Lufthansa employees organized numerous charitable events both in the Rhine-Main area and in Hamburg. These proceeds were used, for instance, to benefit children whose psycho-social development is impaired. Furthermore, the group supported schools, orphanages and day-care centers. A number of disabled youths of "Lebenshilfe Bad Homburg" were thrilled when they were able to take a look inside the cockpit of an Airbus A340-300.

## Education

### “Experience Knowledge”: Imparting knowledge about air transport

As one of Germany’s largest employers and training companies, Lufthansa takes an especially keen interest in education. This is also the reason why the company has launched the education initiative “Experience Knowledge” for schools. This innovative learning program is designed to give pupils insights into the fascinating world of aviation. Its cooperation partners include the Ministry of Education and Cultural Affairs of the state of Hesse.

Following the great success of the first knowledge and experience days in November 2006, Lufthansa has specifically taken “Experience Knowledge” a step further: A learning DVD with interactive lesson materials was created. The multimedia teaching and learning contents on the world of air transport have been designed for the pupils of classes 8 to 10 and make real-life areas of knowledge accessible in modern ways.

The program’s goal is to lead young people attending all types of schools to independent, creative ways of acquiring specialized knowledge. As “Experience Knowledge” allows insights into more unusual work environments, the DVD also makes an important contribution to professional orientation.

Thanks to the DVD’s modular structure, all subject texts, teaching materials, film and audio features, and animated cartoons can be combined at will. For this reason, the materials are especially suited for project work. Suggestions for homework support teachers in introducing, expanding and reviewing the knowledge taught. The selection of topics is guided by the curriculum of the state of Hesse for biology, physics, chemistry, geography, business basics, political science and economics.

In May 2008, Lufthansa made the learning DVD available free of charge to all secondary schools in Hesse. In addition, there is a competition where school classes may win a visit to Lufthansa. Key content units from the learning DVD are also available on the website → [www.lufthansa.com/erlebnis-wissen](http://www.lufthansa.com/erlebnis-wissen), where this multimedia offering can be ordered free of charge.

### “Fascination Aviation Technology”

To generate enthusiasm for aviation and technical professions among young people – that was the goal of the event “Fascination Aviation Technology” in Frankfurt. 80 pupils who were just about to graduate were given the opportunity to visit the teaching workshops of Lufthansa Technik and to observe various vocations in the area of aviation firsthand. Useful information concerning the application process, selection tests and hiring prerequisites rounded off the variegated program.

In 2007, 235 young people in 16 different vocations started their professional careers at Lufthansa Technik. At the Frankfurt location, the company fills about 80 new vocational training positions per year.

### Researching instead of cramming:

#### Lecture series “Technology for Children. Fascination Flying”

Those who want to become high-flyers start practicing at an early age: To guide even the youngest children toward subjects in the natural sciences and technology in a playful manner, Lufthansa Technik supported the third edition of the lecture series “Technology for Children. Fascination Flying.” Every week, from February 13



Lufthansa’s initiative “Experience Knowledge”: A wide range of aviation-related topics offer young people faced with choosing a professional career insights into interesting work environments.



Every year, young people come to the Lufthansa hangar in Frankfurt to gather information about the interesting professions at Lufthansa Technik.



to March 26, 2008, almost 200 pint-sized academics between the ages of eight and twelve stormed into the lecture hall at the Hamburg University of Applied Sciences – which had been sold out long in advance – to slake their thirst for knowledge on all matters concerning aviation. In a total of six lectures, they learned what keeps kites and zeppelins in the sky, how aircraft are built and what the aircraft of the future might look like. To deepen their newly acquired knowledge, supporting programs for their specific age awaited the children after each lecture, including experiments in physics and first attempts at flying in a simulator. “Technology for Children. Fascination Flying” is offered by the Hamburg University of Applied Sciences in cooperation with the initiative Aviation Location Hamburg, in which Lufthansa Technik participates very actively.

This year, the practice-oriented day “Hands-on Technology” was again included in the lecture program. It gave children the opportunity to spend a whole day experimenting to their hearts’ content at the laboratories of the Hamburg University of Applied Sciences, at the DLR\_School\_Lab Hamburg and the Aviation Workshop. Airbus and Lufthansa Technik also granted hands-on insights into the world of aviation.

Due to the high level of interest, “Technology for Children. Fascination Flying” is to take place year-round in the future. One reason in favor of this change is the encouragingly high share of girls, which reached 37 percent in 2008. Additionally, there are plans to make this educational offer available to pupils between the ages of 12 and 16 as well.

→ [www.technik-fuer-kinder.de](http://www.technik-fuer-kinder.de)

#### **business@school – Business goes to school**

Since 2002, Lufthansa has supported the initiative business@school, launched by management consultants The Boston Consulting Group in 1998. The goal of this project is to give pupils in grades 10 to 13 practice-oriented insights into the everyday work of medium-sized and large companies and thus to generate enthusiasm for business. Beyond business-related knowledge, participants also acquire key qualifications such as entrepreneurial thinking and teamwork. business@school projects are divided into three parts. During the first two stages, pupils get acquainted with first a large corporation and then a small company. In the final stage, they develop their own business ideas. During this phase, the young people also receive support from Lufthansa employees. There is enormous interest in business@school: While only two pilot schools took part when the program was founded in 1998, more than 70 schools in Germany, Austria, Switzerland, Singapore and Italy participated in 2007/2008. In 2002, the initiative was awarded the prize “Freedom and Responsibility” by the umbrella organizations of German industry. Last year, 29 Lufthansa employees acted as volunteer school patrons and for ten months guided these adolescents in independent thinking and acting.

→ [www.business-at-school.de](http://www.business-at-school.de)

## Sports

#### **Lufthansa’s commitment to sports**

Fairness, team spirit, performance and success: Lufthansa and sports share much the same values. It is not for naught that the company has been a partner of sports for many years. For example, in 2007 Lufthansa became the first “National Sponsor” of the German Sports Aid Foundation with its 4,000 athletes. In addition to this commitment, Lufthansa has agreed to sponsor five up-and-coming athletes in the disciplines rowing, swimming, snowboarding, sports for the disabled (track and field) and



badminton, accompanying them on their path to the top. The athletes participating in the sponsorship program receive a stipend from Lufthansa, which is paid on the basis of individual sports-related costs.

Furthermore, Lufthansa regularly supports the events organized by the German Sports Aid Foundation, such as the "Golden Sports Pyramid," the "Sports Ball," the "Festival of Encounter" and the "Elite Forum," which takes place in Liebenberg.

### **Partner of the German Olympic Sports Confederation**

Sports sponsorship is an investment in the future of society. In addition to its social commitment to the German Sports Aid Foundation, Lufthansa has been a partner of the National Olympic Committee for many years and a sponsor of the German Olympic Sports Confederation since May 2006. Traditionally, this includes carrying the German teams to the Olympic Games and the Paralympic Games.

In its role as the "Airline of Sports," Lufthansa maintains long-term cooperations with the German Soccer Association (DFB) and FC Bayern München. Lufthansa was also one of the main sponsors of the World Handball Championship in Germany last year; starting this year, the Handball Cup Final is now called the "Lufthansa Final Four."

Focusing on the World Track And Field Championship 2009 in Berlin, Lufthansa has also been a partner of the German Track And Field Association since last year. One way of documenting this partnership is displaying the Lufthansa name exclusively on the athletes' clothing.

But Lufthansa is not only a partner for high-performance athletes. There are also thousands of fans who use the aircraft to follow "their" teams to competitions. Sometimes they fly around the world for such events. For this reason, Lufthansa offers them comprehensive newsworthy coverage of sports events on a special Internet page: → [www.lufthansa.com/fanflug](http://www.lufthansa.com/fanflug)

## Environmental Sponsorship Program

So far, scientists have discovered and described about 1.8 million species. Every year, thousands of new species are added. This leads to the conclusion that we know only a fraction of the organisms which populate the Earth. In the opinion of many researchers, the tropical rain forests in particular hold an enormous reservoir of medicinal plants that could be used in treating illnesses such as cancer, heart conditions or HIV.

Despite this fact, the loss of biological diversity advances unabated. For mammals and birds, the natural rate of extinction has today been exceeded by a factor of between 100 and 1,000. The reasons for this abound: The overexploitation of nature destroys habitats. Species introduced by humans displace indigenous ones. And climate change also affects biological communities.

As an aviation group with international activities, Lufthansa sees itself with a duty to make a perceptible contribution to the conservation of nature and to the environmentally compatible evolution of future forms of mobility. For this reason, striking a balance between economic interests and ecological responsibility has been firmly anchored in the Group's Principles of Strategy and is a part of everyday corporate culture. Thus, Lufthansa has supported the work of German and international envi-



Lufthansa accompanies up-and-coming athletes on their way to the top.

**2nd edition of Lufthansa's environmental brochure**

Under the title "Our Commitment to Balance," the environmental brochure published by Lufthansa's Environmental Sponsorship Program, now in its 2nd edition, informs readers in detail about the Group's activities in the areas of environmental and species protection. The focal theme of this publication, first issued in 2006, is the protection of cranes, a cause to which the company has been committed for several decades. The brochure can be ordered free of charge.

→ <http://responsibility.lufthansa.com>



Technicians at Lufthansa Technik affix the logo of Naturallianz onto the Lufthansa Boeing 747 christened "Bonn."



"Fascination Nature" – Lufthansa's film on species protection promotes respectful ways of encountering nature.

ronmental and nature protection organizations for many years. All activities aim at protecting biological diversity and conserving unique natural landscapes. The company has turned its particular attention to species protection – above all the protection of threatened crane species and their habitats.

**Lufthansa supports Naturallianz**

All species depend on others. If we destroy one, we put many in jeopardy. To set a visible example of the conservation of biological diversity, Lufthansa supports the initiative Naturallianz, launched by Germany's Federal Minister of the Environment, Sigmar Gabriel, in the run-up to the 9th UN Conference on Biological Diversity, which took place in Bonn on May 19-30, 2008. The company thus continues its long-term commitment to environmental protection and sustainable development in a consistent manner. Lufthansa supports Naturallianz above all in the area of communications: with advertisements and feature articles in its internal and external print publications and with its in-flight film "Fascination Nature." In addition, the airline has been showing Naturallianz's striking campaign spot in its in-flight entertainment program since December 2007. In April and May 2008, bilingual information flyers were available on board all Lufthansa aircraft, drawing attention to the necessity of protecting and using biological diversity in sustainable ways. They also drew attention to the 9th UN Conference on Biological Diversity in Bonn. Furthermore, the company has affixed the Naturallianz logo on the Lufthansa-Boeing 747-400 "Bonn" – and is thus also carrying the motto of the UN conference "One Nature – One World – Our Future" around the world in a highly visible way.

The members of Naturallianz include representatives from politics, business, science and culture as well as non-governmental organizations. They are united by the will to support the "Campaign for Biological Diversity" initiated by Germany's Federal Ministry for the Environment and Nature Conservation, and to work actively for the protection and sustainable use of the Earth's flora and fauna, which has evolved over the course of billions of years.

At the 9th UN Conference on Biological Diversity, about 5,000 representatives from around the world discussed measures against the continuing destruction of nature. The conference is the political body of the Convention on Biological Diversity (CBD), which was approved in 1992 at the Earth Summit in Rio de Janeiro. Its goal is to limit the loss of biological diversity significantly by 2010.

→ [www.naturallianz.de](http://www.naturallianz.de)

**"Fascination Nature": A filmic plea for the conservation of flora and fauna**

To promote the long-term conservation of biodiversity, Lufthansa produced a new species protection film in 2007, in cooperation with the environmental foundation EuroNatur, Germany's Federal Ministry for the Environment and Nature Conservation, and the Bonn Convention (CMS). The six-minute film entitled "Fascination Nature" has been a fixed part of the in-flight video program available on many Lufthansa longhaul flights.

Available in four languages and now also on DVD, the film uses impressive images from nature's treasure vault to inform travelers about their own options to protect the Earth's wealth over the long-term – above all while traveling in exotic countries. This is particularly important as endangered animal and plant species, or even those close to extinction, often find their way onto restaurant menus and into souvenir shops. The DVD and the accompanying informational booklet are also intended as a contribution to environmental education. Interested persons can order the free DVD at → <http://responsibility.lufthansa.com>.



### **CMS: Protection for nomadic animals**

Migrating animal species do not conform to national boundaries. While searching for sources of food and areas of secure retreat for raising their young, they cover thousands of kilometers every year. Migrating is a question of survival not only for cranes and songbirds, but also for marine mammals, fish, antelopes and many other animals. Biologists estimate that there are 8,000 to 10,000 nomadic species worldwide. To protect their existence over the long term, they have been under the special protection of the Bonn Convention on the Conservation of Migratory Species of Wild Animals (CMS) since 1979.

Since 2005, Lufthansa has supported the convention with an international dissertation prize, which it endows in cooperation with the magazine National Geographic Deutschland. Offering prize money of 10,000 euros, the "UNEP/CMS Thesis Award" will be given for the second time on the occasion of the 9th CMS Conference to take place in December 2008 in Rome. The award is given every three years to young researchers whose doctoral theses make a particular contribution to protecting threatened migratory species. The invitation to join the competition for this year's prize ended in May 2008. Moreover, Lufthansa works actively in the supporting organization "Friends of CMS," which accompanies the work of the Bonn Convention with its own projects.

→ [www.cms.int](http://www.cms.int)



### **NatureLife-International**

NatureLife-International – a foundation working in the areas of the environment, education and sustainability – is especially active beyond the borders of Europe. At the center of the foundation's efforts are projects that both protect biological diversity and drive forward climate protection and resource conservation. A further goal is to transmit traditional knowledge regarding nature, agriculture and nutrition. Beyond that, NatureLife-International promotes the sustainable production of food as a contribution to preventative health care and to the protection of fascinating, living landscapes shaped by human beings.

### **Rainforestation Farming: "Green lungs" for climate and biodiversity**

Environmental care not against but with people: This is the basic idea behind the pilot project "Rainforestation Farming" on the Philippine island of Leyte, an initiative Lufthansa has supported for a number of years. The project is coordinated by the foundation NatureLife-International in cooperation with Hohenheim University and Visayas State University. Rainforestation Farming combines elements of environmentally friendly farming with those of natural forestry, aiming at ending slash-and-burn clearances and uncontrolled lumbering and thus at protecting the last remaining rain forests from destruction. In this way, fighting poverty and preserving biodiversity join hands.

### **Mixed cultivations are superior**

Reforesting logged areas of rain forest with secondary forests rich in species allows not only a long-term fixing of eroded soil, but it also binds CO<sub>2</sub> and thus contributes to climate protection. Thanks to sustainable agricultural techniques, it also secures steady income and economic success for small-scale farmers. The reason for this is that mixed cultivation using indigenous tree and bush species adapted to the location results after just a few years in eight to ten times the yields produced by environmentally harmful monocultures. In the wake of rainforestation farming, the rural exodus is stopped, threatened animal species such as the tarsier find new habitats and new "green lungs" grow on land once given up as lost. Stipends for master's and doctorate candidates ensure the transfer of knowledge between German and Filipino researchers. Additionally, specific training for small-scale farmers ensures that rainforestation farming gains ground on other islands in the Philippines as well.

Thanks to the commitment of NatureLife-International, this method has also been taking root in western China since last year. The "Golden Triangle" straddling China, Laos, Thailand and Myanmar is also the location of the northernmost part of tropical forests in the People's Republic. Longtime overexploitation – above all due to the since halted cultivation of opium – has significantly decimated the region's biological diversity. Therefore, the TianZi Biodiversity Research & Development Center and the Bulang Heritage Foundation are planning together with NatureLife-International

## euronatur



A large-scale cross-border nature reserve in the southern Balkans opens up new habitats and retreats for the lynx and other threatened animal species.

to employ the close-to-nature methods of rainforestation farming to recultivate an area of 6 square kilometers over the years ahead. Beyond that, there is the option of reforesting another area of about 1,000 square kilometers using the same environmentally friendly method. The sustainable exploitation of future secondary forests not only creates jobs, but also prepares the way for gentle forms of tourism.

→ [www.naturelife-international.org](http://www.naturelife-international.org)

### **Balkan Green Belt: Ecological corridors for threatened species**

For more than 40 years, the “Iron Curtain” divided Europe into east and west. During this time, extraordinarily variegated biotopes developed along the former “death strip” – including in Albania, Macedonia and Bulgaria, where numerous endangered animal species, such as bears, lynx and wolves, found areas of refuge. To help conserve these unique habitats in the southern part of the “Europe’s green belt,” Lufthansa supports environmental foundation EuroNatur’s cross-border project “Balkan Green Belt.” It is considered a symbol for multinational development and cooperation in nature conservation and is supported by institutions including Germany’s Federal Ministry for the Environment and Nature Conservation. At the end of 2006, the creation of a large-scale cross-border nature reserve in the mountains along the border between Albania and Macedonia was completed successfully. The goal here is to save the indigenous Balkan lynx – whose population numbers only about 100 animals – from extinction. As the lynx population is constantly declining, a follow-up project will run until September 2009 with the aim of setting up two more reserves along the borders of Albania and Montenegro as well as those of Albania, Macedonia and Kosovo. In addition, a corridor connecting three Macedonian national parks is to be created.

→ [www.euronatur.org](http://www.euronatur.org)

→ [www.greenbalkans.org](http://www.greenbalkans.org)

→ [www.bfn.de](http://www.bfn.de)



### **Environmental protection on holiday: Nature Summer Camps**

Doing one thing without neglecting the other: The Nature Summer Camps can be summed up in this way. For many years, this initiative of the international environmental foundation Global Nature Fund (GNF) has allowed Lufthansa employees and their children to rest and relax during two or three weeks of activity holiday and to make a contribution to conserving threatened natural landscapes at the same time. In 2007, the instructive vacation project again attracted airline employees and their relatives to take an active role in nature and environmental protection in Estonia and South Africa. Traditionally, the camps are located in the regions of the international lake network Living Lakes, which was founded by the GNF in 1998. In 2008, the Nature Summer Camps once again invite participants to broaden their environmental awareness and to harness their enthusiasm for hands-on environmental and nature conservation work: in South Africa as “Nature Adventure Camp” or in India as “Nature and Social Camp.”



Participants of the Nature Summer Camp 2007 in South Africa.

Living Lakes has set itself the goal of conserving freshwater reserves on all five continents by protecting, reconstituting and rehabilitating lakes, wetlands and other bodies of water in a comprehensive manner. Freshwater lakes not only secure the supply of drinking water for all the Earth's peoples, but they also serve as irreplaceable refuges for threatened animal and plant species. The Living Lakes network currently comprises 45 lakes and numerous partner lakes. In the framework of Living Lakes, the GNF organizes regular lake-protection conferences, which serve the partner organizations as a platform for the international exchange of expertise. Lufthansa has supported Living Lakes since the initiative's foundation and also supports individual nature conservation projects of the lake partners on location.

→ [www.globalnature.org](http://www.globalnature.org)

### Frankfurt Zoological Society: Lufthansa promotes dialogue in nature conservation

Nature conservation is a complex task that demands a high degree of international networking and cooperation – not only between “first” and “third” worlds, but even more importantly among developing and emerging nations. Therefore, the Frankfurt Zoological Society works for a specific transfer of knowledge between public authorities and experts in national parks located in less developed countries. Lufthansa has supported this dialogue since 2006 and facilitates the necessary visits of experts by providing its transport services. In 2007, for example, African nature conservation experts and their colleagues in Kazakhstan were able to exchange their respective experiences with counting animals from the air. The year before, the Kazakh experts had visited Africa. In September 2008, the Frankfurt Zoological Society is planning a specialist conference in Frankfurt with a focus on practical issues of nature protection. Lufthansa's support ensures that experts from Africa or South America will be able to participate in the conference and to learn from the experience of others.

→ [www.zgf.de](http://www.zgf.de)



**Kranichschutz  
Deutschland**



For Lufthansa, whose corporate logo features the crane, its commitment to nature conservation and environmental protection is a special obligation.

### Worldwide protection of the crane

The worldwide decimation of species does not spare the cranes either. At least 11 of the world's 15 crane species are currently threatened in their existence. To save these “birds of luck” from extinction, the protection of their breeding, resting and gathering areas is of the greatest importance. Lufthansa's Environmental Sponsorship Program has supported crane protection for more than 30 years and supports numerous organizations and projects related to the bird in its corporate logo in Germany and abroad. This includes the Crane Protection Germany Working Group, which Lufthansa founded in 1991 together with Naturschutzbund Deutschland (NABU) and the environmental foundation WWF Deutschland. At the center of support is the Crane Information Center in Groß Mohrdorf, in the Rügen-Bock region of Mecklenburg-Western Pomerania, which attracts more than 15,000 visitors per year.

### New project: A “European Crane Protection Center”

As the capacities of the current facility have been exceeded, the Working Group is planning – with support from Lufthansa – to build a “European Crane Protection Center” nearby. The new center will allow a significantly higher number of visitors to observe these large, majestic birds. In addition, the new concept provides for year-round observation of white storks and erns (sea eagles) – without driving into the open country, but rather directly from the center. A feasibility study completed in January 2007 reached a positive conclusion concerning this project. As soon as the search for an optimum location has been wrapped up and the issues of financing have been settled, the path will be clear for laying the foundation stone of the new “European Crane Protection Center.”



### First crane monitoring in Ethiopia

Lufthansa also supported the Crane Protection Germany Working Group in its first crane monitoring efforts in Ethiopia. The results of this two-week, close-knit search expedition in January 2007 were encouraging: Instead of the expected 20,000 to 30,000 individuals, the experts counted a total of about 55,000 Eurasian, Demoiselle, wattled and crowned cranes. In addition, they discovered many new sleeping areas used by Eurasian cranes, which are also indigenous to Germany, in a total of ten wetlands – an important prerequisite for declaring these areas nature reserves. Further monitorings are planned for the years ahead. And to support the efforts to declare the ornithologically significant Tana Lake a nature reserve in the medium term, Lufthansa enables the employment of an ornithologist on location. About 95 percent of the crowned cranes living in Ethiopia are found around this lake.  
→ [www.kraniche.de](http://www.kraniche.de)

In addition, Deutsche Lufthansa AG supports the crane protection projects of the following nature and species protection organizations:

## EURONATUR

### EuroNatur Foundation

Project countries: Spain and Israel  
→ [www.euronatur.org](http://www.euronatur.org)



### Society for the Protection of Nature in Israel (SPNI)

Project country: Israel



### NatureLife-International

Project country: South Africa  
→ [www.naturelife-international.org](http://www.naturelife-international.org)



### International Crane Foundation

Project countries: USA, worldwide  
→ [www.savingcranes.org](http://www.savingcranes.org)



### South African Crane Working Group

Project country: South Africa  
→ [www.ewt.org.za](http://www.ewt.org.za)

### The best in creature comfort – the new “Frankfurt Animal Lounge”

Lufthansa Cargo receives more than 20,000 consignments involving “living” freight each year. The company strictly monitors that it transports only those animals that correspond to the rules of the International Air Transport Association’s (IATA) “Live Animal Regulations” (LAR) and the Washington Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES). This means, for example, that animals whose owners do not provide official proof of origin are excluded from carriage. Moreover, Lufthansa Cargo carries neither animals living and caught in the wild nor species threatened by extinction, whose trade is forbidden under Annex 1 of CITES. The only exception the cargo airline makes is for transport from one zoo to another in the context of species conservation programs.

### The first lounge for animals

At the beginning of 2008, Lufthansa Cargo inaugurated the world's most modern animal handling center at Frankfurt Airport. Covering a surface of 3,750 square meters, the "Frankfurt Animal Lounge" unites all departments required for species-appropriate animal transport under a single roof. Equipped with video surveillance, the animal station features 42 stables for large animals, 39 cages for small animals, special aviaries for birds and 12 spaces with individual temperature control. Thanks to its physical proximity to animal coordination, handling and the Veterinary Control Office of the State of Hesse, time-consuming transfers between the different departments, which used to be spread out over the airport site, are now a thing of the past.

### High-pressure cleaning equipment reduces water consumption

Sustainability plays an important role in safety – Lufthansa Cargo operates the animal handling center on the basis of current EU guidelines concerning hygiene and veterinary medicine – and environmental protection alike. For example, the wholly-owned Lufthansa Group company holds back wastewater from the Animal Lounge for 48 hours. It is released into the sewer system only after its harmlessness has been fully established. This prevents any water contaminated with bacteria or viruses from finding its way into the environment. Moreover, Lufthansa Cargo cleans the stables as well as the handling and examination areas with the most advanced high-pressure cleaning equipment, which significantly reduces water consumption. Waste air is also filtered before it leaves the building. Furthermore, a sophisticated lighting system ensures that lights are turned on only in those areas of the hall where they are really needed. The option of dimming the light in individual areas conserves electricity and serves the animals' well-being. The latest climatization technology also helps reduce the consumption of energy and resources.

### Safety and comfort

To exclude accidental contacts between animals of different origins, the areas for import, export and transit are structurally separated. Each of the two examination rooms can be turned into an isolation ward, so that regular operations can continue in the other. The equipment of the "Frankfurt Animal Lounge" is consistently adapted to the species-specific needs of the approximately 14,000 domestic animals, 1,400 horses and countless chicks and ornamental fish that travel each year. For example, Lufthansa Cargo laid an asphalt floor instead of the customary concrete to increase traction and comfort for large animals. Moreover, the entire loading area is protected from wind and rain.



Relaxing after a long flight: A Lufthansa Cargo employee leads a polo pony into the "Frankfurt Animal Lounge."

**SWISS**

# The integration of SWISS – a success story

Completing the integration of Swiss International Air Lines into the Lufthansa Group in 2007 was a key milestone: Switzerland's national airline has been a fully consolidated member within the Lufthansa affiliation since July 1, 2007. SWISS climbed to cruising altitude and can look back on the most successful year in its history. This evolution was boosted considerably by the company's successful integration into the Lufthansa Group.



## SWISS – on course in an environmentally-aware manner



The commitment to deal with the environment in a responsible way is an integral part of corporate culture at SWISS and determines the way we do business. In these pages, we will illustrate with a number of examples how we meet our responsibility toward the environment and society. In doing this, we must grapple with the fact that the demands made by different interest groups can be contradictory. For example, protecting certain geographical areas from aircraft noise can result in longer flight routes and thus more CO<sub>2</sub> emissions. In many cases, political decisions have an effect on our course of action in issues concerning environmental protection. What appears sensible from SWISS's perspective can lead to disadvantages elsewhere.

A company needs economic success to be able to invest in new technologies which help to reduce environmental burdens. Building on the basis of the economic results it has achieved, SWISS will replace its present Airbus A330s with more advanced versions of the type in the years ahead, and thus reduce further its emissions of noise and pollutants.

### Christoph Franz

Chief Executive Officer, Swiss International Air Lines

<b>SWISS at a glance</b>		2007	2006	change
<b>Operating business</b>				
Revenue	million CHF	4,895	4,153	+ 17.9%
EBIT	million CHF	571	231	+ 147.2%
Employees		7,160	6,441	+ 11.2%
<b>Transport performance</b>				
Fleet	aircraft	74	70	+ 4
Destinations		71	69	+ 2
Passengers	million	12.2	10.8	+ 13.2%
Freight carried	million tkm	1,028	1,064	- 3.4%
Seat load factor	percent	80.2	79.8	+ 0.4 PP
Freight load factor	percent	84.7	85.5	- 0.8 PP
<b>Environment</b>				
Fuel consumption	million tonnes	1.13	1.01	+ 10.4%
Specific fuel consumption, passenger transportation (actual load factor)	liters/100 pkm	3.7	3.8	- 2.5%
CO <sub>2</sub> emissions absolute	million tonnes	3.56	3.19	+ 11.6%

## Our business

### **SWISS remains SWISS – also with Lufthansa**

After meeting the challenges of establishing and consolidating itself, SWISS finally reached its cruising altitude in 2007, just six years after its foundation. The public authorities at the federal and cantonal levels and several renowned corporations for whom maintaining Switzerland's worldwide links to important markets was of particular importance supported the establishment of a national carrier with their equity stakes. During the reporting year, SWISS was able to create about 700 new jobs and expand its route network. In 2007, SWISS served 71 destinations on four continents and carried 12.2 million passengers aboard its fleet of 74 aircraft.

Today, the company can fulfill its task of connecting Switzerland with Europe and the world even better.

In its home market, SWISS must not only secure its position against competitors, but it also has to do its utmost to preserve a competitive framework of conditions in Switzerland. Zurich Airport and SWISS, which handles 55 percent of the traffic flows there, form a favorable system partnership. As they pursue the same interests to a great extent, they share important tasks. Both companies operate in a field of tension: Economic requirements and passengers' demands for the densest route network possible are contrasted by the need for peace and quiet on the part of people living in the surrounding area and by the resulting calls to restrict flight operations.

SWISS expects and requires that Switzerland's Federal Council (Bundesrat) fulfill its responsibility for national air transport and create a framework of conditions for the country's most important airport that will allow future growth in line with demand for both the national carrier and Switzerland's civil aviation.

## Framework of political conditions

### **Much ado about aircraft noise on the wane**

SWISS counts on innovative technologies as the best means to reduce aircraft noise. In the past 20 years, the area surrounding Zurich Airport that is heavily affected by noise has shrunk by nearly two-thirds – despite an increase in aircraft movements of almost 50 percent. This positive development in decoupling noise is continuing. Therefore, more aircraft do not automatically mean more noise.

SWISS takes the concerns of the people living around its home airport very seriously. As a concession to this population, SWISS has agreed to an extension of the ban on nighttime flights to seven hours in the upcoming operating regulations for Zurich Airport. No other airport with intercontinental hub operations worldwide knows the kind of absolute ban on nighttime flying already in effect in Zurich today.

#### **More difficult operating conditions**

In the wake of the restrictions on arriving traffic from the north put in place by Germany in 2003, Zurich Airport has had to organize its operations differently. Since the airport's start of operations more than 50 years ago, landings had taken place as a rule from the north. The two longest runways 14 and 16 are available for this purpose; both are equipped with instrument landing systems, allowing approaches even under the most difficult conditions of low visibility. The prerequisites for this are an absence of obstacles and a flat topography. About three-quarters of takeoffs took place toward the west, the remainder toward the south, or in rare cases toward the north or the east, when easterly winds prevailed.





It is above all the shifting of approach and departure routes that has led to significantly more people being more strongly exposed to aircraft noise in the areas closely surrounding the airport since 2005 – despite that fact air traffic has not increased.

#### Current restrictions at a glance

**Weekends and public holidays:** Approaches above German territory are only permitted from 9 a.m. to 8 p.m. on Saturdays, Sundays and German public holidays.

**Workdays:** No approaches above southern-German areas between 9 p.m. and 7 a.m.

**No departures over German territory:** Without exception, aircraft taking off toward the north must change course 2 miles before flying over German territory, i.e. within Switzerland.

**Exceptions:** Landings from the north are only permitted when there is insufficient visibility for approaches to runways 28 and 34 or insufficient length (under certain weather conditions) for approaches to runway 28.

#### No approaches before 9 a.m.

This operating concept, which grew in tandem with the airport's development, can no longer be applied under the politically-motivated restrictions currently in effect, especially not during the all-important operating hours early and late in the day. Just as consequential as these extensive operational restrictions is the fact that the lessening of a relatively light burden on the sparsely populated areas north of the airport and in Germany has led to a marked increase in the burden on the large areas with tens of thousands of inhabitants to the south and east of the airport. This in turn has generated new demands for further operational restrictions at SWISS's home base.

Due to these restrictive injunctions, approaches to runways 14 and 16 are no longer permitted during the most important operating hours. In the morning, approaches between 6 and 7 a.m. must therefore be flown from the densely populated south. In the evening, landings after 9 p.m. take place on runway 28 with approaches from the east. On weekends and German public holidays, this regulation even applies between 6 and 9 a.m., and again from 8 p.m. onwards.

#### A seven-hour ban on nighttime flying

Operating hours at Zurich Airport have been shortened in several steps. Just a few years ago, the ban on nighttime flying was in effect from midnight to 5 a.m. (6 a.m. for takeoffs). In an initial step, it was extended by half an hour in the morning. Under new, preliminary operating regulations, the ban on nighttime flying is now applied between 11 p.m. and 6 a.m. To reduce delays of scheduled flights, a tolerance of 30 minutes is granted in the evenings. On the condition that the airport can be fully used during the remaining operating hours between 6 a.m. and 11 p.m., SWISS agreed to extending the nighttime rest period in the interests of those living in the surrounding area.

In its role as home carrier, SWISS is especially affected between 6 and 7 a.m.: During these hours, the majority of long-haul flights, especially those from the Far and Middle East, arrive in Zurich. These flights bring thousands of passengers who make connections during the first morning bank of departing European flights. The first flights to European points leave Zurich between 7 and 8 a.m., which are departure times that need to be offered for business travelers within Europe. On these flights, SWISS and other airlines can not do without connecting passengers from long-haul flights. And on long-haul flights, these passengers are needed, in turn, to ensure profitable operations.

#### Referendum called for a nine-hour ban on nighttime flying

In November 2007, the population of the Canton Zurich voted on a referendum whose main demand was an extension of the ban on nighttime flying from seven to nine hours and a limitation of flights to 250,000 a year. Despite a spirited campaign, the voters rejected these demands. On the other hand, a counterproposal made by Zurich's cantonal council (the canton's parliament) was accepted by a majority vote: It established that as soon as the threshold of 320,000 annual takeoffs and landings at Zurich Airport is reached, the cantonal government must propose measures to relieve the burden on the population.

Together with this counterproposal, the Zurich Aircraft Noise Index was also accepted. It calls for limiting measures when 47,000 people living close to the airport are strongly affected by noise. In both cases, the consequences could entail further operating restrictions. In the context of the noise index, SWISS considers it highly problematic that there is still disproportionately high construction activity in noise-sensitive areas due to a lack of urban planning guidelines. Thus, the number of



At a distance of just over one kilometer from runway 16, new apartments for about 6,000 people are being built.

people strongly affected by noise will rapidly reach the 47,000 mark – even without any increases in air traffic. Once this threshold value has been reached, the Zurich government will propose measures within its own competence or support measures at the federal level.

#### **Further political consequences in Switzerland**

In the course of the past four years, the population's resistance to the airport's operations has increased. Further initiatives are being discussed at the political level. Some of these are likely to be voted on in Canton Zurich in the course of 2009.

- One administrative initiative submitted by approximately 70 communities in Canton Zurich demands a limitation to 320,000 aircraft movements, but also a ban on nighttime flying of eight instead of the current seven hours.
- The administrative initiative signed by the Protection Association of the Population Around the Airport and 42 communities strives for a moratorium on runway construction. According to this proposition, changes to the existing runway system of Zurich Airport would no longer be possible.
- Submitted in April 2007 with 8,400 signatures, the so-called "distribution initiative" demands a fair distribution of movements to the four points of the compass instead of channeling arrivals and departures. As far as German restrictions and the infrastructure of existing runways permits, all runway directions should be used for arrivals and departures under a principle of rotation and during pre-defined time periods. This would accomplish a fair balance of the airport's burdens and advantages, the initiators maintain.

#### **Difficult planning for the decades ahead**

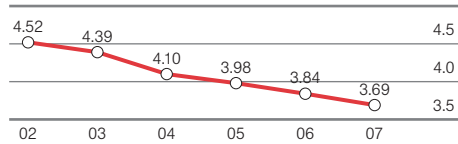
Defining a framework of conditions for civil aviation for the next 20 to 25 years is the competence of the Federal Government, while the cantons affected have the right to a say in certain areas. The Aviation Infrastructure Plan is meant to create a reliable basis for future planning, construction and operations, for Zurich Airport as well.

However, the interests among those affected and the airport operators are different and controversial. In the operational variants under discussion, the operating restrictions resulting from the German enforcement regulations play a decisive role. All the cantons participating in the process underline the airport's indispensable economic advantages and are willing to make concessions to allow for a measured development of Zurich Airport in future. Nevertheless, their objections to the possible operational variants veer in the opposite direction on a number of key points. For SWISS as the airport's main user, it is of central importance that safe, robust and punctual flight operations remain possible and that the hourly capacity of the runway system can be increased to competitive levels again. In the final analysis, the Federal Government must make – by 2010 – a decision that concedes a framework of political conditions to the airport and SWISS which allow demand-based development to continue.

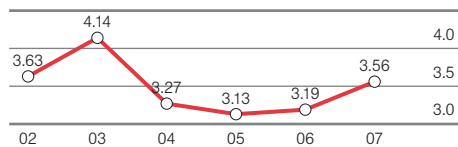
## Environment

## Responsible conduct with regard to the environment as a part of SWISS corporate culture

**Specific fuel consumption in passenger operations<sup>1</sup>**  
in liters/100 passenger kilometers



**Absolute CO<sub>2</sub> emissions of the SWISS fleet<sup>1</sup>**  
in million tonnes



### Methodology of calculation

For the first time, the figures for SWISS have been integrated into those of the Lufthansa Group. For this purpose, slight changes in the methodology of calculation had to be made.

Unlike its previous practice, SWISS has shown its specific kerosene consumption for passenger and freight operations separately since 2007. It amounts to 3.7 liters per 100 passenger kilometers transported and 300 grams (940 grams of CO<sub>2</sub>) per freight tonne kilometer transported. At SWISS, freight accounts for about one-third of the total weight transported.

### Four-Pillar Strategy

In accordance with the entire air transport industry, SWISS advocates a continuous reduction of greenhouse gases. This commitment is based on the following four pillars:

**Technological progress:** Low-emissions engines, more lightweight aircraft, improved aerodynamics.

**Improved infrastructure:** More efficient use of airspace and airports.

**Operational measures:** Shorter and more direct flight routes, fuel-saving procedures for approach and departure.

**Economic measures:** Option of voluntary CO<sub>2</sub> compensation.

Air transport is not an end in itself, but a reflection of the human need for mobility. And this need continues to grow. But as mobility increases, the effects on the environment increase as well. All modes of transport together produce about 17 percent of CO<sub>2</sub> emissions worldwide. Air transport alone is responsible for only 2.2 percent of the worldwide CO<sub>2</sub> emissions caused by human activities.

Aviation is on a growth trajectory unequaled by that of any other mode of transport. Despite this, it has managed to decouple the growth in kerosene consumption from that in traffic volumes.

### A mini-course in air transport and climate

The CO<sub>2</sub> emitted by air transport has the same effect as CO<sub>2</sub> from any other source. The way in which CO<sub>2</sub> affects the environment is also the same, independent of whether the emissions occurred on the ground or at cruising altitudes. Once released into the atmosphere, CO<sub>2</sub> continues to have its effect for about 100 years.

The combustion of kerosene also produces other gases, in particular nitrogen oxides and water vapor. The effect of these gases is highly complex. They can have a cooling or a warming effect on the climate. Their generation depends on the ambient temperature, air humidity and pressure. Their influence on the climate is scientifically far less thoroughly researched than that of CO<sub>2</sub>. However, the most important difference is the duration of effectiveness. Nitrogen oxides and water vapor have a climatic effect for just a few days or months.

Air transport is one of the most innovative industries. More lightweight materials, improved aerodynamics, modifications to existing engines, the development of quieter and lower-emission engines, and many other optimizations have helped to reduce specific kerosene consumption (consumption per passenger or freight unit transported) by about 20 percent over the last ten years. Progress has also been made with regard to noise emissions: The surface of the noise-burdened area<sup>2</sup> surrounding Zurich Airport has been reduced by two-thirds over the last 20 years – despite an increase in aircraft movements.

Over the last six years, SWISS has reduced its fuel consumption per 100 passenger kilometers transported by 17 percent to only 3.7 liters. This is one of the lowest values in the industry. In addition to many small measures, the most significant contributions to this improvement have come from high aircraft utilization rates and the replacement of older Boeing MD-11 aircraft by advanced Airbus A340s.

### 1. Lower fuel consumption thanks to technological progress

Investments in technological progress also pay off for the environment. SWISS takes advantage of existing opportunities to reduce fuel consumption by saving weight aboard its aircraft. For example, reducing the weight of the Airbus fleet deployed in Europe by just 1 kilogram per flight results in a reduction in CO<sub>2</sub> emissions of 16 tonnes per year.

<sup>1</sup> Freight and passenger emissions have been calculated separately for the first time since 2007, analogous to those of the Lufthansa Group. 2002 – 2006 inclusive of freight.

<sup>2</sup> 60 dB Leq (equivalent continuous noise level during the day, 6 a. m. – 10 p. m.).

Thanks to its economic success, SWISS will be able to make further investments in the modernization of its fleet over the years ahead. The new Airbus A330-300s that will replace the current A330-200s are more economical to operate, consume less fuel and offer more seats. Compared with the A330s currently in use, CO<sub>2</sub> emissions will be reduced by a further 13 percent per passenger carried.

A particularly innovative measure implemented by SWISS is the installation of significantly more lightweight high-tech seats made from carbon fibers on all aircraft in its regional and European fleets. The project was completed in spring 2008. The new seating improves comfort levels for passengers and saves weight at the same time. This modification alone lowers CO<sub>2</sub> emissions by 800 tonnes year by year and demonstrates clearly that economic and ecological considerations can be brought in line with customer benefits.

A further example on the aircraft in the SWISS regional fleet is the removal of little-used footrests, which are installed as standard equipment by the manufacturer. The goal is always to strike a sensible balance between customer comfort and weight reduction.

### **2. Smart flight management saves fuel**

Operational measures and far-sighted planning in flight operations help to use fuel sparingly. For example, SWISS pilots do not fly at maximum speed on European flights during the cruising phase. Additionally, a sophisticated flight management system helps to adapt altitude and speed optimally to prevailing conditions, such as high-altitude winds and temperature, and to the aircraft's current weight.

An additional system analyzes planning data for forthcoming flights, such as weather, winds, traffic on the route, routes assigned and loads. Based on this data, the quantity of kerosene needed can be calculated accurately. Thus, the system gives pilots reliable information for fueling. This is of great importance because every excess kilo of fuel increases consumption. For example, carrying 1 tonne of kerosene on a long-haul flight requires an additional 300 kilograms of kerosene.

### **3. Too many detours in airspace**

The EU has long regulated a large number of economic and political areas in a standardized manner. However, for air transport, one of its most important areas, uniform air traffic management within Europe's heavily-used airspace still appears to be a distant vision. Almost all states control their own airspace, which results in enormous coordination efforts and impedes efficient air transport. In Europe alone, the realization of the Single European Sky would help avoid three times the quantity of CO<sub>2</sub> emissions caused by SWISS each year.

The optimization of European air traffic control would be the largest and most efficient climate protection project in European aviation. That it has not yet become reality is due not to a lack of technical conditions, but above all to a lack of political will.

Political decisions that give priority to widespread – rather than local – public interests are also called for with regard to the situation at Zurich Airport. As already explained in detail, the framework of political conditions and unilateral regulations hinder efficient, punctual and environmentally protective operating processes. The current restrictions placed on traffic flows approaching Zurich Airport from a northerly direction add an average of five minutes to the approach phase. As a result, every aircraft affected consumes an additional – and avoidable – 200 to 300 kilograms of kerosene.

Over an entire year, this results in more than 9,000 tonnes of additional CO<sub>2</sub> emissions. Put differently: Lessening the noise burden for a relatively small number of people not only leads to a disproportionate additional noise burden on tens of thousands of people living in the area close to the airport, but also leads to a massive increase in additional greenhouse gas emissions – a calculation that makes no sense.



#### **4. CO<sub>2</sub> compensation – a voluntary contribution from customers**

By paying a voluntary supplement to the ticket price, passengers can now compensate the CO<sub>2</sub> emissions associated with their air travel. Thanks to a collaboration with the Swiss nonprofit foundation “myclimate,” the cost of compensating for the quantity of CO<sub>2</sub> each passenger generates in the course of a flight can now be calculated. The sums paid by passengers are invested by “myclimate” in projects selected by SWISS. The foundation ensures in turn the implementation of the selected projects avoids the same quantity of CO<sub>2</sub> emitted in flight. SWISS finances only projects that meet the highest international standard currently available, the WWF Gold Standard. Consequently, these projects must fulfill strict ecological and social requirements. While this increases the price of the compensation, it also ensures a sustainable use of funds. For example, the cost of compensation for a return flight between Zurich and New York is CHF 58. The CO<sub>2</sub> calculator offered by SWISS is based on the analysis of more than 60,000 SWISS and Lufthansa flights.

## **Social responsibility**

### **A commitment to society**

Following the demanding years of establishing the company and concentrating all forces on its economic turnaround, SWISS intends to assume increasing entrepreneurial responsibility for social issues once again. Together with its employees, SWISS is active in the areas of social responsibility, culture and sports.

#### **A “SWISS House” in Dar es Salaam**

A representative example of the airline’s social commitment is a joint project in Tanzania on the part of SWISS, its employees and its customers. The long-established children’s welfare organization which is supported by SWISS personnel realized yet another project benefiting children in the “third world” with support from passenger donations and SWISS. In November 2007, the “SWISS House,” one of 13 new houses for a total of 120 orphaned children, was handed over to its young occupants in Dar es Salaam. In addition, the SWISS Staff Foundation looks after the children’s livelihood and care. A similar SWISS House is planned at the SOS Children’s Village in Phuket, Thailand.

#### **Music, film, the arts and sports**

SWISS concentrates its sponsoring activities on the renowned international cultural and sporting events of the “Top Events in Switzerland” association, which are also used as hospitality platforms for specific customer groups. They include the Montreux Jazz Festival, the Locarno International Film Festival, Art Basel and the Omega European Masters. In addition, SWISS cooperates with the Zurich Opera House.

Furthermore, SWISS concentrates on selected image and commercial partners. These include, for example, the popular world number one in men’s tennis Roger Federer and its partnership with Baselworld, the world’s leading watch and jewelry fair. Further partners are institutions such as the World Economic Forum (WEF) and the renowned St. Gallen University.



In the foreground of all these activities is the goal to invest in long-term, sustainable partnerships and to live out the corporate values of SWISS – such as “personal care,” “quality in every detail” and “typical Swiss hospitality” – by means of these cooperations.

### **Getting along well with neighbors**

As one of the region’s largest employers, SWISS also bears social and civic responsibility in the area surrounding its home base.

SWISS is to be seen as more than just another annoying “noise generator,” but rather as a company that also offers thousands of attractive jobs and is committed to the region’s prosperity. In addition to the dialogue with public authorities and people living near company locations, support for associations and institutions are an effective form of cultivating neighborly ties. In particular, SWISS supports and promotes efforts in the areas of sports, education and culture that appeal to a wider public. These are primarily events at the local and regional levels. An important role is played here by the sponsorship of activities for young people, such as the Kloten Flyers, an organization for up-and-coming ice hockey players that is considered exemplary in Switzerland.

### **SWISS as an employer**

Social and economic benefits are also of central importance to the sustainable development of the air transport industry. Having achieved its turnaround, SWISS can not only invest in more advanced aircraft, but can also grow sustainably and create new, attractive jobs. In 2007, the number of employees grew by 700 to a total of 7,160 people. In January 2008, the airline welcomed the 500th new cabin crew member hired since the launch of the SWISS Job Offensive at the end of 2006. Most of the new employees work in Zurich, Basel or Geneva.

Reflecting its international activities, SWISS counted employees from 87 countries in 2007. Some 5,848 jobs are located in Switzerland alone. Well-trained and motivated employees are the basis of the high-quality services for which SWISS is appreciated by its customers.

Training and continuing education are of particular importance in the area of human resources. These cover subject areas such as leadership and social competencies for managers at all levels, conflict management, communication, teamwork and project management. On the airline’s annual “Management Day,” the managerial principles and values that are to be pursued at SWISS are developed and deepened.

SWISS also offers continuing education and training courses for young employees who would like to develop within the company and venture into new areas of responsibility. In this way, the airline helps them to get fit for their careers.

At the end of 2007, 98 women held management positions at SWISS. Of the total of 47 apprentice positions, 12 were in business-related professions, while the remaining 35 apprentices were training to be polymechanics in the aircraft maintenance field. Furthermore, trainees find good opportunities at SWISS to start their professional careers.

In cooperation with its employee representatives, SWISS aims at developing modern work-time models in the areas of full-time and part-time work. This makes reentry into the working world after the birth of a child easier, for example.

The work climate at SWISS is characterized by motivated and committed employees who can apply and develop themselves and their abilities in an appreciative and respectful working environment.

### **Job engine for Switzerland**

Thanks to an attractive framework of conditions, SWISS can offer numerous services at its home base that also have a significant influence on the value-adding chain. For example, one additional long-haul flight per day with an Airbus A340 creates about 110 direct jobs, 100 indirect jobs at suppliers and more than 100 related jobs across Switzerland. Were a foreign airline to provide the same offer in Switzerland, it would generate only about 80 additional jobs locally. Therefore, each long-haul flight SWISS offers from Switzerland matches the job-creating power of a medium- to large-sized company.

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## Glossary

**3C** Combat Climate Change. The 3C initiative comprises globally active companies which are committed to climate protection. The initiative's goal is to demonstrate global approaches to solving a global problem. Lufthansa joined the 3C initiative in 2007.

**ACARE** Advisory Council for Aeronautics Research in Europe. Created in 2001, the ACARE council consists of representatives from the EU member states, EU Commission, Eurocontrol, the European aerospace industry, research institutions and others. Its main task is to develop and implement the strategic research agenda (SRA) for Europe's aerospace sector.  
→ [www.acare4europe.org](http://www.acare4europe.org)

**AEA** Association of European Airlines.  
→ [www.aea.be](http://www.aea.be)

**Atmosphere** The whole mass of air surrounding the Earth. It is divided into various layers, distinguished from one another by distinct differences in vertical bands of temperature. Important for air traffic are the two lower layers: the troposphere and the stratosphere, lying above that. The troposphere's upper boundaries vary depending on season and latitude. They lie at altitudes of 16 to 18 kilometers above sea level at the equator, and at 8 to 12 kilometers above sea level at the poles. The temperature in the tropopause, the transition layer between troposphere and stratosphere, drops to only about minus 60 degrees Celsius. It rises again in the stratosphere. There the concentration of water vapor is extremely low. The so-called ozone layer is also located in the stratosphere at altitudes of about 25 to 30 kilometers. Today's commercial aircraft fly at cruising altitudes of between 8 and 13 kilometers. According to the latest research, air traffic emissions do not have a direct impact on the ozone layer.

**B.A.U.M.** Bundesdeutscher Arbeitskreis für Umweltbewusstes Management e.V. (Federal Working Group for Environmentally-Aware Management). B.A.U.M. was founded in 1984 as the first independent environmental initiative of German business. At currently 450 members, it is the largest of its kind in Europe. Lufthansa has been a member of the Working Group since 1997.  
→ [www.baumev.de](http://www.baumev.de)

**Carbon dioxide (CO<sub>2</sub>)** Gas resulting in nature from the burning or decomposition of organic masses (e.g. plant material) and from the breathing process of humans and animals. The greenhouse gas CO<sub>2</sub> remains for about 100 years in the atmosphere. Scientists attribute the increase of atmospheric CO<sub>2</sub> over the last 100 years to the burning of fossil fuels (e.g. coal, oil, natural gas) by humans. Per tonne of fuel, 3.15 tonnes of CO<sub>2</sub> result from the combustion process. Currently, about 2.2 percent of man-made CO<sub>2</sub> emissions are due to air traffic.

**Carbon monoxide (CO)** Chemical compound consisting of one carbon and one oxygen atom, formed in the incomplete combustion process of substances containing carbon. For aircraft engines, the level of

CO emissions depends greatly on the thrust level: The emissions per kilogram of fuel burned are higher at idle settings, while taxiing and on approach than during the climbing and cruising phases.

**Catering** Internationally used term for the supplies loaded aboard an aircraft, including in-flight meals and service items.

**CDA** Continuous Descent Approach. Procedure for a flight's approach phase that reduces noise emissions 20 to 40 kilometers ahead of the runway threshold (Frankfurt). At Frankfurt Airport, it can only be used at night due to capacity restrictions.

**Change Management** Change Management comprises all the measures a company uses to introduce or adapt to change. The more intensively employees are informed about and involved in the processes of change, the more successful these changes will be.

**Chapter-4 aircraft** Aircraft that meet the regulations of the strictest noise protection standard currently in force – the Chapter-4 noise standard. The Environmental Committee (CAEP) of the ICAO agreed on this standard in September 2001. As a result, all aircraft newly certified from 2006 must remain cumulatively below the Chapter-3 noise levels by 10 decibels or more. The maximum noise emission values for aircraft were introduced by the ICAO under Annex 16 to the convention on international civil aviation. Noise levels are measured at three measuring points: at 6,500 meters from the beginning of the runway (brake-release point) and 450 meters to the side of the runway for take-offs (sideline), and at 2,000 meters in front of the runway threshold (approach) for landings. The latter corresponds to a flyover altitude of about 120 meters. The permitted values depend on the aircraft's maximum take-off weight and number of engines.

### Corporate Social Responsibility (CSR)

A company's responsibilities toward society at large, or "corporate citizenship." CSR refers to a company's voluntary efforts in the area of society.

**Corporate university** Corporate education institution for professionals and managers. See also Lufthansa School of Business (LHSB).

**Decibel (dB)** Measuring unit for the intensity and pressure of sound. The difference in intensity between the softest sound the human ear can perceive and the pain threshold is 1:10 trillion. To depict this enormous range objectively, acoustics uses the logarithmic decibel scale. On this scale, the value "0" is assigned to the perception threshold (for a sound of 1,000 Hz) and the pain threshold at the value "130." An increase of 10 dB corresponds to a tenfold increase in the sound's intensity. For the perceived volume, a difference of 10 dB corresponds to half or double the volume. However, the human ear is not equally sensitive across the entire range of frequencies. Low and high sounds are not perceived as being equally loud even at the same intensity. For measurements, this difference is equalized

and noted accordingly. The best known such notation is the "A value," marked by the index dB(A). To measure aircraft noise, the EPNdB (Effective Perceived Noise Decibel) unit is used internationally.

**Deicing** An aircraft can not take off with ice and snow on its wings and horizontal stabilizers. Such accumulations alter the aerodynamics and thus imply an enormous safety risk. For this reason, aircraft are forbidden to take off when they are covered by hoarfrost, snow or ice. Under wintry weather conditions, an aircraft's critical surfaces must be deiced with a mixture of water, propylene glycol and alcohol, which also protects them from icing over again (deicing/antiicing). On average, about 900 liters of deicing fluid are required to deice a Boeing 747 each time. By comparison, only 300 liters are needed for a Boeing 737. This deicing fluid is almost completely biodegradable and poses no danger for the environment. On an average winter day, about 65,000 liters of deicing fluid are used at German airports. On dry days with freezing temperatures, this figure is significantly lower.

### Deutsches Netzwerk Wirtschaftsethik (dnwe)

German Network for Business Ethics. dnwe is a nonprofit organization, in which Lufthansa has been a member since January 1998. dnwe has about 450 current members, including many from German business, politics, religion and science. At the same time, dnwe is a national association of the European Business Ethics Network (EBEN).  
→ [www.dnwe.de](http://www.dnwe.de)

**Diversity** In a corporate context, diversity refers to all characteristics that distinguish employees from one another. Diversity management offers approaches for handling human differences for the benefit of company and employees alike.

**DLR** German Aerospace Center. The DLR serves scientific, economic and social purposes. It maintains 30 institutes, testing facilities and operational sites. Its goal is to help – using the means of aviation and space flight – to secure and shape the future. In its work, the DLR also seeks cooperation and allocation of research tasks among European partners.  
→ [www.dlr.de](http://www.dlr.de)

**Dow Jones Sustainability World Index** The leading sustainability index worldwide lists the top 10 percent of companies in each industry, whose sustainable approach to corporate management is exemplary. Lufthansa was again listed in 2007.

**econsense** econsense – Forum for Sustainable Development of German Businesses is an association of globally active corporations and organizations in German industry that have integrated the guiding principle of sustainable development into their corporate strategies. Lufthansa has been a member of this cross-industry network since its foundation in 2000.  
→ [www.econsense.de](http://www.econsense.de)

**Elder Care** Term for giving care to older next of kin. Elder care is part of Diversity Management. When needed, the Lufthansa Family Service advises employees on care options for family members in need.

**EMAS** Environmental Management and Audit Scheme, colloquially referred to as EU eco-audit regulations. European regulations concerning environmental management and certification.

**Employee shares** Employee shares are usually offered to staff at preferential prices and with favorable terms of payment. Ordinarily, they are subject to a blocking period, during which they may not be sold.

**Equivalent continuous noise level (Leq)** The Leq is a measure for the energetic average of all sound pressure levels over a defined period of time. All sound events that differ in intensity and duration are summarized according to mathematical rules. The resulting average value is an accepted and proven measurement of the "noise quantity" occurring over an observed time interval.

**Export guarantees** Known in Germany as "Hermes guarantees." They serve to open up difficult markets and protect German companies from losses due to default by business partners abroad. The country where the exporting company has its headquarters assumes part of the export risk through its Export Credit Agency.

**Freight performance (FTKO/FTKT)** Airlines distinguish between freight performance offered (FTKO, freight tonne kilometers offered) and its sold freight performance (FTKT, freight tonne kilometers transported). See also tonne kilometers.

**FTSE4Good** Index introduced by the Financial Times and the London Stock Exchange in 2001. The FTSE4Good lists only companies with above-average performance in the areas of human rights, social standards and environmental protection. Lufthansa has been listed since 2001.

**Fuel dump** Dumping of fuel in-flight due to emergency situations. A procedure used on long-haul aircraft before unscheduled landings (e.g. in the event of technical problems or serious passenger illness) to decrease the aircraft's weight to the maximum permissible landing weight. In the event of a fuel dump, special airspace is assigned to the aircraft, if possible above uninhabited or thinly populated areas. Fuel is usually dumped at altitudes of 4–8 kilometers. A minimum altitude of 1,500 meters and a minimum speed of 500 km/h are required. The aircraft may not fly a fully closed circle. The dumped kerosene forms a fine mist in the turbulence behind the aircraft. Despite the use of highly sensitive methods of analysis, no contamination has been determined so far in plant or soil samples after fuel dumps.

**Functional Airspace Block (FAB)** A Functional Airspace Block is a unit of airspace defined in accordance with operational requirements. Priority is

given in this case to the requirements of integrated airspace management across national borders.

**Global Compact** Global network in whose context the United Nations cooperates with private-sector corporations and civil action organizations to advance human rights, labor standards, environmental protection and anti-corruption measures. Lufthansa has been a member since 2002.  
→ [www.unglobalcompact.org](http://www.unglobalcompact.org)

**Greenhouse gases** Gaseous substances that contribute to the greenhouse effect and have both natural and human (anthropogenic) causes. The most important natural greenhouse gases are water vapor (H<sub>2</sub>O), carbon dioxide (CO<sub>2</sub>) and methane (CH<sub>4</sub>); the most important anthropogenic greenhouse gas is carbon dioxide from the combustion of fossil fuels. It accounts for about 77 percent of the greenhouse effect attributable to human activities. Methane, primarily generated by agriculture and large-scale animal husbandry, contributes about 14 percent to the anthropogenic greenhouse effect. Other artificial greenhouse gases are nitrous oxide (N<sub>2</sub>O), fluorocarbons (FCs and HFCs), sulfur hexafluoride (SF<sub>6</sub>) and chlorofluorocarbons (CFCs). Source: World Resources Institute (WRI), 2005.

**IATA** International Air Transport Association. The general organization of international commercial aviation.  
→ [www.iataonline.com](http://www.iataonline.com)

**ICAO** International Civil Aviation Organization. A United Nations agency that develops internationally binding norms for civil aviation.  
→ [www.icao.int](http://www.icao.int)

**ICC Deutschland** German chapter of the International Chamber of Commerce. The ICC was founded in 1919 as the World Business Organization. More than 1,500 business organizations and over 5,000 corporations are organized in the worldwide framework of the ICC. Lufthansa has been a member since 1955.  
→ [www.icc-deutschland.de](http://www.icc-deutschland.de)

**Initiative Pro Recyclingpapier** Founded in 2000, the initiative unites various industries and aims at promoting an intensive usage and the acceptance of recycling paper. Lufthansa is one of the initiative's founding members.  
→ [www.papiernetz.de](http://www.papiernetz.de)

**Intermodal transport** Transport system that uses at least two modes of transport – such as train and plane – integrated in a transport chain to carry people or goods from door to door. Thanks to a global approach, existing transport capacities can be used more efficiently.

**IPCC** Intergovernmental Panel on Climate Change. An international UN panel of experts on climate change, founded in 1988 by the World Meteorological Organization (WMO) and the United Nations Environmental Program (UNEP).  
→ [www.ipcc.ch](http://www.ipcc.ch)

**ISO 14001** International environmental management system. It allows companies to anchor environmental protection in their organization in a systematic manner.  
→ [www.iso.org](http://www.iso.org)

**Kerosene** Fuel for jet and propeller engines that is chemically similar to petroleum. Like diesel fuel or gasoline, kerosene is produced by distilling crude oil; unlike these fuels, kerosene does not contain halogenated additives. Due to its manufacturing process, it does not contain benzene hexachloride either. Worldwide, aircraft currently consume almost 170 million tonnes of kerosene per year. This represents about 5–6 percent of the world's total crude oil production.

**Kyoto Protocol** Codifies binding goals for reducing emissions of greenhouse gases. It was passed in 1997 as an amendment to the protocol concerning the formulation of the United Nations Framework Convention on Climate Change (UNFCCC) and was ratified in February 2005.

**Lufthansa School of Business (LHSB)** Germany's first corporate university. It has received multiple awards for the worldwide standards it establishes for the development and training of professionals and managers. The LHSB supports processes of change within the Group and promotes a shared management culture.

**Mentee** Junior employee who is supported by an experienced mentor in his or her personal and professional development.

**Mentor** Experienced specialist or manager who passes on his or her know-how to a junior employee and facilitates contacts.

**Mentoring** Instrument for targeted support of junior employees. Focuses on regular personal contacts between mentor and mentee.

**MRO** Acronym standing for maintenance, repair and overhaul of aircraft.

**Nitrogen oxides (NO<sub>x</sub>)** Chemical compounds consisting of one nitrogen and several oxygen atoms. NO<sub>x</sub> is defined as the sum of NO and NO<sub>2</sub> compounds. Natural sources include lightning and microbes in the soil. Nitrogen oxides are also generated in combustion processes under high pressures and temperatures. Both of these parameters have been increased in modern aircraft engines to significantly reduce fuel consumption as well as emissions of carbon monoxide and unburned hydrocarbons. However, future combustion chambers of an advanced design could help reduce NO<sub>x</sub> emissions by 85 percent. Depending on the type of aircraft and operational conditions, this value varies between 6 and 20 kilos per tonne of fuel burned. Air traffic has a share of 2–3 percent in man-made NO<sub>x</sub> emissions. Climate models show that nitrogen oxides have increased the concentration of ozone at cruising altitudes by a few percentage points.

**OHSAS 18001** Occupational Health and Safety Assessment Series. Job safety management system, developed by the British Standards Institution in cooperation with international certification organizations.

**Ozone (O<sub>3</sub>)** Molecule consisting of three oxygen atoms formed in the stratosphere. The ozone layer located in the stratosphere has an important protective function, as it absorbs harmful ultraviolet light. While ozone at higher altitudes is broken down massively by chlorofluorocarbons (CFCs), it develops close to the ground under the influence of sunlight from numerous precursor substances ("summer smog") and irritates the mucous membranes. At current levels, nitrogen oxide emissions from air traffic at cruising altitudes cause an increase in atmospheric ozone, analogous to the generation of summer smog, estimated by scientists at 3–4 percent on the heavily-flown North Atlantic routes.

**Partners for Innovation** Lufthansa has been a Partner for Innovation since 2005. More than 200 companies, associations and institutions participate in this initiative. Its goal is to bundle the scientific and strategic know-how of its members and to translate innovative ideas into marketable products.  
→ [www.innovationen-fuer-deutschland.de](http://www.innovationen-fuer-deutschland.de)

**Passenger kilometers (PKO/PKT)** Measure for transport performance in passenger carriage (number of passengers multiplied by distance flown). Here one distinguishes between available transport performance (PKO, passenger kilometers offered or synonymously SKO, seat kilometers offered) and actual transport performance (PKT, passenger kilometers transported).

**Seat kilometers (SKO)** Measure for the transport capacity available (SKO, seat kilometers offered).

**Seat load factor** Passenger-related measure of utilization of aircraft: The ratio of transport performance (PKT, passenger kilometers transported) to capacity (PKO, passenger kilometers offered).

**Single European Sky (SES)** Unified European airspace. This initiative of the European Union aims at optimizing traffic flows, standardizing licenses for air traffic controllers, harmonizing technology and thus maintaining safety, capacities and punctuality in growing air transport.

**Slot** Designated point in time at which an airline may use an airport's runway for takeoff or landing.

**Stakeholders** Groups or individuals who formulate their demands on a company (e.g. attainment of corporate goals) and pursue these either personally or through representatives. This includes shareholders, employees, customers, suppliers and others.

**Sustainable development** According to the guiding principle of sustainable development formulated in 1987 by the World Commission for Development and the Environment (Brundtland Commission), "sustainable development is a form of development that meets the needs of today's generation without jeopardizing the abilities of future generations to satisfy their own." For businesses, this means acting responsibly not only in economic matters but also in environmental and social issues. All three aspects – economic, ecological and social – must be kept in balance.

**Telework** Transfer of the workplace, e.g. to the home. Access to corporate data is provided via the Internet.

**Tonne kilometers (TKO/TKT)** Measure of transport performance (payload multiplied by distance). One distinguishes between available transport performance (TKO, tonne kilometers offered) and the actual transport performance (TKT, tonne kilometers transported). In calculating payloads, passengers are taken into account by means of a statistical average weight.

**Trace gases** Gases of which there are only very small amounts present in the atmosphere (e.g. ozone, methane, nitrous oxide, etc.) but which are of great significance for the Earth's climate and the chemical processes in the atmosphere.

**Transparency International** Anti-corruption organization, of which Lufthansa has been a member since 1999.  
→ [www.transparency.de](http://www.transparency.de)

**Unburned hydrocarbons (UHCs)** Organic mixture of carbon and hydrogen that results from the incomplete combustion of fuels containing hydrocarbons or from the evaporation of fuel.

**UNEP** The United Nations Environmental Program.  
→ [www.unep.org](http://www.unep.org)

**UN Global Compact** see Global Compact.

**Volatile Organic Compounds (VOCs)** Volatile organic substances that are characterized by high steam pressure and thus evaporate easily into the atmosphere at room temperature. VOCs are present in solvents, cleaning agents, fuels and other substances. In the presence of nitrogen oxides and intense sunlight, VOCs lead to the generation of ozone.

**Water vapor** Water vapor is the most important greenhouse gas, even ahead of carbon dioxide. Without water vapor from natural sources, the Earth's surface would be around 22 degrees Celsius cooler. This makes water vapor responsible for two-thirds of the natural greenhouse effect (33 degrees Celsius). For each kilo of kerosene burned, 1.24 kilos of water vapor are released. Concerns that air traffic might increase the concentration of water vapor in the stratosphere and thus change the climate have been refuted by scientific research. The German Aerospace Center (DLR) concluded that even a one hundred-fold increase in the quantity of water vapor emitted by air traffic would not result in a detectable climatic signal.

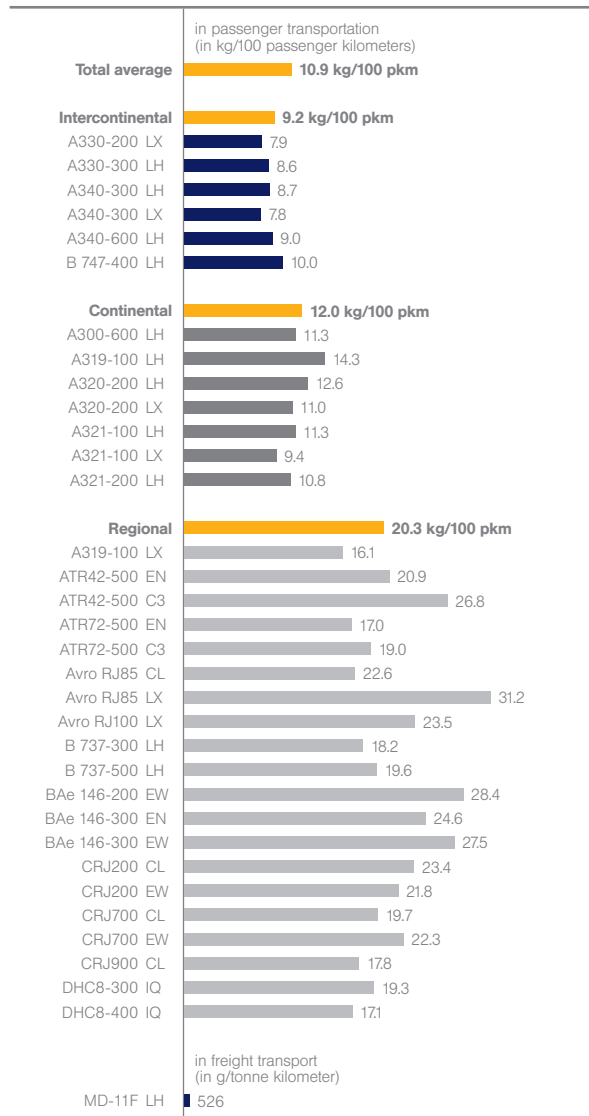
**Work-life balance** Refers to a healthy equilibrium between work and private life.



## Fleet overview: CO<sub>2</sub> and NO<sub>x</sub> emissions, noise and fuel consumption

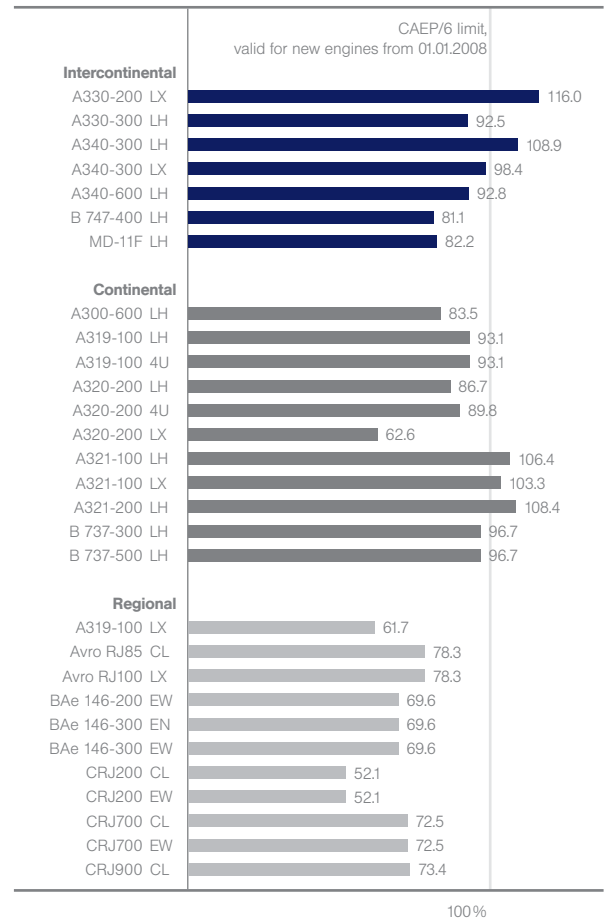
### Specific CO<sub>2</sub> emissions by type of aircraft

Lufthansa Group fleet (active fleet in 2007)



### NO<sub>x</sub> emissions by type of aircraft in comparison with the future CAEP/6 limit in percent

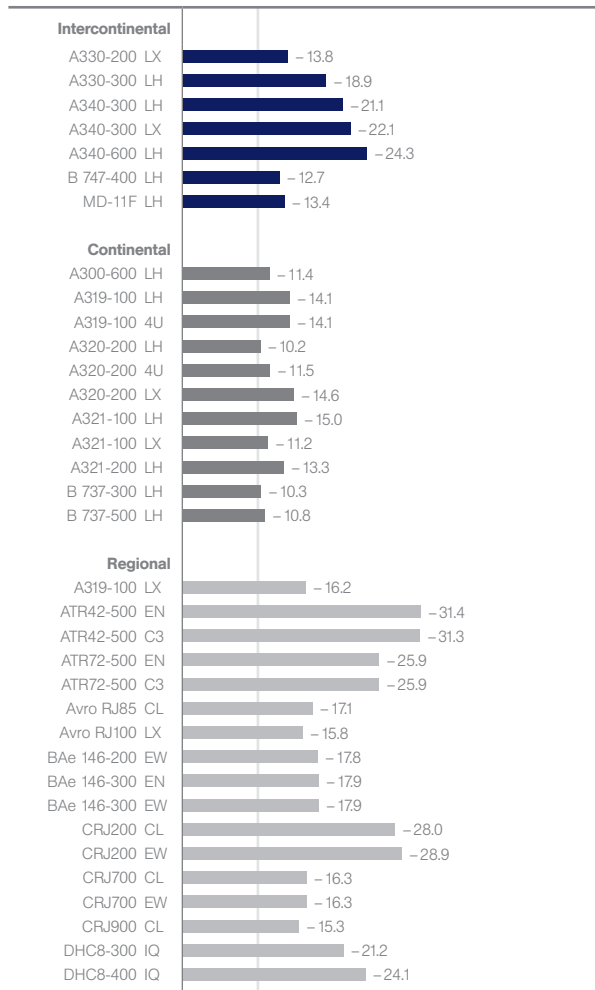
(active jet fleet on 31.12.2007)



4U = Germanwings  
 C3 = Contact Air  
 CL = Lufthansa CityLine  
 EN = Air Dolomiti  
 EW = Eurowings  
 IQ = Augsburg Airways  
 LH = Lufthansa Passenger Airline,  
 Lufthansa Cargo  
 LX = SWISS

**Margins below the noise limit of ICAO Chapter 3\***

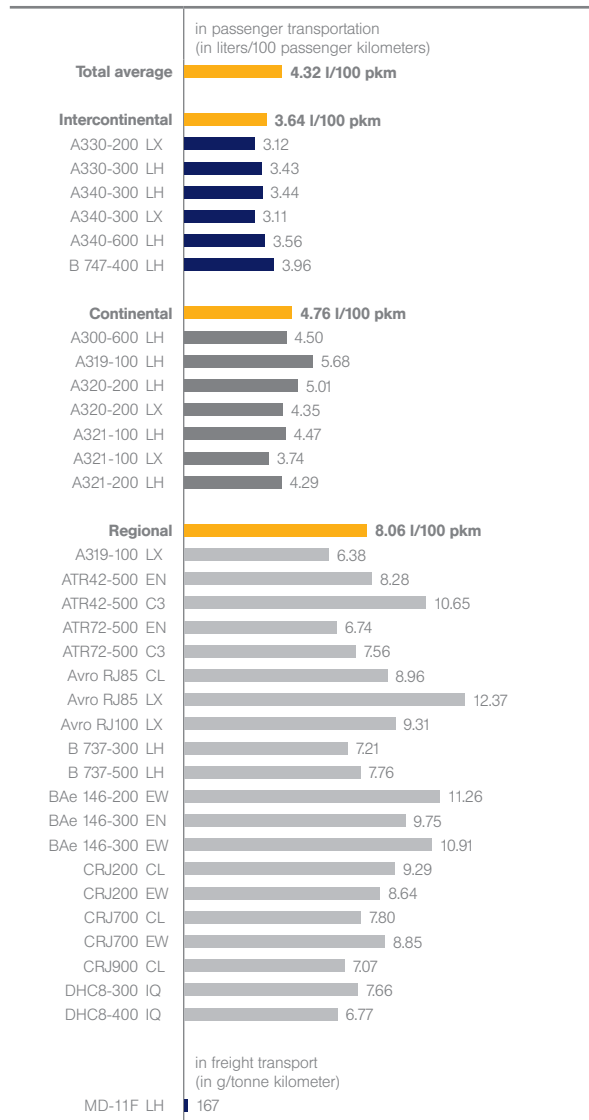
Lufthansa Group fleet (active fleet on 31.12.2007)  
in EPNdB



\* New limit according to ICAO Chapter 4, binding since 2006 for new aircraft: -10.0 EPNdB compared with Chapter 3

**Specific fuel consumption by type of aircraft**

Lufthansa Group fleet (active fleet in 2007)



## Contact partners

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→ [www.lufthansa-financials.com](http://www.lufthansa-financials.com)

### Lufthansa Group companies

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You can find contact partners in the Lufthansa Group companies at:  
→ <http://responsibility.lufthansa.com>



Lufthansa is a member of  
or represented in:



German Environmental  
Management Association



COMBAT CLIMATE CHANGE  
*A Business Leaders' Initiative*



Member 2007/08



Forum Nachhaltige Entwicklung

Forum for  
Sustainable  
Development



**Ideen erfolgreich machen**  
Partner für Innovation

Making ideas a success  
Partners for innovation



Pro Recycling Paper Initiative



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